The Scottish Health Survey

2017 edition | volume 1 | main report
A National Statistics Publication for Scotland

Editors:
Joanne McLean[1], Shanna Christie[1], Stephen Hinchliffe[1] and Linsay Gray[3]

Principal authors:, Diana Bardsley[1], Lucy Dean[1], Isla Dougall[1], Qingyang Feng[1], Linsay Gray[3], Malin Karikoski[4], Joe Rose[1], Caroline Stevens[1], Alastair H Leyland[3].

[1] ScotCen Social Research, Edinburgh.

[2] University of Edinburgh.

[3] MRC/CSO Social and Public Health Sciences Unit, Glasgow.

[4] NatCen Social Research, London.

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Foreword from the Chief Medical Officer

This report presents the findings of the 2017 Scottish Health Survey. The survey provides data extending back over 20 years. The 2012-2017 surveys were commissioned by the Scottish Government and produced by a collaboration between ScotCen Social Research, the MRC/CSO Social and Public Health Sciences Unit at the University of Glasgow, The Centre for Population Health Sciences at the University of Edinburgh and The Public Health Nutrition Research Group at Aberdeen University.

The survey provides us with an immensely valuable collection of data on cardiovascular disease and related risk factors including smoking, alcohol, diet, physical activity and obesity. Information on general health, mental health and dental health is also included. The survey's rotating module, which asks certain questions every two years, includes information on accidents, dental health services, experience of discrimination and harassment, social capital, and stress at work.

The 2017 report presents the first Scotland level estimates of food insecurity and knowledge of cardiopulmonary resuscitation (CPR).

With each additional survey year, the ability to analyse trends adds considerably to the usefulness of this data source, while combining data from previous surveys allows for more detailed analysis of specific health conditions, risk factors and related health behaviours.

I am pleased to welcome this valuable report and to thank the consortium led by ScotCen Social Research for their hard work in conducting the survey and preparing this report. Most importantly, I would also like to thank the 5,300 people who gave their time to participate in the survey. The information they have provided is invaluable in developing and monitoring public health policy in Scotland.

Dr Catherine Calderwood
Chief Medical Officer for Scotland
Scottish Government Health Directorates

Editors' acknowledgements

INTRODUCTION

Joanne McLean and Shanna Christie

POLICY CONTEXT

In July 2018, the Scottish Government launched a completely revised National Performance Framework (NPF)[1], developed together with the public, practitioners and experts to reflect the values of the people and the aspirations held for the future of people living in Scotland. The overarching core purpose guiding the NPF is 'to focus on creating a more successful country with opportunities for all of Scotland to flourish through increased wellbeing, and sustainable and inclusive economic growth'. Related to this is the value that 'we are a society which treats all our people with kindness, dignity, and compassion, respects the rule of law, and acts in an open and transparent way'. There are eleven National Outcomes which contribute to measuring progress towards this vision for Scotland of which one is focussed solely on health - 'we are healthy and active'. Underpinning this National Outcome are a number of national indicators:

- Healthy life expectancy
- Mental wellbeing
- Healthy weight
- Health risk behaviours
- Physical activity
- Journeys by active travel
- Quality of care experience
- Premature mortality

In addition the National Outcomes have been designed to link with a number of the United Nation's Sustainable Development Goals. The specific goals that this health outcome relates to are:

- Gender equality
- Reduced inequalities
- Responsible production and consumption
- Good health and well-being

Many of the National Indicators that track progress towards the national outcomes have relevance to health[2]. The Scottish Health Survey (SHeS) is used to monitor progress towards the following National Indicators:

- Healthy Life Expectancy
- Mental Wellbeing
- Healthy Weight
- Health Risk Behaviours
- Physical Activity

- Child wellbeing
- Food insecurity

The Scottish Government's Programme for Government: Delivering for Today, Investing for Tomorrow 2018-19[3], published on 4th September 2018, sets out the need to close the gap between the health of the wealthiest communities and the poorest as well as improve population health overall. It includes action to reform the way we respond to and treat mental ill-health, tackle poor diet and obesity and increase physical activity.

As a study of public health, the Scottish Health Survey plays an important role in assessing health outcomes, health risks and the extent of health inequalities in Scotland and how these have changed over time. As well as being the official source for measuring progress on a number of NPF indicators, SHeS is used to monitor numerous health strategies, programmes and initiatives.

Each of the chapters included in this volume addresses an aspect of health that relates either directly or indirectly to the Government's objective that 'we are healthy and active'.

THE SCOTTISH HEALTH SURVEY SERIES

The Scottish Health Survey has been carried out annually since 2008 and prior to this was carried out in 1995[4], 1998[5], and 2003[6]. The 2017 survey was the thirteenth in the series.

Commissioned by the Scottish Government Health Directorates, the series provides regular information on aspects of the public's health and factors related to health which cannot be obtained from other sources. The SHeS series was designed to:

- estimate the prevalence of particular health conditions in Scotland
- estimate the prevalence of certain risk factors associated with these health conditions and to document the pattern of related health behaviours
- look at differences between regions and between subgroups of the population in the extent of their having these particular health conditions or risk factors, and to make comparisons with other national statistics for Scotland and England
- monitor trends in the population's health over time
- make a major contribution to monitoring progress towards health targets

Each survey in the series includes a set of core questions and measurements (height and weight and, if applicable, blood pressure, waist circumference, urine and saliva samples), plus modules of questions on specific health conditions and health risk factors that vary from year to year. Each year the main sample has been augmented by an additional boosted sample for children. Since 2008

NHS Health Boards have also had the opportunity to boost the number of adult interviews carried out in their area.

The 2012-2017 surveys were carried out by ScotCen Social Research, the MRC/CSO Social and Public Health Sciences Unit (MRC/CSO SPHSU) based in Glasgow, The Centre for Population Health Sciences at the University of Edinburgh and The Public Health Nutrition Research Group at Aberdeen University.

THE 2017 SURVEY

Topics

Cardiovascular disease (CVD) and related risk factors remains the principal focus of the survey. The main components of CVD are ischaemic heart disease (IHD) (or coronary heart disease) and stroke, both of which are clinical priorities for the NHS in Scotland[7,8,9]. Diseases of the circulatory system are the second most common causes of death in Scotland after cancer, accounting for 26% of deaths in 2017. This includes 12% of deaths which are caused by IHD, with a further 7% caused by cerebrovascular disease (e.g. stroke)[10]. Early mortality from heart disease and stroke have both improved in recent years (surpassing targets in both cases), but concern remains about continuing inequalities in relation to morbidity and mortality linked to these conditions[7]. The SHeS series now has trend data going back over two decades, and providing time series data remains an important function of the survey.

Many of the key behavioural risk factors for CVD are in themselves of particular interest to health policy makers and the NHS. For example, smoking, poor diet, lack of physical activity, obesity and problematic alcohol use are all the subject of specific strategies targeted at improving the nation's health. SHeS includes detailed measures of all these factors which are reported on separately in Chapters 4-8. There are two chapters which focus on specific health conditions - General Health, Long-Term Conditions and Cardiovascular Disease (Chapter 1) and Mental Health and Wellbeing (Chapter 2). The remaining chapters report Dental Health and Services (Chapter 3) and Gambling (Chapter 9).

Sample

The Scottish Health Survey is designed to yield a representative sample of the general population living in private households in Scotland every year.

The current survey design also means that estimates at NHS Health Board level are available by combining four consecutive years of data. NHS board results for the period 2014-2017 have been published at the same time as this report.

Those living in institutions, who are likely to be older and, on average, in poorer health than those in private households, were outwith the scope of the survey. This should be borne in mind when interpreting the survey findings.

A random sample of 4,445 addresses was selected from the Postcode Address File (PAF), using a multi-stage stratified design. Where an address was found to have multiple dwelling units, one was selected at random. Where there were multiple households at a dwelling unit, a single household was selected at random. Each individual within a selected household was eligible for inclusion. Where there were more than two children in a household, two were randomly selected for inclusion, to limit the burden on households. The individuals interviewed at these addresses form the 'main sample'.

Two further samples were selected for the survey in 2017: a child boost sample (4,584 addresses) in which up to two children in a household were eligible to be interviewed but adults were not, and a Health Board boost sample (482 addresses) for those Health Boards which opted to boost the number of adults interviewed in their area.

Fieldwork

A letter stating the purpose of the visit was sent to each sampled address in advance of the interviewer visit. Interviewers sought the permission of each eligible adult in the household to be interviewed, and both parents' and children's consent to interview up to two children aged 0-15.

Interviewing was conducted using a combination of Computer Assisted Interviewing (CAI), where the questionnaire answers are input directly to a laptop, and self-completed paper questionnaires. The content of the interview and full documentation are provided in the accompanying technical report.

Adults (aged 16 and over) and children aged 13-15 completed the interview themselves. Parents of children aged 0-12 completed the interview on behalf of their child.

Those aged 13 and over were also asked to complete a short paper self-completion questionnaire on more sensitive topics during the interview. Parents of children aged 4-12 years selected for interview were also asked to fill in a self-completion booklet about the child's strengths and difficulties designed to detect behavioural, emotional and relationship difficulties.

Towards the end of the interview height and weight measurements were taken from those aged 2 and over.

In a sub-sample of households, interviewers sought permission from adults (aged 16 and over) to take part in an additional 'biological module'. The biological module was administered by specially trained

interviewers. In the module, participants were asked questions about prescribed medication and anxiety, depression, self-harm and suicide attempts. In addition, the interviewer also took participants' blood pressure readings and waist measurement, as well as samples of saliva and urine. Data from the biological module are reported every second year to allow two years of survey data to be combined. Data from the 2016 biological module combined with 2017 biological module data are included in this report. Further details of these samples and measurements are available both in the Glossary and in the accompanying technical report.

Survey response

In 2017, across all sample types, interviews were held in 3,062 households with 3,697 adults (aged 16 and over), and 1,603 children (aged 0-15). Of these, 938 adults completed the biological module. The number of participating households and adults in 2017 is listed in the table below. Further details on survey response in 2017 are presented in Chapter 1 of the technical report.

Main and Health Board boost samples	
Participating households	2,483
Eligible households responding	57%
Adult interviews	3,697
Eligible adults responding	50%
Adults eligible for biological module	1,449
Adults who completed biological module	938
Child boost sample	
Participating households	579
Eligible households responding	66%
Child interviews (child boost sample only)	885
Child interviews (main and child boost sample combined	1,603

Ethical Approval

Ethical approval for the 2017 survey was obtained from the REC for Wales committee (reference number 12/WA/0261).

DATA ANALYSIS

Weighting

Since addresses and individuals did not all have equal chances of selection, the data had to be weighted for analysis. SHeS comprises of a general population (main sample) and a boost sample of children screened from additional addresses. Therefore slightly different weighting strategies were required for the adult sample (aged 16 or older) and the child main and boost samples (aged 0-15). Additional weights have been created for the biological module and for use on combined datasets (described below). A detailed description of the weights is available in Chapter 1 of the technical report.

Weighted and unweighted data and bases in report tables

All data in the report are weighted. For each table in the report both weighted and unweighted bases are presented. Unweighted bases indicate the number of participants involved. Weighted bases indicate the relative sizes of sample elements after weighting has been applied.

Standard analysis variables

As in all previous SHeS reports, data for men, women, boys and girls are presented separately where possible. Many of the measures are also reported for the whole adult or child population. Survey variables are tabulated by age groups and in some cases also by Scottish Index of Multiple Deprivation (SIMD).

Statistical information

The SHeS 2017 used a clustered, stratified multi-stage sample design. In addition, weights were applied when obtaining survey estimates. One of the effects of using the complex design and weighting is the standard errors for the survey estimates are generally higher than the standard errors that would be derived from an unweighted simple random sample of the sample size. The calculations of standard errors shown in tables, and comment on statistical significance throughout the report, have taken the clustering, stratifications and weighting into account. Full details of the sample design and weighting are given in the technical report, Chapter 1.

Presentation of trend data

In this report trends based on the nine surveys from 2003 onwards are presented for all adults aged 16 and over. Prior to this the survey eligibility criteria was set at a maximum age of 64 in 1995 and then a maximum age of74 in 1998. Trends for children are based on the 2-15 years age group from 1998 onwards, and 0-15 years from 2003 onwards.

Presentation of results

Commentary in the report highlights differences that are statistically significant at the 95% confidence level. Statistical significance is not intended to imply substantive importance. A summary of findings is presented at the beginning of each chapter. Each chapter then includes a brief overview of the relevant policy area. These overviews should be considered alongside the higher level policies noted above and related policy initiatives covered in other chapters. A description of the methods and key definitions are also outlined in detail in each chapter. Tables showing the results discussed in the text are presented at the end of each chapter.

Availability of further data and analysis

As with surveys from previous years, a copy of the SHeS 2017 data will be deposited at the UK Data Archive along with copies of the combined datasets for 2015/2017, 2016/2017 and 2014/2015/2016/2017. In addition, trend tables showing data for key variables are available on the Scottish Government SHeS website along with a detailed set of web tables for 2017, providing analysis by age, area deprivation, socioeconomic classification, equivalised income and long-term condition for a large range of measures[11].

Comparability with other UK statistics

Guidance on the comparability of statistics across the UK is included in the introductory section of individual chapters.

CONTENT OF THIS REPORT

This volume contains chapters with substantive results from the SHeS 2017, and is one of two volumes based on the survey, published as a set as 'The Scottish Health Survey 2017':

Volume 1: Main Report

1. General Health, Long-Term Conditions and Cardiovascular Diseases
2. Mental Wellbeing
3. Dental Health and Services
4. Alcohol
5. Smoking
6. Diet
7. Physical Activity
8. Obesity
9. Gambling

Volume 2: Technical Report

Volume 2 includes a detailed description of the survey methods including: survey design and response; sampling and weighting procedures; and, information on laboratory analysis of urine and saliva samples.

Both volumes are available from the Scottish Government's SHeS website. A summary report of the key findings from the 2017 report and a set of web tables are also available on the survey website: www.gov.scot/scottishhealthsurvey.

References and notes

1   See: http://nationalperformance.gov.scot//

2   See: http://nationalperformance.gov.scot/

3   Delivering for Today, Investing for Tomorrow - The Government's Programme for Scotland
        2018-19. Edinburgh, Scottish Government. 2018.
        Available from: https://www.gov.scot/Publications/2018/09/6276

4   Dong W and Erens B. *The 1995 Scottish Health Survey.* Edinburgh: The Stationery Office. 1997

5   Shaw A, McMunn A and Field J. *The 1998 Scottish Health Survey.* Edinburgh: The Stationery
        Office. 2000

6   Bromley C, Sproston K and Shelton N [eds]. *The Scottish Health Survey 2003.* Edinburgh: The
        Scottish Executive. 2005

7   *Better Heart Disease and Stroke Care Action Plan.* Edinburgh, Scottish Government, 2009.
        www.gov.scot/Resource/Doc/277650/0083350.pdf

8   *Heart Disease Improvement Plan.* Edinburgh, Scottish Government. 2014.
        www.gov.scot/Publications/2014/08/5434

9   *Stroke Improvement Plan.* Edinburgh, Scottish Government. 2014.
        www.gov.scot/Publications/2014/08/9114

10   See: https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-
        events/general-publications/vital-events-reference-tables/2017/section-6-death-causes

11   See: www.gov.scot/scottishhealthsurvey

NOTES TO TABLES

1. The following conventions have been used in tables:
   n/a   no data collected
   -       no observations (zero value)
   0   non-zero values of less than 0.5% and thus rounded to zero
   [ ]   normally used to warn of small sample bases, if the unweighted base is less than 50. (If a group's unweighted base is less than 30, data are normally not shown for that group.)

2. Because of rounding, row or column percentages may not add exactly to 100%.

3. A percentage may be quoted in the text for a single category that aggregates two or more of the percentages shown in a table. The percentage for the single category may, because of rounding, differ by one percentage point from the sum of the percentages in the table.

4. Values for means, medians, percentiles and standard errors are shown to an appropriate number of decimal places. Standard Errors may sometimes be abbreviated to SE for space reasons.

5. 'Missing values' occur for several reasons, including refusal or inability to answer a particular question; refusal to co-operate in an entire section of the survey (such as a self-completion questionnaire); and cases where the question is not applicable to the participant. In general, missing values have been omitted from all tables and analyses.

6. The population sub-group to whom each table refers is stated at the upper left corner of the table.

7. Both weighted and unweighted sample bases are shown at the foot of each table. The weighted numbers reflect the relative size of each group in the population, not numbers of interviews conducted, which are shown by the unweighted bases.

8. The term 'significant' refers to statistical significance (at the 95% level) and is not intended to imply substantive importance.

9. Within the report Figures have generally been produced using data rounded to the nearest whole number. There are a small number of Figures which show data to the nearest decimal place in order to aid interpretation.

Chapter 1

General Health, Long-Term Conditions and Cardiovascular Diseases

SUMMARY
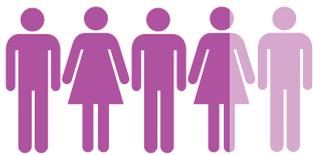
73% of adults described their health as 'good' or 'very good'

93% of girls reported 'good' or 'very good' health, a decrease from 96% in 2016

94% of boys reported 'good' or 'very good' health, with little change from previous years

- In 2017, the proportion of adults reporting being in 'good' or 'very good' health decreased with age from 86% of those aged 16-24 to 52% of those aged 75 and over.
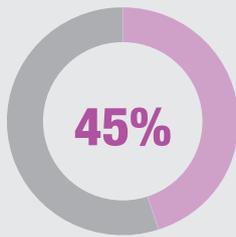
45% of adults have a long term condition.

More men than women had no long-term conditions:

57% of men

53% of women

Prevalence of limiting long-term conditions was highest for those aged 75 and over and lowest for those aged 0-15

10% of 0-15

56% of 75 and over

- In 2016/2017, 30% of adults had hypertension.

17% of children aged 0-15 have a long-term condition

54% of adults have attended CPR training

20% of adults had either initial training or refresher training in the last 2 years

- Those living in less deprived areas were more likely to have attended CPR training than those in more deprived areas.
- Attendance levels were higher among those living in the three least deprived areas (57-60%) than among those in the 2nd most deprived and most deprived areas (50% and 46% respectively).

Most common types of CPR training for adults:

42% compulsory part of work

23% choosing to do so as part of work

- In 2017, the most common reason for attending CPR training among those aged 16-24 was that it was part of their school/college/university work (43%).

Prevalence of cardiovascular conditions, diabetes, IHD and strokes continued to be higher in more deprived areas

Least deprived quintile
2%
4%
12%

Most deprived quintile
5%
11%
22%

■ Stroke ☐ Diabetes ■ Any Cardiovascular Condition
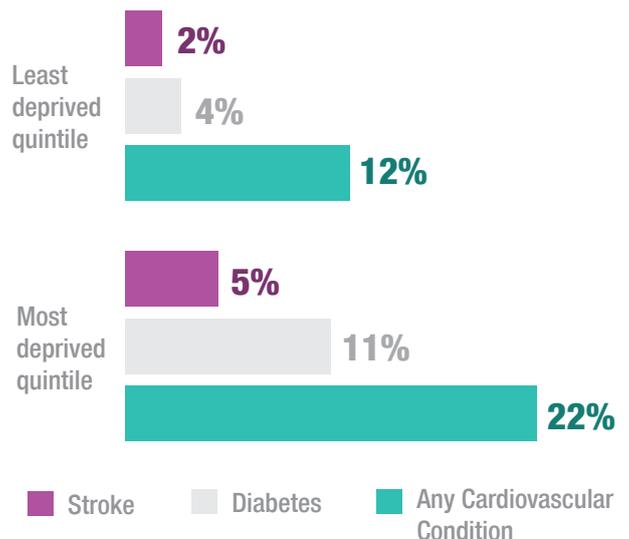
- In 2017 15% of adults had any CVD, 6% had doctor diagnosed diabetes, 19% had any CVD or diabetes, 5% had IHD, 3% had had a stroke and 7% had had a stroke or IHD, with no significant change since 2016.

1 GENERAL HEALTH, LONG-TERM CONDITIONS AND CARDIOVASCULAR CONDITIONS

Qingyang Feng

1.1 INTRODUCTION

This chapter covers the following interrelated topics: self-assessed general health, long-term conditions, cardiovascular disease and Cardiopulmonary Resuscitation (CPR) training.

Population measures of self-reported health can be a general indicator of the burden of disease on society. They can reflect subjective experiences of both diagnosed and undiagnosed illnesses, and their severity, which more objective measures for the whole population can sometimes overlook.

Self-assessed general health is often a reflection of the presence or absence of long-term conditions, both physical and mental. In Scotland today people are living longer but with multiple long-term conditions and increasingly complex needs[1]. Such conditions account for 80% of all GP consultations and for 60% of all deaths in Scotland[2]. People with a long-term condition are twice as likely as those without to be admitted to hospital and stay in hospital disproportionately longer[3]. Older people are more likely to have long-term conditions and often multiple conditions. The proportion of the Scottish population aged 75 and over is projected to increase by 27% over the next ten years and by 79%, over the next 25 years[4]. Given Scotland's ageing population, long-term and multiple conditions have become an increasingly important public health issue.

Cardiovascular disease (CVD) is a general term describing diseases of the heart and blood vessels whereby blood flow to the heart, brain or body is restricted. It is one of the leading contributors to the global disease burden[5]. Its main components are ischaemic heart disease (IHD, or coronary heart disease) and stroke, both of which have been identified as clinical priorities for the NHS in Scotland[6, 7] Diseases of the circulatory system are the second most common cause of death in Scotland after cancer, accounting for 26% of deaths in 2017 (compared with 29% for cancer). This includes 12% of deaths which are caused by IHD, with a further 7% caused by cerebrovascular disease (e.g. stroke)[8]. Early mortality from heart disease and stroke have both improved in recent years, but concern remains about continuing inequalities in relation to morbidity and mortality linked to these conditions[2,3].

Diabetes, the most common metabolic disorder, is a major health issue for Scotland; its prevalence having increased in recent years for a number of reasons including an ageing population, better survival rates, better detection rates for Type 2 diabetes and a steady increase in the incidence of Type 1 diabetes in Scottish children[9]. The UK has one of the highest levels of Type 1 diabetes in Europe, but it is the increasing prevalence of Type 2 diabetes – linked to obesity, physical inactivity and ageing – which is driving the overall increase in the condition and causing concern[10]. Diabetes is a risk factor in premature mortality, although more effective treatments for diabetes have offset some of the excess risk in recent years and mean some people may be living longer and better with the condition[7].

The associations of CVD conditions, diabetes and other long-term conditions with deprivation, lifestyle risk factors and wider health determinants are also of importance in Scotland given its persistent health inequalities.[11,12].

The prevalence of CVD, diabetes and other long term conditions therefore represents significant personal, social and economic costs both to individuals and their families as well as to health and care services and Scottish society more widely.

Cardiac arrest is when the heart suddenly stops pumping blood round the body. Cardiopulmonary Resuscitation (CPR) keeps blood circulating until attempts are made to restart the heart when someone has a cardiac arrest. Every year around 3,000 Scottish people have a cardiac arrest in the community and currently only 1 in 20 survive[13]. In areas of the world with the best survival rates almost a quarter people go home alive after cardiac arrest[14]. Prompt bystander CPR can increase the likelihood of survival by 2 or 3 times[15].

1.1.1   Policy background

The Scottish Government recognises the need to change the way services are delivered in the context of the changing Scottish demographic, notably the ageing population and the increasing number of people living with long term conditions and multi-morbidity. The strategic focus for improving general health and wellbeing and supporting people living with long term conditions is set-out in three over-arching strategies.

The National Clinical Strategy[16], published in 2016, is the high level vision for how health and social care services will develop over the next 10-15 years. **The Health and Social Care Delivery Plan**[17] sets out the programme to further enhance health and social care services so people can live longer, healthier lives at home or in a homely setting. These establish the overarching aims for public health concerned with prevention, early intervention and supported self-management. In **Realising Realistic Medicine**[18], published in 2017, the Government sets out plans to adopt Realistic Medicine, moving away from a culture where 'doctor knows best' to one where people receiving care are at the centre of decision-making and professionals are encouraged to take a personalised approach to their care. It aims to reduce harm and waste, tackle unwarranted variation in care, manage clinical risk, and support innovation to improve care and sustainability in the NHS.

One of the Scottish Government's new key **National Performance Framework National Outcomes** is that 'we are healthy and active[19]. This is supported by a number of National Indicators. There is a National Performance indicator for premature mortality (deaths from all causes in those aged under 75)[19]. CVD is described as one of the key 'big killer' diseases around which action must be taken if this target is to be met. In addition, a number of the National Indicators are linked to CVD risk factors, most notably smoking, but also physical activity and healthy weight[19] (the latter two are also major risk factors for Type 2 diabetes). Due to the clinical priority given to heart disease and stroke

by the Scottish Government, there has been some success in reducing death rates from these diseases in recent years[20].

The separate **Heart Disease**[21], **Stroke**[22], **Error! Bookmark not defined.** and **Diabetes**[23] **Improvement Plans,** published in 2014, align with the approaches set out in the Scottish Government's first overarching strategy for long-term conditions published in 2009. They reaffirm the aims and priorities on improved prevention, treatment and care in heart disease, stroke and diabetes, focusing on clinical outcomes and patient experience. Diabetes is known to increase the risk of CVD and the **Diabetes Improvement Plan**[23] focusses priority action to improve glycaemic control to reduce risk of associated complications and additionally to identify risk of complications early ensuring prompt treatment.

In March 2015, Scotland's Out-of-Hospital Cardiac Arrest (OHCA) Strategy was launched[24]. Its overarching aim is for Scotland to become an international leader in OHCA outcomes by 2020. This is underpinned by two high level aims:

- To increase survival rates after an OHCA to save 1,000 additional lives by 2020.
- To equip an additional 500,000 people in Scotland with CPR skills by 2020.

1.1.2 Reporting on general health, long-term conditions, CVD conditions and diabetes in the Scottish Health Survey

Valuable information on self-reported general health, prevalence of CVD conditions and diabetes in Scotland is provided by SHeS. This chapter reports on self-assessed general health and prevalence of long-term conditions by age and sex for adults and children in 2017. It also updates the trends in self-reported health and long-term conditions.

The Scottish Health Survey provides useful information on the prevalence of cardiovascular conditions across different population groups. In this chapter, trends in self-reported CVD conditions and diabetes prevalence by deprivation for adults are presented between 2003 and 2017. Self-reported CVD conditions and diabetes are also reported for 2017 by age and sex. Trends in adult hypertension are updated for 2017 and trends in adult hypertension by deprivation are presented. Additionally, the extent of diagnosis, treatment and control of hypertension are also explored. The prevalence of CPR training and training type for adults are explored by age, sex and deprivation.

The area deprivation data are presented in Scottish Index of Multiple Deprivation (SIMD) quintiles. To ensure that the comparisons presented are not confounded by the different age profiles of the quintiles, the data have been age-standardised. Readers should refer to the Glossary at the end of this Volume for a detailed description of both SIMD and age-standardisation.

Supplementary tables on general health and CVD are also published on the Scottish Health Survey website[25].

1.2 METHODS AND DEFINITIONS

1.2.1 Methods

Self-assessed general health

Each year, participants who are aged 13 and over, are asked to rate their health in general, with answer options ranging from 'very good' to 'very bad'. For children under the age of 13 the question is answered by the parent or guardian completing the interview on their behalf. The data for children (aged 0-15) is used in the calculation of healthy life expectancy used to monitor the related National Performance Framework indicator to improve healthy life expectancy.

Long-term conditions

All participants were asked if they had any physical or mental health condition or illness lasting - or likely to last - for twelve months or more. Those who reported having such a condition were asked to provide details of the type(s) of conditions or illnesses reported. Answers were recorded verbatim and then coded by an analyst. These questions did not specify that conditions had to be doctor-diagnosed; responses were thus based on individuals' perceptions.

At a later stage of the interview, participants were asked about a number of specific health conditions, including diabetes and hypertension. If the participant mentioned that they had doctor-diagnosed diabetes or that they had doctor-diagnosed hypertension in response to these questions, but they had not mentioned them as a long-term condition, they were each counted as such a condition.

CVD conditions and diabetes

Participants were asked whether they had ever suffered from any of the following conditions: diabetes, angina, heart attack, stroke, heart murmur, irregular heart rhythm, or 'other heart trouble'. If they responded affirmatively to any of these conditions, participants were asked whether they had ever been told they had the condition by a doctor and whether they had experienced the conditions in the previous 12 months. For the purposes of the analysis presented in this chapter, participants were only classified as having a particular condition if they reported that the diagnosis had been confirmed by a doctor.

It is important to note that no attempt was made to verify these self-reported diagnoses objectively. It is therefore possible that some misclassification may have occurred because some participants may not have remembered (or not remembered correctly, or not known about) diagnoses made by their doctor.

Blood pressure

Blood pressure was measured as part of the biological module[26], using the Omron HEM device. This equipment has been used on SHeS since 2003. Prior to 2012, blood pressure was collected in a follow-up interview conducted by survey nurses. The nurse interview was discontinued in 2012, and since then specially trained interviewers have been collecting some of the less complex measures and samples previously collected by nurses, as part of the biological module. The equipment and protocol for taking blood pressure readings did not change. A validation study was carried out to assess the impact of the switch from nurse to interviewer administration[27].

As a result, unadjusted measurements collected by interviewers are used within the report for more recent periods (2012/2013, 2014/2015 and 2016/2017), with calibrated estimates (nurse equivalent) being used to show longer-term trends.

Three blood pressure readings were taken from consenting participants at one minute intervals using an appropriately sized cuff and on the right arm where possible. Participants were in a seated position and readings were taken after a five minute rest. Systolic and diastolic pressures and pulse measurements were displayed on the Omron for each measure. As in previous years, pregnant participants were excluded.

Since the size of the cuff used when taking blood pressure readings is an important factor in ensuring that accurate measurements are obtained three different sizes of cuff were available for use. Full details of the protocol used to take blood pressure reading in the survey are available on request from ScotCen.

The blood pressure measures used in this chapter are the means of the second and third measurements obtained for those for whom three readings were successfully obtained. Analyses exclude results from participants who had eaten, drunk alcohol, smoked or exercised in the 30 minutes before the measurement was taken.

CPR training

Participants were asked whether they had ever had any type of training in CPR or learned CPR either through instructor led sessions or self-instruction using DVD/online instruction. Those who reported they had CPR training were asked to provide details of the time interval since the first training, whether they had attended refresher training and the type of CPR training.

1.2.2 Definitions

Any CVD condition

Participants were classified as having 'any CVD' if they reported ever having any of the following conditions confirmed by a doctor: angina,

heart attack, stroke, heart murmur, abnormal heart rhythm, or 'other heart trouble'[28].

Diabetes

Participants were classified as having diabetes if they reported a confirmed doctor diagnosis. Women whose diabetes occurred only during pregnancy were excluded from the classification. No distinction was made between Type 1 and Type 2 diabetes in the interview.

Any CVD condition or diabetes

A summary measure of the above conditions is presented in the tables as 'any CVD condition or diabetes'.

Ischaemic heart disease (IHD)

Participants were classified as having IHD if they reported ever having angina or a heart attack confirmed by a doctor. All tables refer to **ever** having had the condition.

Stroke

Participants were classified as having a stroke if they reported **ever** having had a stroke confirmed by a doctor.

IHD or stroke

A summary measure of the above conditions is presented in the tables as 'IHD or stroke'.

Blood pressure levels classification

In accordance with guidelines on hypertension management[29] the threshold of 140/90mmHg is used to define hypertension in SHeS. Adult participants were classified into one of four groups listed below on the basis of their systolic (SBP) and diastolic (DBP) readings and their current use of anti-hypertensive medications. For the purpose of this report, the term 'hypertensive' is applied to those in the last three categories.

Normotensive untreated	SBP below 140mmHg and DBP below 90mmHg, not currently taking medication specifically prescribed to treat high blood pressure
Hypertensive controlled	SBP below 140mmHg and DBP below 90mmHg, currently taking medication specifically prescribed to treat high their blood pressure
Hypertensive uncontrolled	SBP at least 140mmHg or DBP at least 90mmHg, currently taking medication specifically prescribed to treat their high blood pressure
Hypertensive untreated	SBP at least 140mmHg or DBP at least 90mmHg, not currently taking a drug specifically prescribed to treat their high blood pressure

Detection, treatment and control of hypertension

In addition to the objective definition of hypertension described above, participants were defined as having self-reported doctor-diagnosed hypertension if they stated during the interview that they had been told by a doctor or nurse that they had high blood pressure.

Hypertension detection was estimated by examining the proportion of those with survey defined hypertension (SBP at least 140mmHg or DBP at least 90 mmHg or on treatment for hypertension) reporting doctor-diagnosed hypertension. Treatment rates were estimated by examining the proportion of all those defined as having survey-defined hypertension who were on treatment at the time of the survey. The control of hypertension among those on treatment for hypertension at the time of the survey was estimated by calculating the proportion with blood pressure below 140/90mmHg.

When interpreting results it should be borne in mind that although three blood pressure readings were taken, these were all on a single occasion. Clinical diagnoses of hypertension are based on sustained levels of high blood pressure rather than a single measurement.

1.3 SELF-ASSESSED GENERAL HEALTH

1.3.1 Trends in self-assessed general health since 2008

From a peak of 77% in 2009, the level of self-assessed 'good' or 'very good' health for adults dropped significantly to 74% in 2012 and has continued to be within the range of 73-74% since (73% in 2017). The level of self-assessed 'bad' or 'very bad' health fluctuated between 7% and 9% since 2008 (8% in 2017). Patterns were similar for men and women.

The overall proportions of children reporting 'good' or 'very good' health since 2008 had varied between 94% and 96%, remaining stable at 94% in 2017. Similarly, the proportion of children reporting 'bad' or 'very bad' health continued to be low (1%), consistent with the levels since 2008 (0-1%). The proportion of girls reporting 'good' or 'very good' health decreased significantly from 96% in 2016 to 93% in 2017, while the proportion of girls reporting 'bad' or 'very bad' health remained unchanged at 1%. Boys have had consistent levels of self-assessed general health since 2008.   **Table 1.1**

1.3.2 Self-assessed general health among adults in 2017, by age and sex

In 2017, nearly three quarters (73%) of adults aged 16 and over described their general health as 'good' or 'very good'; meanwhile, one in twelve (8%) adults reported having 'bad' or 'very bad' health. Men and women's self-assessed general health did not differ significantly.

Consistent with previous SHeS reports[30], self-assessed general health was significantly associated with age among adults in 2017. The proportion of adults self-assessing their health as 'good' or 'very good' decreased with age from 86% among those aged 16-24 to 52% among those aged 75 and over. Correspondingly, the proportion of self-assessed 'bad' or 'very bad' health increased significantly from 2% among the youngest age group (16-24) to 15% among the oldest age group (75 and over). Similar patterns were found for men and women.

Figure 1A, Table 1.2

Figure 1A
Percentage of adults (aged 16 and over) with 'good' or 'very good' self-reported general health, 2017, by age and sex

■ Men
■ Women
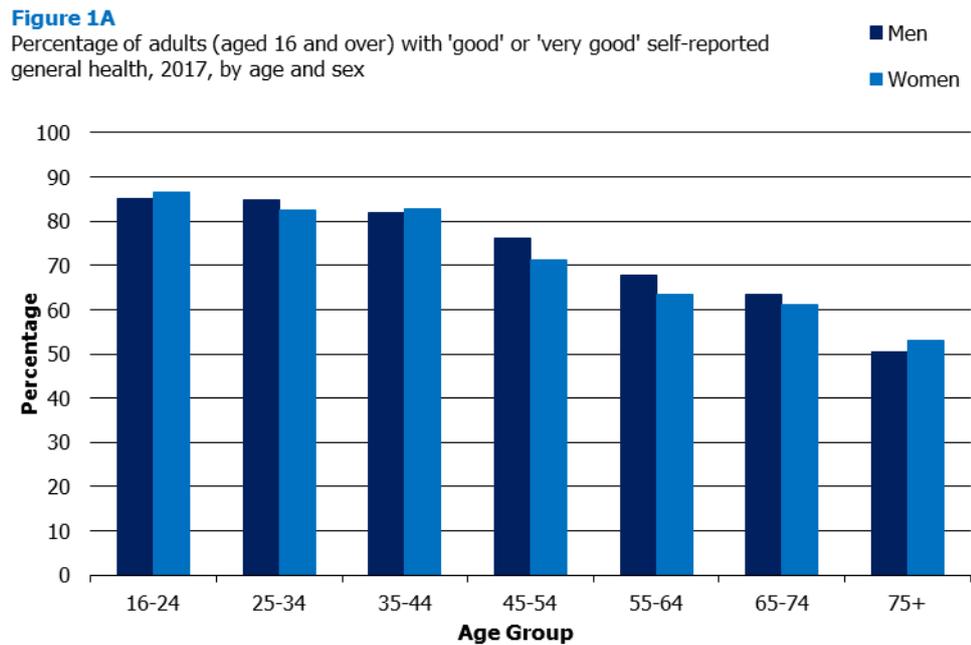
1.4 LONG-TERM CONDITIONS

1.4.1 Trends in long-term conditions since 2008

The proportion of adults aged 16 and over reporting long-term conditions increased significantly between 2008 and 2012 from 41% to 46%; the level has remained stable since then (44-47%). The proportion of adults reporting limiting long-term conditions followed the same trend as the overall prevalence of long-term conditions (23% in 2008 and 28% in 2012 for men; 28% in 2008 and 35% in 2012 for women), and remained stable thereafter.

The proportion of children with long-term conditions increased significantly between 2008 (14%) and 2014 (19%). After the peak in 2014, the level significantly decreased to 15% in 2015 and has remained stable since then (15%-17%). The proportion of girls reporting limiting long-term conditions increased significantly from 6% in 2016 to 10% in 2017.

Figure 1B, Table 1.3

Figure 1B
Pecentage of children (aged 0 to 15) with limiting and non-limiting long-term conditions, 2008 to 2017

Boys
Girls
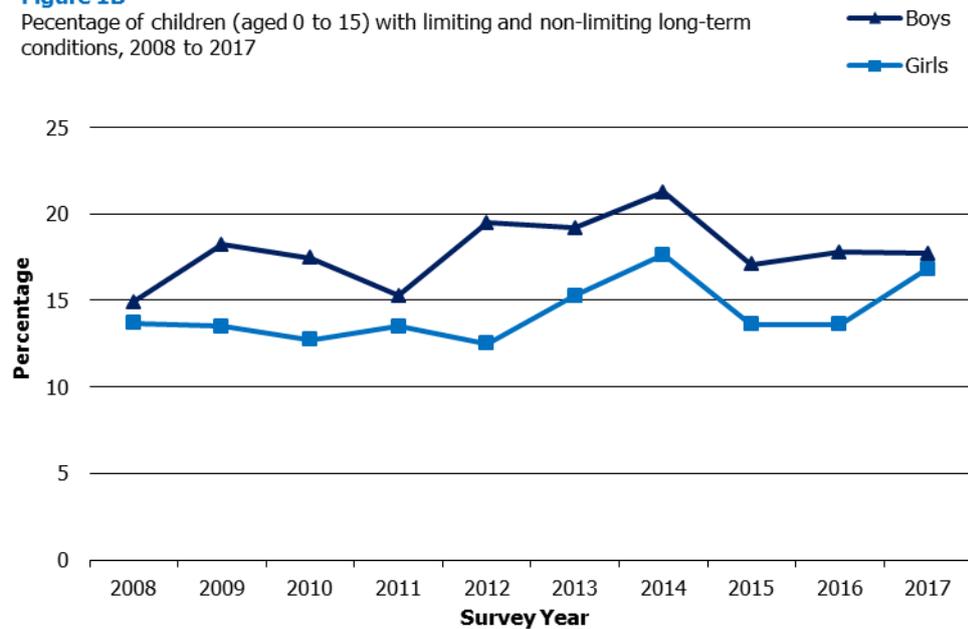
1.4.2 Prevalence of long-term conditions in 2017, by age and sex

In 2017, the long-term condition prevalence was 45% among all adults aged 16 and over and 17% among children aged 0-15. Around a third (32%) of adults reported living with limiting long-term conditions whereas 13% reported living with non-limiting long-term conditions. The proportions of children that reported living with limiting and non-limiting conditions were 10% and 7% respectively.

The proportion of men (57%) free of long-term conditions in 2017 was significantly higher than women (53%). This is attributable to the significantly higher prevalence of limiting long-term conditions among women (34%) than men (29%), especially among those aged 35-44 (17% among men and 24% among women) and 45-54 (23% among men and 33% among women). In contrast with findings from previous SHeS reports where prevalence has generally been higher for boys[31], the prevalence of long-term conditions did not vary significantly between boys and girls in 2017 (both 17%).

The prevalence of long-term conditions for adults in 2017 varied significantly by age. Older adults were more likely than younger adults to report non-limiting long-term conditions (between 7% and 10% among those aged under 45 compared with between 16% and 20% among those aged 45 and over). Similarly, the prevalence of limiting conditions was 17-28% for those aged 16-54 and 40-56% for those aged 55 and over.

Distinct from previous SHeS reports[32], in 2017 the 16-24 age group (26%) had significantly higher prevalence of limiting long-term conditions than those aged 25-34 (17.2%). **Figure 1C, Table 1.4**

Prevalence of long-term conditions in children (aged 0-15) and
adults (aged 16 and over), 2017, by age

Non-limiting long-term conditions
Limiting long-term conditions
No long-term conditions
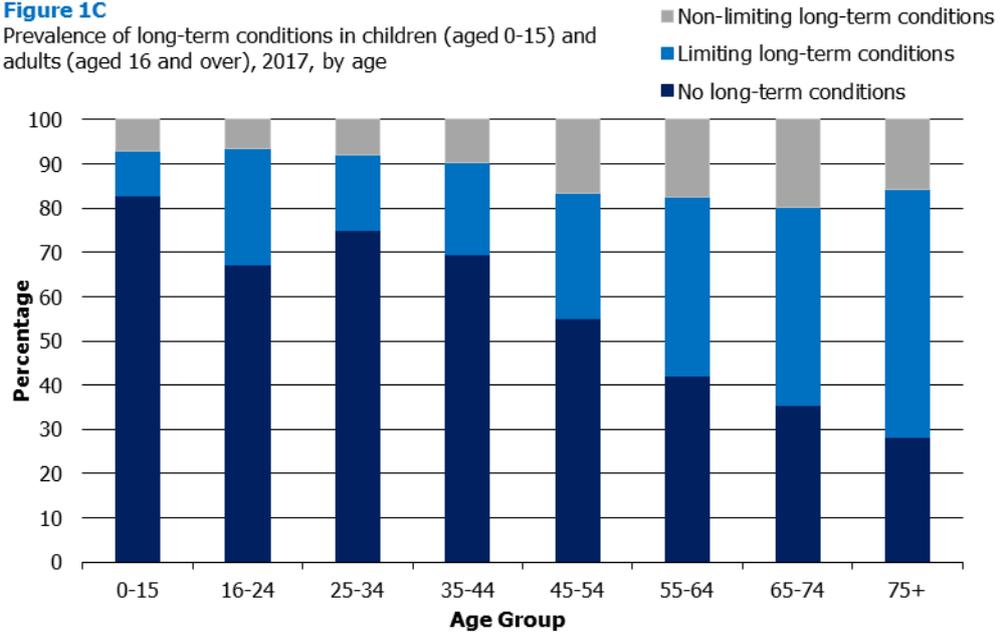
1.5 CARDIOVASCULAR CONDITIONS AND DIABETES

1.5.1 CVD and diabetes, 2017, by age and sex

Any CVD

In 2017, 15% of all adults (16% of men and 15% of women) reported
having a CVD condition.

In 2017 the prevalence of CVD conditions was significantly associated
with age with stepped increases across the age groups from 5% among
those aged 16-24 to 43% among those aged 75 and over.

Doctor-diagnosed diabetes

The prevalence of adults reporting doctor-diagnosed diabetes was 6%
in 2017 (7% for men and 6% for women). Prevalence increased
markedly with age from 1% of those aged 16-34 to 16% of those aged
75 and over.

Any CVD or diabetes

In 2017, around one in five adults (19%; 21% of men and 18% of
women) reported having CVD conditions or doctor-diagnosed diabetes.
The prevalence increased significantly with age (with 51% of those
aged 75 and over reporting CVD conditions or diabetes compared with
5% of those aged 16-24).

Among those aged 55 and over, a significantly higher proportion of men
reported CVD conditions or doctor-diagnosed diabetes than women
(29-57% for men compared with 22-48% for women).

23

IHD

In 2017, the overall proportion of adults reporting an IHD diagnosis was 5% (6% for men and 4% for women). The prevalence of IHD diagnosis increased significantly with age from none or a negligible proportion of adults aged 16-44 to 3% of adults aged 45-54 and then increased steadily with age to 21% of adults aged 75 and over.

Among the 45-64 and 75 and over age groups, the proportion of men reporting IHD diagnosis was significantly higher than women (5-9% compared to 1-4% respectively for those aged 45-64 and 27% compared to 16% respectively for those aged 75 and over). Although prevalence was also higher for men than women among those aged 65-74, the difference was not significant.

Stroke

The stroke prevalence was 3% for both men and women in 2017. The prevalence of stroke was significantly associated with age, with less than 1% prevalence among adults aged 16-34 compared with 9% among adults aged 75 and over.

The only significant difference in prevalence by age between men and women was among those aged 45-54; in this age group men were more likely than women to report having had a stroke (4% of men compared to 1% of women).

IHD or stroke

The combined prevalence of IHD or stroke diagnosis for all adults was 7% in 2017. Prevalence increased steadily with age from less than 1% of adults aged 16-34 to 27% of adults aged 75 and over.

The overall prevalence of IHD or stroke among women (6%) was significantly lower than among men (9%). Among the 45-64 and 75 and over age groups, the proportion of men reporting IHD diagnosis or stroke was significantly higher than women (7-13% compared to 2-8% respectively for those aged 45-64 and 33% compared to 23% respectively for those aged 75 and over). Although prevalence was also higher for men than women among those aged 65-74, the difference was not significant. **Table 1.5**

1.5.2 Trends in CVD and diabetes prevalence (age-standardised) since 2003, by area deprivation

Any CVD

In 2017, the highest age-standardised prevalence of adults reporting CVD was among those living in the most deprived areas (22% compared with 12% in the most deprived areas. This was similar for both men (25% compared with 12% respectively) and women (20% compared with 12% respectively); this has generally been the pattern since 2003.

The extent of inequalities in CVD prevalence by area deprivation has varied since 2003 but with no clear pattern; the gap in prevalence between the most and least deprived areas was lowest in 2008 and 2010 at 5 percentage points and highest in 2017 at 10 percentage points.

Doctor-diagnosed diabetes

The age-standardised prevalence of doctor-diagnosed diabetes varied significantly by deprivation quintile in 2017. Almost three times more adults in the most deprived quintile reported doctor-diagnosed diabetes than those in the least deprived quintile (11% compared with 4%). This pattern has been consistent since 2003. Similar patterns were found for both men and women.

The gap in prevalence for all adults between the most and least deprived quintiles was larger in 2017 (7 percentage points) than in previous survey years (3-5 percentage points).

IHD

The age-standardised prevalence of IHD was significantly associated with area deprivation. In 2017, three times as many adults reported IHD in the most deprived quintile than in the least deprived quintile (9% compared 3%). A similar pattern was found for men (10% compared to 5%) and for women (8% compared to 1%). This pattern has been consistent across previous survey years.

The gap in prevalence for all adults between the most and least deprived quintile was highest in 2003 and 2014 at 7 percentage points (6 percentage points in 2017).

Stroke

Similar to other cardiovascular conditions, the highest age-standardised prevalence of stroke was among adults living in the most deprived area quintile for all survey years since 2003. In 2017, the proportion of adults reporting stroke in the most deprived quintile (5%) was more than twice the proportion as those in the least deprived quintile (2%).

The gap in prevalence between the most and least deprived areas has fluctuated between 1 and 4 percentage points since 2003 (3% in 2017).

Figure 1D, Table 1.6

Figure 1D
Prevalence of doctor-diagnosed diabetes, IHD and stroke in adults (aged 16 and over), 2017, by area deprivation

Legend: Any CVD, Doctor-diagnosed diabetes, IHD, Stroke
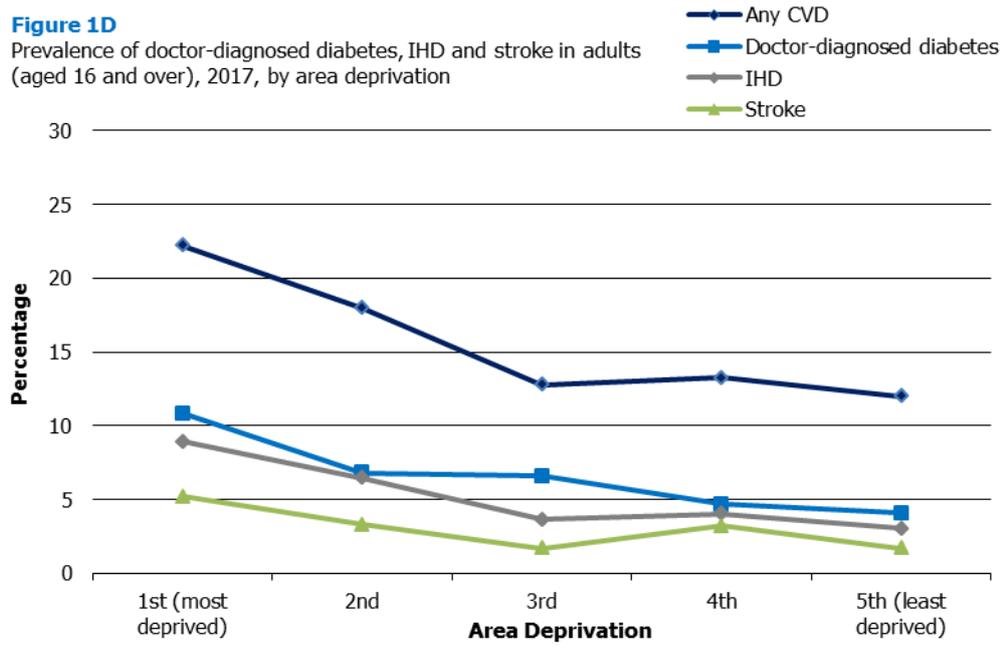
1.5.3 Trends in blood pressure level since 2003

To increase the sample size available the detailed analysis of blood pressure trends since 2003 used sets of two-years of combined data from 2008/2009.

Using the nurse-equivalent calibrated estimates, the combined data from 2016 and 2017 show that 30% of adults aged 16 and over had hypertension. As shown in Figure 1E, the nurse-equivalent calibrated estimates for all adults remained at a similar level to that in 2012/2013 (28%) following a significant decrease from 33% in 2010/2011. Similar patterns were found for men and women.   **Figure 1E, Table 1.7**

Figure 1E
Proportion of adults (aged 16 and over) with nurse-equivalent calibrated hypertension, 2003 to 2016/2017 combined

Legend: Men, Women, All adults
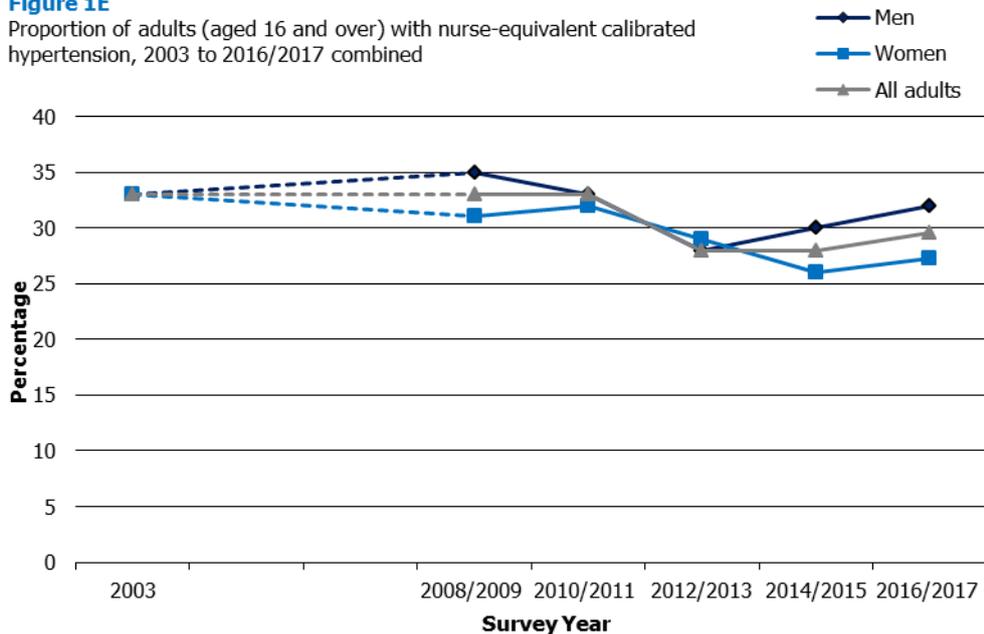
1.5.4 Trends in blood pressure level (age-standardised) since 2003, by area deprivation

Over the trend period significant differences among deprivation quintiles were only observed during 2010/2011 and 2016/2017. In 2010/2011, the highest age-standardised prevalence of hypertension was 40% among adults in the most deprived quintile, with prevalence ranging between 28-37% among the other quintiles. In 2016/2017, the age-standardised prevalence of hypertension in the two least deprived quintiles (23-24%) was around 10 percentage points lower than that of the other quintiles (32-34%). Patterns were similar for men and women.

Table 1.8

1.5.5 Detection and treatment of hypertension among adults in 2014-2017 (combined), by age and sex

The hypertension detection rate in Table 1.9 shows the proportion of adults aged 16 and over with survey-defined hypertension who also reported doctor-diagnosed hypertension. In 2014-2017 combined, the hypertension detection level among all adults with survey-defined hypertension was 59%. Women had a significantly higher hypertension detection level (62%) than men (55%). The hypertension detection level increased significantly by age group, from 20% among people aged 16-24 to 71% among people age 75 and over. A similar pattern was found for men and women.

In 2014-2017 combined, 27% of adults with survey-defined hypertension had normal blood pressure under medication (hypertension treated and controlled), while 21% of adults with survey-defined hypertension were still having high blood pressure readings under medication (hypertension treated, but not controlled). The hypertension treatment level did not differ significantly between men and women, but it did vary significantly by age. The proportion of adults having high blood pressure readings under medication was significantly higher among the older age group (27-28% among those aged 65 and over) than that among the younger age group (10-19% among those aged 25-64).

Table 1.9

1.6 CPR Training

1.6.1 CPR training history among adults in 2017, by age and sex

In 2017, more than half of adults (54%) reported having ever attended CPR training with no significant difference between men and women. The proportion of adults attending CPR training varied significantly by age with the highest among those aged 16-54 (60%-62%) and the lowest among those aged 75 and over (23%).

Among those that had ever had CPR training, the majority (69%) had their original training 5 years ago or more. The proportions of

attendance within the past 12 months were patterned by age, decreasing from 16% among adults aged 16-24, to 4% for those aged 65-74 and none of the adults that took part in the survey aged 75 and over.

Overall, 40% of those who had ever attended CPR training also reported attending refresher training. The proportion of adults that had attended refresher training varied by age (42-48% among those aged 25-64 compared to 33% of those aged 16-24, 23% of those aged 65-74 and 14% of those aged 75 and over (see Figure 1F).

Among adults who had any CPR training (original or refresher), more than a third (36%) had the training within the past two years with younger adults more likely to do so than older adults (37-50% for those aged 16-54 compared with 6-29% for those aged 55 and over). The youngest age group had the highest proportion (50%) of any CPR training within the past two years; the oldest group had the lowest (6%).

In 2017, a fifth (20%) of *all* adults reported attending any CPR training (original or refresher) within the past two years; the highest level was among the youngest age group (30%) and the lowest was among the oldest group (1%).   **Figure 1F, Table 1.10**

Figure 1F
Percentage of adults (aged 16 and over) that have ever had CPR training, 2017, by age and sex
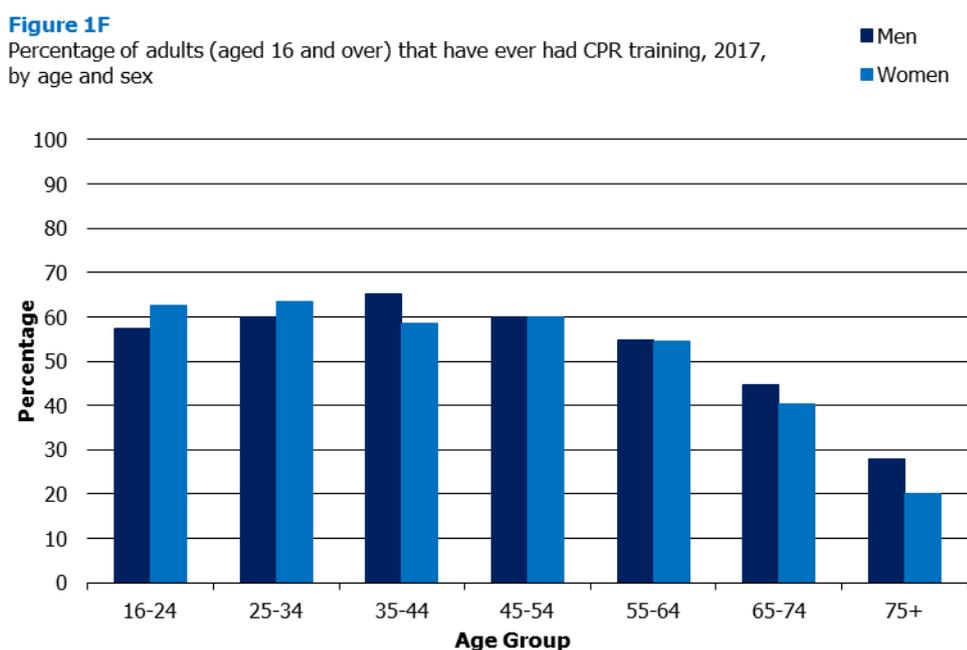
1.6.2   CPR training history among adults in 2017 (age-standardised), by area deprivation

In 2017, the prevalence of ever attending CPR training was significantly associated with area deprivation. The attendance level was higher among those living in the three least deprived areas (57-60%) than among those in the 2nd most deprived and most deprived areas (50% and 46% respectively). The pattern by deprivation was similar for men and women.

The length of time since original CPR training or attendance at refresher training did not differ significantly by area deprivation in 2017.

Table 1.11

1.6.3 Type of CPR training last attended among adults in 2017, by age and sex

In 2017, of the adults who had ever attended CPR training, the most common type of training was as a compulsory part of their work (42%) or they had opted to take the training as part of work (23%). For 7%, CPR training was compulsory as part of voluntary work or a hobby and 9% opted to take it as part of voluntary work or a hobby. CPR training was taken by 12% of adults whilst they were a student as part of school / college / university work and 3% did so because they were a parent or carer. Only 1% of those that had attended CPR training taught themselves from a book, the internet or another self-learning tool.

Adults in the youngest age group were more likely than those in other age groups to undertake CPR training as part of their school/college or university work (43% among those aged 16-24 compared with 1-18% of other age groups). Those in the 16-24 age group and those aged 65 and over were more likely than other age groups to undertake CPR training as an option as part of their voluntary work or hobby (15%, 12% and 11% respectively compared with 5-9% for other age groups). Those aged 16-24 were less likely than those in older age groups to have attended CPR training as a compulsory part of their work (16% among those aged 16-24 compared to 43-51% among those aged 25 and over), they were also less likely than older age groups to have opted to do CPR training as part of their work (9% compared to 21-32% among those aged 25 and over). CPR training taken primarily on the basis of being a parent or carer was more common among women (4%) than men (1%).

Table 1.12

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[26] For a detailed description of the biological module see Volume 2 of this report

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Table list

Table 1.1 Self-assessed general health, adults and children, 2008 to 2017

Self-assessed general health	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%
Men										
Very good	37	37	35	37	36	34	32	34	30	34
Good	39	40	41	41	39	41	42	40	43	41
Fair	16	16	17	16	17	17	18	18	19	18
Bad	6	6	5	5	6	6	6	6	6	5
Very Bad	2	1	2	2	2	2	2	2	2	2
Very good / good	*76*	*77*	*76*	*77*	*75*	*75*	*74*	*74*	*74*	*75*
Bad / very bad	*7*	*7*	*7*	*7*	*8*	*8*	*8*	*8*	*8*	*8*
Women										
Very good	35	36	35	36	32	34	33	35	32	34
Good	40	41	39	39	41	40	41	40	41	38
Fair	19	17	18	18	18	18	18	18	18	19
Bad	5	6	6	6	7	7	6	6	7	6
Very Bad	2	1	2	2	2	2	2	2	3	3
Very good / good	*75*	*77*	*74*	*74*	*73*	*74*	*74*	*74*	*73*	*72*
Bad / very bad	*7*	*7*	*8*	*8*	*9*	*9*	*8*	*8*	*9*	*9*
All adults										
Very good	36	36	35	36	34	34	32	34	31	34
Good	39	40	40	40	40	40	41	40	42	39
Fair	17	16	18	17	17	17	18	18	18	18
Bad	5	6	6	6	7	6	6	6	6	6
Very Bad	2	1	2	2	2	2	2	2	2	3
Very good / good	*75*	*77*	*75*	*76*	*74*	*74*	*74*	*74*	*73*	*73*
Bad / very bad	*7*	*7*	*7*	*7*	*9*	*8*	*8*	*8*	*9*	*8*

Continued…

Table 1.1 - *Continued*

Self-assessed general health	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%
Boys										
Very good	68	69	65	69	65	68	65	66	65	67
Good	26	27	29	27	29	26	30	28	30	28
Fair	5	4	5	4	6	5	5	6	4	5
Bad	1	0	1	0	0	1	0	1	1	1
Very Bad	0	0	0	-	0	0	0	-	0	0
Very good / good	*94*	*96*	*94*	*96*	*94*	*94*	*95*	*94*	*95*	*94*
Bad / very bad	*1*	*0*	*1*	*0*	*0*	*1*	*1*	*1*	*1*	*1*
Girls										
Very good	65	68	65	70	70	64	65	70	69	67
Good	31	27	29	26	25	30	30	28	27	26
Fair	4	4	4	3	5	4	4	2	3	5
Bad	1	1	1	1	1	1	1	1	1	1
Very Bad	0	-	0	0	-	-	-	-	0	-
Very good / good	*96*	*95*	*95*	*96*	*95*	*95*	*95*	*98*	*96*	*93*
Bad / very bad	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
All children										
Very good	66	68	65	70	68	66	65	68	67	67
Good	29	27	29	27	27	28	30	28	28	27
Fair	4	4	5	3	5	5	5	4	4	5
Bad	1	0	1	1	0	1	0	1	1	1
Very Bad	0	0	0	0	0	0	0	-	0	0
Very good / good	*95*	*95*	*94*	*96*	*94*	*95*	*95*	*96*	*95*	*94*
Bad / very bad	*1*	*1*	*1*	*1*	*0*	*1*	*1*	*1*	*1*	*1*

Continued…

Table 1.1 - *Continued*

Self-assessed general health	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):										
Men	*3087*	*3598*	*3464*	*3608*	*2309*	*2344*	*2237*	*2395*	*2077*	*1776*
Women	*3376*	*3926*	*3775*	*3932*	*2504*	*2546*	*2421*	*2596*	*2245*	*1919*
All adults	*6463*	*7524*	*7239*	*7541*	*4813*	*4890*	*4658*	*4992*	*4322*	*3696*
Boys	*896*	*1333*	*916*	*1015*	*912*	*940*	*852*	*725*	*798*	*819*
Girls	*854*	*1273*	*876*	*970*	*873*	*899*	*815*	*695*	*763*	*784*
All children	*1750*	*2606*	*1792*	*1985*	*1786*	*1839*	*1667*	*1420*	*1561*	*1603*
Bases (unweighted):										
Men	*2840*	*3285*	*3112*	*3279*	*2127*	*2138*	*2068*	*2244*	*1894*	*1597*
Women	*3622*	*4241*	*4128*	*4262*	*2686*	*2753*	*2590*	*2749*	*2428*	*2099*
All adults	*6462*	*7526*	*7240*	*7541*	*4813*	*4891*	*4658*	*4993*	*4322*	*3696*
Boys	*872*	*1333*	*960*	*998*	*878*	*948*	*842*	*735*	*771*	*819*
Girls	*878*	*1272*	*832*	*987*	*908*	*891*	*825*	*685*	*790*	*784*
All children	*1750*	*2605*	*1792*	*1985*	*1786*	*1839*	*1667*	*1420*	*1561*	*1603*

Table 1.2 Adult self-assessed general health, 2017, by age and sex

Aged 16 and over *2017*

Self-assessed general health	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Very good	38	47	41	33	27	23	15	34
Good	47	38	40	44	40	41	35	41
Fair	13	11	13	15	21	26	33	18
Bad	2	4	3	6	9	5	12	5
Very bad	-	0	2	3	2	6	4	2
Good / Very good	*85*	*85*	*82*	*76*	*68*	*63*	*50*	*75*
Bad / Very bad	*2*	*4*	*5*	*8*	*11*	*10*	*17*	*8*
Women								
Very good	42	42	43	35	31	24	19	34
Good	45	41	40	36	33	37	34	38
Fair	11	14	10	20	23	25	33	19
Bad	2	3	4	5	10	10	11	6
Very bad	-	1	3	4	4	4	3	3
Good / Very good	*86*	*83*	*83*	*71*	*63*	*61*	*53*	*72*
Bad / Very bad	*2*	*4*	*7*	*9*	*14*	*14*	*14*	*9*
All adults								
Very good	40	44	42	34	29	23	17	34
Good	46	39	40	40	36	39	34	39
Fair	12	12	11	17	22	26	33	18
Bad	2	3	4	6	9	7	11	6
Very bad	-	1	2	3	3	5	4	3
Good / Very good	*86*	*84*	*82*	*74*	*66*	*62*	*52*	*73*
Bad / Very bad	*2*	*4*	*6*	*9*	*13*	*12*	*15*	*8*
Bases (weighted):								
Men	*242*	*294*	*270*	*323*	*282*	*221*	*144*	*1776*
Women	*237*	*306*	*285*	*346*	*298*	*244*	*203*	*1919*
All adults	*480*	*600*	*554*	*669*	*580*	*465*	*347*	*3696*
Bases (unweighted):								
Men	*133*	*219*	*201*	*244*	*327*	*283*	*190*	*1597*
Women	*159*	*287*	*324*	*366*	*384*	*342*	*237*	*2099*
All adults	*292*	*506*	*525*	*610*	*711*	*625*	*427*	*3696*

Table 1.3 Prevalence of long-term conditions in adults and children, 2008 to 2017

All ages   *2008 - 2017*

Long-term conditions and limiting long-term conditions	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%
Men										
No long-term conditions	62	63	59	57	58	59	54	56	56	57
Limiting long-term conditions	23	23	25	26	28	28	30	30	30	29
Non-limiting long-term conditions	15	14	16	17	14	13	15	14	14	14
Total with conditions	*38*	*37*	*41*	*43*	*42*	*41*	*46*	*44*	*44*	*43*
Women										
No long-term conditions	58	58	55	54	51	54	54	52	51	53
Limiting long-term conditions	28	27	30	30	35	34	33	33	35	34
Non-limiting long-term conditions	15	15	15	16	14	13	14	15	15	13
Total with conditions	*42*	*42*	*45*	*46*	*49*	*46*	*46*	*48*	*49*	*47*
All adults										
No long-term conditions	59	60	57	56	54	56	54	54	53	55
Limiting long-term conditions	26	25	28	28	32	31	31	32	33	32
Non-limiting long-term conditions	15	14	16	16	14	13	15	14	14	13
Total with conditions	*41*	*40*	*43*	*44*	*46*	*44*	*46*	*46*	*47*	*45*

Continued…

Table 1.3 - Continued

Long-term conditions and limiting long-term conditions	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%
Boys										
No long-term conditions	85	82	83	85	81	81	79	83	82	82
Limiting long-term conditions	7	7	9	7	11	11	12	10	9	11
Non-limiting long-term conditions	8	11	8	9	8	9	9	7	9	7
Total with conditions	*15*	*18*	*17*	*15*	*19*	*19*	*21*	*17*	*18*	*18*
Girls										
No long-term conditions	86	86	87	87	88	85	82	86	86	83
Limiting long-term conditions	6	6	7	5	6	8	9	8	6	10
Non-limiting long-term conditions	8	8	6	9	6	8	9	6	8	7
Total with conditions	*14*	*14*	*13*	*13*	*12*	*15*	*18*	*14*	*14*	*17*
All children										
No long-term conditions	86	84	85	86	84	83	81	85	84	83
Limiting long-term conditions	6	6	8	6	9	9	11	9	7	10
Non-limiting long-term conditions	8	9	7	9	7	8	9	7	8	7
Total with conditions	*14*	*16*	*15*	*14*	*16*	*17*	*19*	*15*	*16*	*17*

Continued…

Table 1.3 - Continued

Long-term conditions and limiting long-term conditions	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):										
Men	*3087*	*3597*	*3465*	*3610*	*2306*	*2345*	*2237*	*2396*	*2076*	*1777*
Women	*3377*	*3926*	*3777*	*3932*	*2505*	*2545*	*2420*	*2596*	*2242*	*1918*
All adults	*6464*	*7523*	*7242*	*7542*	*4811*	*4889*	*4657*	*4992*	*4318*	*3695*
Boys	*896*	*1333*	*916*	*1012*	*912*	*940*	*852*	*725*	*798*	*819*
Girls	*854*	*1273*	*875*	*969*	*873*	*897*	*813*	*695*	*763*	*784*
All children	*1750*	*2606*	*1791*	*1981*	*1786*	*1837*	*1665*	*1420*	*1561*	*1603*
Bases (unweighted):										
Men	*2840*	*3283*	*3112*	*3280*	*2125*	*2139*	*2068*	*2245*	*1893*	*1597*
Women	*3623*	*4241*	*4129*	*4262*	*2686*	*2752*	*2588*	*2749*	*2425*	*2098*
All adults	*6463*	*7524*	*7241*	*7542*	*4811*	*4891*	*4656*	*4994*	*4318*	*3695*
Boys	*872*	*1333*	*960*	*995*	*878*	*948*	*842*	*735*	*771*	*819*
Girls	*878*	*1272*	*831*	*986*	*908*	*889*	*824*	*685*	*790*	*784*
All children	*1750*	*2605*	*1791*	*1981*	*1786*	*1837*	*1666*	*1420*	*1561*	*1603*

Table 1.4 Prevalence of long-term conditions in adults and children, 2017, by age and sex

Long-term conditions and limiting long-term conditions	Age								Total 16+
	0-15	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%	%
Males									
No long-term conditions	82	70	75	74	59	41	36	29	57
Limiting long-term conditions	11	26	17	17	23	39	41	55	29
Non-limiting long-term conditions	7	4	8	8	18	20	23	16	14
Total with conditions	*18*	*30*	*25*	*26*	*41*	*59*	*64*	*71*	*43*
Females									
No long-term conditions	83	64	74	65	52	43	35	28	53
Limiting long-term conditions	10	27	17	24	33	42	49	56	34
Non-limiting long-term conditions	7	9	8	11	15	15	17	16	13
Total with conditions	*17*	*36*	*26*	*35*	*48*	*57*	*65*	*72*	*47*
All adults									
No long-term conditions	83	67	75	70	55	42	35	28	55
Limiting long-term conditions	10	26	17	21	28	40	45	56	32
Non-limiting long-term conditions	7	6	8	10	17	18	20	16	13
Total with conditions	*17*	*33*	*25*	*30*	*45*	*58*	*65*	*72*	*45*

Continued…

Table 1.4 - Continued

All ages   *2017*

Long-term conditions and limiting long-term conditions	Age								Total 16+
	0-15	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):									
Males	*819*	*242*	*294*	*271*	*323*	*281*	*221*	*144*	*1777*
Females	*784*	*237*	*306*	*285*	*346*	*298*	*244*	*202*	*1918*
All	*1603*	*480*	*600*	*556*	*669*	*579*	*465*	*346*	*3695*
Bases (unweighted):									
Males	*819*	*133*	*219*	*202*	*244*	*326*	*283*	*190*	*1597*
Females	*784*	*159*	*287*	*324*	*366*	*384*	*342*	*236*	*2098*
All	*1603*	*292*	*506*	*526*	*610*	*710*	*625*	*426*	*3695*

Table 1.5 Any CVD, doctor-diagnosed diabetes, any CVD or diabetes, IHD, stroke, IHD or stroke, 2017, by age and sex

Aged 16 and over   *2017*

Any CVD[a] / doctor-diagnosed diabetes[b] / any CVD or diabetes[b] / IHD[c] / stroke / IHD or stroke	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Any CVD	3	7	7	11	23	32	48	16
Doctor-diagnosed diabetes	1	1	3	6	12	18	19	7
Any CVD or diabetes	4	7	10	16	29	43	57	21
IHD	-	0	-	5	9	15	27	6
Stroke	-	-	1	4	4	8	9	3
IHD or Stroke	-	0	1	7	13	19	33	9
Women								
Any CVD	6	5	7	9	17	28	39	15
Doctor-diagnosed diabetes	2	1	1	4	8	13	15	6
Any CVD or diabetes	6	6	7	11	22	34	48	18
IHD	-	-	-	1	4	12	16	4
Stroke	-	0	1	1	4	6	10	3
IHD or Stroke	-	0	1	2	8	16	23	6
All adults								
Any CVD	5	6	7	10	20	30	43	15
Doctor-diagnosed diabetes	1	1	2	5	10	15	16	6
Any CVD or diabetes	5	7	9	13	26	38	51	19
IHD	-	0	-	3	7	13	21	5
Stroke	-	0	1	3	4	7	9	3
IHD or Stroke	-	0	1	4	10	17	27	7

Table 1.5 - Continued

Aged 16 and over   *2017*

Any CVD[a] / doctor-diagnosed diabetes[b] / any CVD or diabetes[b] / IHD[c] / stroke / IHD or stroke	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	242	294	271	323	282	221	144	1778
Women	237	306	285	346	298	243	202	1917
All adults	480	600	556	669	580	464	346	3695
Bases (unweighted):								
Men	133	219	202	244	327	283	190	1598
Women	159	287	324	366	384	341	236	2097
All adults	292	506	526	610	711	624	426	3695

a Any cardiovascular condition, including IHD (heart attack or angina), stroke, heart murmur, abnormal heart rhythm or 'other heart trouble' - excludes diabetes and high blood pressure

b Excludes diabetes diagnosed during pregnancy

c Heart attack or angina

Table 1.6 Any CVD, doctor-diagnosed diabetes, IHD or stroke (age-standardised), 2003 to 2017, by area deprivation and sex

Aged 16 and over   *2003 - 2017*

Any CVD[a] / doctor-diagnosed diabetes[b] / IHD[c] / stroke	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Men											
Any CVD											
1st (most deprived)	21	19	22	19	21	19	19	26	23	17	25
2nd	17	18	16	17	17	21	18	17	15	18	20
3rd	16	17	16	15	18	13	16	18	12	17	13
4th	16	14	14	18	14	18	16	17	17	16	14
5th (least deprived)	12	14	13	17	13	17	13	16	13	11	12
Doctor-diagnosed diabetes											
1st (most deprived)	5	6	9	10	9	9	9	10	9	8	13
2nd	4	6	8	6	6	9	7	9	7	8	7
3rd	4	7	7	6	8	6	5	10	7	5	8
4th	4	5	6	6	5	5	6	6	6	4	5
5th (least deprived)	3	4	5	5	4	4	6	6	5	5	4
IHD											
1st (most deprived)	14	10	12	10	12	10	8	15	12	8	10
2nd	11	10	9	10	10	9	11	8	7	9	8
3rd	7	8	8	6	7	6	8	6	5	6	4
4th	9	6	6	7	7	8	6	7	8	7	5
5th (least deprived)	6	5	7	6	5	6	5	5	6	5	5

Continued…

Table 1.6 - Continued

Any CVD[a] / doctor-diagnosed diabetes[b] / IHD[c] / stroke	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Stroke											
1st (most deprived)	5	6	4	4	5	5	6	3	5	5	5
2nd	3	2	4	4	4	4	4	4	2	3	4
3rd	2	2	2	3	3	3	2	5	2	3	2
4th	2	2	3	3	3	2	3	2	3	2	3
5th (least deprived)	1	2	2	4	2	2	2	3	1	3	2
Women											
Any CVD											
1st (most deprived)	19	19	19	17	18	25	21	19	19	20	20
2nd	16	16	15	17	13	17	19	14	15	15	16
3rd	15	17	14	13	14	16	15	13	14	14	13
4th	14	15	12	14	13	15	13	12	13	13	12
5th (least deprived)	11	14	10	10	12	9	12	13	13	13	12
Doctor-diagnosed diabetes											
1st (most deprived)	6	6	7	6	7	6	7	8	8	8	9
2nd	5	5	6	5	7	7	6	7	6	6	6
3rd	4	5	5	6	5	6	6	5	5	5	5
4th	3	3	2	4	3	3	4	4	5	3	4
5th (least deprived)	2	3	3	2	3	3	4	3	4	3	4

Continued…

Table 1.6 - Continued

Any CVD[a] / doctor-diagnosed diabetes[b] / IHD[c] / stroke	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
IHD											
1st (most deprived)	12	8	9	8	7	10	9	8	9	7	8
2nd	7	7	6	7	5	6	7	5	5	6	5
3rd	6	7	5	5	6	6	6	5	4	3	3
4th	6	4	4	4	4	5	3	3	3	3	3
5th (least deprived)	5	4	3	3	3	3	3	4	3	3	1
Stroke											
1st (most deprived)	3	4	3	4	4	6	5	4	5	5	5
2nd	3	3	2	4	3	4	4	4	2	2	3
3rd	2	4	2	2	3	3	1	2	2	2	1
4th	2	3	2	2	2	3	2	3	1	2	3
5th (least deprived)	1	1	2	1	1	0	1	2	3	2	1
All adults											
Any CVD											
1st (most deprived)	20	19	20	18	19	22	20	22	21	18	22
2nd	17	17	16	17	15	19	19	15	15	16	18
3rd	16	17	15	14	16	15	15	15	13	16	13
4th	15	14	13	16	13	16	14	14	15	14	13
5th (least deprived)	11	14	12	13	13	13	13	14	13	12	12

Continued…

Table 1.6 - *Continued*

Any CVD[a] / doctor-diagnosed diabetes[b] / IHD[c] / stroke	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Doctor-diagnosed diabetes											
1st (most deprived)	6	6	8	8	8	8	8	9	9	8	11
2nd	4	6	7	5	7	8	6	8	6	7	7
3rd	4	6	6	6	6	6	5	7	6	5	7
4th	4	4	4	5	4	4	5	5	5	4	5
5th (least deprived)	3	3	4	3	4	4	5	4	5	4	4
IHD											
1st (most deprived)	13	9	10	9	10	10	8	11	10	7	9
2nd	9	8	8	9	7	8	9	6	6	7	6
3rd	7	8	7	6	7	6	7	6	4	5	4
4th	7	5	5	6	5	6	5	5	6	5	4
5th (least deprived)	6	4	5	5	4	4	4	4	4	4	3
Stroke											
1st (most deprived)	4	5	4	4	4	5	5	4	5	5	5
2nd	3	3	3	4	3	4	4	4	2	3	3
3rd	2	3	2	3	3	3	2	3	2	3	2
4th	2	2	2	2	3	2	3	2	2	2	3
5th (least deprived)	1	1	2	3	2	1	2	2	2	3	2

Table 1.6 - *Continued*

Any CVD[a] / doctor-diagnosed diabetes[b] / IHD[c] / stroke	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases[d] (weighted):											
Men											
1st (most deprived)	*706*	*576*	*622*	*711*	*700*	*388*	*384*	*411*	*443*	*413*	*292*
2nd	*757*	*644*	*732*	*702*	*666*	*474*	*472*	*431*	*488*	*389*	*370*
3rd	*759*	*583*	*677*	*676*	*753*	*478*	*493*	*424*	*443*	*446*	*358*
4th	*819*	*727*	*785*	*713*	*808*	*486*	*462*	*475*	*567*	*386*	*380*
5th (least deprived)	*813*	*553*	*783*	*662*	*680*	*482*	*533*	*495*	*460*	*444*	*378*
Women											
1st (most deprived)	*845*	*677*	*782*	*798*	*762*	*477*	*485*	*439*	*505*	*497*	*377*
2nd	*852*	*693*	*777*	*795*	*732*	*499*	*503*	*494*	*519*	*430*	*379*
3rd	*837*	*647*	*736*	*728*	*882*	*517*	*533*	*463*	*503*	*457*	*388*
4th	*866*	*725*	*787*	*758*	*829*	*485*	*525*	*534*	*593*	*385*	*371*
5th (least deprived)	*886*	*624*	*844*	*694*	*726*	*528*	*499*	*490*	*475*	*474*	*402*
All adults											
1st (most deprived)	*1552*	*1253*	*1404*	*1509*	*1462*	*865*	*869*	*850*	*948*	*910*	*669*
2nd	*1609*	*1338*	*1510*	*1497*	*1398*	*973*	*975*	*925*	*1006*	*818*	*749*
3rd	*1596*	*1230*	*1413*	*1404*	*1635*	*996*	*1027*	*888*	*947*	*903*	*746*
4th	*1686*	*1452*	*1572*	*1471*	*1637*	*970*	*987*	*1009*	*1159*	*771*	*751*
5th (least deprived)	*1700*	*1177*	*1627*	*1356*	*1407*	*1010*	*1032*	*984*	*935*	*918*	*780*

Continued…

Table 1.6 - Continued

Any CVD[a] / doctor-diagnosed diabetes[b] / IHD[c] / stroke	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases[d] (unweighted):											
Men											
1st (most deprived)	606	465	568	688	618	301	328	336	387	294	236
2nd	698	570	612	609	574	389	445	397	445	327	313
3rd	802	611	697	614	717	499	511	481	479	430	361
4th	793	722	765	687	809	496	451	447	545	421	375
5th (least deprived)	709	470	645	513	559	440	404	405	391	422	313
Women											
1st (most deprived)	831	656	834	967	805	428	457	443	489	420	369
2nd	891	714	782	821	758	502	554	537	535	438	397
3rd	975	764	880	799	965	618	668	556	590	552	465
4th	972	878	926	873	1007	593	605	571	661	505	456
5th (least deprived)	865	603	817	665	726	547	468	481	473	512	410
All adults											
1st (most deprived)	1437	1121	1402	1655	1423	729	785	779	876	714	605
2nd	1589	1284	1394	1430	1332	891	999	934	980	765	710
3rd	1777	1375	1577	1413	1682	1117	1179	1037	1069	982	826
4th	1765	1600	1691	1560	1816	1089	1056	1018	1206	926	831
5th (least deprived)	1574	1073	1462	1178	1285	987	872	886	864	934	723

a Any cardiovascular condition, including IHD (heart attack or angina), stroke, heart murmur, abnormal heart rhythm or 'other heart trouble' - excludes diabetes and high blood pressure

b Excludes diabetes diagnosed during pregnancy

c Heart attack or angina

d The bases shown are for any CVD. Bases are similar for other conditions

Table 1.7 Blood pressure level, 2003 to 2016/2017 combined

Aged 16 and over with a valid blood pressure reading and data on medication   *2003 - 2016/2017 combined*

Blood pressure level	2003	2008/2009 combined	2010/2011 combined	2012/2013 combined[a]	2014/2015 combined[a]	2016/2017 combined[a]
	%	%	%	%	%	%
Men						
Normotensive						
Nurse / nurse equivalent	67	65	67	72	70	68
Interviewer	n/a	n/a	n/a	71	69	67
Hypertensive controlled						
Nurse / nurse equivalent	6	8	8	5	8	8
Interviewer	n/a	n/a	n/a	5	8	8
Hypertensive uncontrolled						
Nurse / nurse equivalent	6	7	7	6	6	6
Interviewer	n/a	n/a	n/a	6	6	6
Hypertensive untreated						
Nurse / nurse equivalent	21	19	19	18	16	17
Interviewer	n/a	n/a	n/a	19	16	19
Total with hypertension						
Nurse / nurse equivalent	33	35	33	28	30	32
Interviewer	n/a	n/a	n/a	29	31	33
Women						
Normotensive						
Nurse / nurse equivalent	67	69	68	71	74	73
Interviewer	n/a	n/a	n/a	71	73	72
Hypertensive controlled						
Nurse / nurse equivalent	7	9	8	7	8	8
Interviewer	n/a	n/a	n/a	7	7	8
Hypertensive uncontrolled						
Nurse / nurse equivalent	9	8	9	8	6	6
Interviewer	n/a	n/a	n/a	8	6	6
Hypertensive untreated						
Nurse / nurse equivalent	17	15	16	13	13	13
Interviewer	n/a	n/a	n/a	14	13	14
Total with hypertension						
Nurse / nurse equivalent	33	31	32	29	26	27
Interviewer	n/a	n/a	n/a	29	27	28

Continued…

Table 1.7 - *Continued*

Aged 16 and over with a valid blood pressure reading and data on medication   *combined*

Blood pressure level	2003	2008/2009 combined	2010/2011 combined	2012/2013 combined[a]	2014/2015 combined[a]	2016/2017 combined[a]
	%	%	%	%	%	%
All adults						
Normotensive						
Nurse / nurse equivalent	67	67	67	72	72	70
Interviewer	n/a	n/a	n/a	71	71	70
Hypertensive controlled						
Nurse / nurse equivalent	7	9	8	6	8	8
Interviewer	n/a	n/a	n/a	6	8	8
Hypertensive uncontrolled						
Nurse / nurse equivalent	5	8	8	7	6	6
Interviewer	n/a	n/a	n/a	7	6	6
Hypertensive untreated						
Nurse / nurse equivalent	18	17	17	15	14	15
Interviewer	n/a	n/a	n/a	16	15	16
Total with hypertension						
Nurse / nurse equivalent	33	33	33	28	28	30
Interviewer	n/a	n/a	n/a	29	29	30
Bases (weighted):						
Men	*2032*	*899*	*815*	*879*	*888*	*754*
Women	*2383*	*998*	*879*	*949*	*959*	*826*
All adults	*4415*	*1897*	*1694*	*1828*	*1847*	*1580*
Bases (unweighted):						
Men	*1933*	*839*	*736*	*828*	*802*	*668*
Women	*2538*	*1084*	*978*	*1037*	*1062*	*902*
All adults	*4471*	*1923*	*1714*	*1865*	*1864*	*1570*

a Measurements were taken by an interviewer from 2012 onwards and converted to an equivalent of the nurse measure

Table 1.8 Blood pressure level (age-standardised), 2003 to 2016/2017 combined, by area deprivation and sex

2003 - 2016/2017 combined

Blood pressure level (nurse / nurse equivalent)	2003	2008/2009 combined	2010/2011 combined	2012/2013 combined[a]	2014/2015 combined[a]	2016/2017 combined[a]
	%	%	%	%	%	%
Men						
Normotensive						
1st (most deprived)	65	62	59	72	69	61
2nd	65	68	68	65	72	66
3rd	66	71	61	68	66	63
4th	64	59	74	71	70	75
5th (least deprived)	64	62	65	80	70	77
Hypertensive controlled						
1st (most deprived)	9	9	13	4	12	9
2nd	6	10	5	5	9	14
3rd	5	6	12	10	7	7
4th	5	12	8	3	9	7
5th (least deprived)	7	6	4	2	6	6
Hypertensive uncontrolled						
1st (most deprived)	9	6	11	9	10	9
2nd	8	5	9	6	5	2
3rd	6	9	8	6	9	10
4th	8	8	4	6	5	4
5th (least deprived)	5	7	6	4	5	4
Hypertensive untreated						
1st (most deprived)	17	23	17	14	9	21
2nd	20	16	17	24	15	18
3rd	23	14	20	16	18	21
4th	23	21	13	20	16	14
5th (least deprived)	24	25	25	14	19	13
Total with hypertension						
1st (most deprived)	35	38	41	28	31	39
2nd	35	32	32	35	28	34
3rd	34	29	39	32	34	37
4th	36	41	26	29	30	25
5th (least deprived)	36	38	35	20	30	23

Continued…

Table 1.8 - *Continued*

Aged 16 and over   *2003 - 2016/2017 combined*

Blood pressure level (nurse / nurse equivalent)	2003	2008/2009 combined	2010/2011 combined	2012/2013 combined[a]	2014/2015 combined[a]	2016/2017 combined[a]
	%	%	%	%	%	%
Women						
Normotensive						
1st (most deprived)	64	61	61	67	70	71
2nd	65	70	69	68	73	70
3rd	63	65	65	75	71	70
4th	68	70	71	73	76	79
5th (least deprived)	71	70	71	69	74	75
Hypertensive controlled						
1st (most deprived)	9	12	9	8	10	9
2nd	8	5	8	7	5	8
3rd	9	12	11	8	11	9
4th	7	6	7	6	4	6
5th (least deprived)	6	8	5	8	9	8
Hypertensive uncontrolled						
1st (most deprived)	10	8	14	14	5	11
2nd	12	9	11	8	6	4
3rd	10	8	8	5	7	6
4th	8	9	7	9	6	2
5th (least deprived)	8	8	7	7	5	7
Hypertensive untreated						
1st (most deprived)	18	19	17	11	15	9
2nd	16	16	12	17	15	17
3rd	19	15	17	11	11	15
4th	17	15	15	12	14	13
5th (least deprived)	16	13	18	16	12	11
Total with hypertension						
1st (most deprived)	36	39	39	33	30	29
2nd	35	30	31	32	27	30
3rd	37	35	35	25	29	30
4th	32	30	29	27	24	21
5th (least deprived)	29	30	29	31	26	25

Continued…

Table 1.8 - *Continued*

Blood pressure level (nurse / nurse equivalent)	2003	2008/2009 combined	2010/2011 combined	2012/2013 combined[a]	2014/2015 combined[a]	2016/2017 combined[a]
	%	%	%	%	%	%
All adults						
Normotensive						
1st (most deprived)	64	61	60	69	70	66
2nd	65	69	69	67	73	68
3rd	64	68	63	72	69	67
4th	66	64	72	72	73	77
5th (least deprived)	68	66	68	74	72	76
Hypertensive controlled						
1st (most deprived)	9	11	10	6	11	9
2nd	7	8	7	6	7	11
3rd	7	9	11	9	9	8
4th	6	9	8	5	7	6
5th (least deprived)	6	7	5	5	7	7
Hypertensive uncontrolled						
1st (most deprived)	10	7	13	12	7	10
2nd	10	7	10	7	6	3
3rd	8	8	8	6	8	8
4th	8	8	6	8	5	3
5th (least deprived)	6	8	6	6	5	5
Hypertensive untreated						
1st (most deprived)	17	20	17	12	12	14
2nd	18	16	14	21	15	18
3rd	21	14	18	14	14	18
4th	20	18	14	16	15	13
5th (least deprived)	20	19	21	15	15	12
Total with hypertension						
1st (most deprived)	36	39	40	31	30	34
2nd	35	31	31	33	27	32
3rd	36	32	37	28	31	33
4th	34	36	28	28	27	23
5th (least deprived)	32	34	32	26	28	24

Continued…

Table 1.8 - *Continued*

2003 - 2016/2017 combined

Blood pressure level (nurse / nurse equivalent)	2003	2008/2009 combined	2010/2011 combined	2012/2013 combined[a]	2014/2015 combined[a]	2016/2017 combined[a]
Bases (weighted):						
Men						
1st (most deprived)	*313*	*155*	*132*	*135*	*159*	*125*
2nd	*421*	*153*	*161*	*175*	*168*	*144*
3rd	*405*	*179*	*173*	*188*	*171*	*189*
4th	*448*	*225*	*179*	*184*	*214*	*140*
5th (least deprived)	*455*	*194*	*170*	*194*	*174*	*155*
Women						
1st (most deprived)	*427*	*195*	*163*	*173*	*187*	*151*
2nd	*484*	*176*	*154*	*186*	*192*	*175*
3rd	*471*	*195*	*199*	*186*	*180*	*201*
4th	*510*	*212*	*180*	*203*	*232*	*139*
5th (least deprived)	*489*	*222*	*185*	*200*	*166*	*160*
All adults						
1st (most deprived)	*740*	*351*	*296*	*309*	*346*	*277*
2nd	*904*	*328*	*315*	*360*	*360*	*318*
3rd	*876*	*373*	*372*	*374*	*351*	*390*
4th	*958*	*436*	*359*	*387*	*446*	*279*
5th (least deprived)	*944*	*416*	*355*	*394*	*340*	*315*
Bases (unweighted):						
Men						
1st (most deprived)	*250*	*123*	*125*	*122*	*128*	*107*
2nd	*374*	*151*	*124*	*153*	*147*	*109*
3rd	*438*	*174*	*158*	*198*	*183*	*181*
4th	*453*	*210*	*175*	*185*	*205*	*138*
5th (least deprived)	*418*	*181*	*154*	*170*	*139*	*133*
Women						
1st (most deprived)	*385*	*179*	*177*	*169*	*189*	*147*
2nd	*497*	*190*	*163*	*197*	*207*	*164*
3rd	*573*	*223*	*215*	*223*	*227*	*241*
4th	*569*	*243*	*214*	*245*	*262*	*181*
5th (least deprived)	*514*	*249*	*209*	*203*	*177*	*169*
All adults						
1st (most deprived)	*635*	*302*	*302*	*291*	*317*	*254*
2nd	*871*	*341*	*287*	*350*	*354*	*273*
3rd	*1011*	*397*	*373*	*421*	*410*	*422*
4th	*1022*	*453*	*389*	*430*	*467*	*319*
5th (least deprived)	*932*	*430*	*363*	*373*	*316*	*302*

a Measurements were taken by an interviewer from 2012 onwards and converted to an equivalent of the nurse measure

Table 1.9 Detection and treatment of hypertension, 2014 to 2017 combined, by age and sex

Aged 16 and over with survey-defined hypertension   *2014-2017 combined*

Detection and treatment levels	Age					Total
	16-34	35-54	55-64	65-74	75+	
	%	%	%	%	%	%
Men						
Hypertension detection rate[a]	*	46	60	69	66	55
Hypertension treated, but not controlled[b]	*	13	21	29	24	20
Hypertension treated and controlled[c]	*	22	28	31	32	26
Women						
Hypertension detection rate[a]	*	44	61	66	73	62
Hypertension treated, but not controlled[b]	*	13	17	24	31	22
Hypertension treated and controlled[c]	*	16	33	31	31	28
All adults						
Hypertension detection rate[a]	[20]	45	61	67	71	59
Hypertension treated, but not controlled[b]	[10]	13	19	27	28	21
Hypertension treated and controlled[c]	[6]	20	31	31	31	27
Bases (weighted):						
Men	*40*	*148*	*126*	*124*	*86*	*524*
Women	*16*	*90*	*102*	*140*	*141*	*488*
All adults	*56*	*238*	*228*	*264*	*227*	*1012*
Bases (unweighted):						
Men	*22*	*111*	*129*	*160*	*107*	*529*
Women	*13*	*96*	*125*	*193*	*156*	*583*
All adults	*35*	*207*	*254*	*353*	*263*	*1112*

a Detection rate is the proportion of those with survey defined hypertension, who say they have been told by a doctor they have high blood pressure
b Of those with survey-defined hypertension, the proportion who are on medication for high blood pressure and also have high blood pressure readings
c Of those with survey-defined hypertension, the proportion who are on medication for high blood pressure and do not have high blood pressure readings

Table 1.10 Adult prevalence of CPR training, length of time since original training and whether attended refresher, 2017, by age and sex

Aged 16 and over   *2017*

Type of CPR training last attended	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Ever trained								
Yes	57	60	65	60	55	45	28	55
No	43	40	35	40	45	55	72	45
Length of time since original training[a]								
Within the last 12 months	13	9	7	9	7	4	-	8
One year ago but less than two years ago	17	7	7	6	7	5	-	8
Two years ago but less than five years ago	34	20	15	9	8	6	4	15
Five years ago or more	36	64	71	76	78	85	96	69
Whether attended refresher training[a]								
Yes	35	48	41	49	44	25	12	41
No	65	52	59	51	56	75	88	59
Whether attended any training within last 2 years								
Yes[a]	54	44	33	45	26	14	2	36
Yes (all sample)	31	26	21	27	14	6	1	20

Table 1.10 - Continued

Type of CPR training last attended	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Women								
Ever trained								
Yes	62	63	59	60	55	40	20	53
No	38	37	41	40	45	60	80	47
Length of time since original training[a]								
Within the last 12 months	19	10	11	11	9	4	[-]	11
One year ago but less than two years ago	12	8	7	7	7	2	[-]	7
Two years ago but less than five years ago	35	14	17	10	9	4	[2]	14
Five years ago or more	34	69	64	71	75	90	[98]	68
Whether attended refresher training[a]								
Yes	32	46	43	47	45	21	[16]	40
No	68	54	57	53	55	79	[84]	60
Whether attended any training within last 2 years								
Yes[a]	46	44	42	41	32	10	[9]	37
Yes (all sample)	29	28	24	25	17	4	2	20

Continued…

Table 1.10 - Continued

Type of CPR training last attended	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
Ever trained								
Yes	60	62	62	60	55	42	23	54
No	40	38	38	40	45	58	77	46
Length of time since original training[a]								
Within the last 12 months								
One year ago but less than two years ago	16	9	9	10	8	4	-	9
Two years ago but less than five years ago	14	7	7	7	7	3	-	7
Five years ago or more	34	17	16	10	8	5	3	15
	35	66	68	74	77	88	97	69
Whether attended refresher training[a]								
Yes	33	47	42	48	45	23	14	40
No	67	53	58	52	55	77	86	60
Whether attended any training within last 2 years								
Yes[a]	50	44	37	43	29	12	6	36
Yes (all sample)	30	27	23	26	16	5	1	20

Table 1.10 - Continued

Aged 16 and over   *2017*

Type of CPR training last attended	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	*242*	*294*	*267*	*321*	*281*	*221*	*143*	*1770*
Men who have attended training	*139*	*177*	*174*	*193*	*154*	*99*	*40*	*976*
Women	*236*	*305*	*284*	*344*	*298*	*243*	*201*	*1910*
Women who have attended training	*148*	*193*	*166*	*207*	*163*	*98*	*41*	*1015*
All adults	*478*	*598*	*551*	*665*	*580*	*464*	*344*	*3681*
All who have attended training	*286*	*370*	*341*	*400*	*317*	*197*	*80*	*1991*
Bases (unweighted):								
Men	*133*	*219*	*200*	*242*	*326*	*283*	*189*	*1592*
Men who have attended training	*72*	*128*	*132*	*151*	*183*	*136*	*56*	*858*
Women	*158*	*286*	*323*	*364*	*384*	*341*	*235*	*2091*
Women who have attended training	*98*	*180*	*194*	*218*	*215*	*142*	*46*	*1093*
All adults	*291*	*505*	*523*	*606*	*710*	*624*	*424*	*3683*
All who have attended training	*170*	*308*	*326*	*369*	*398*	*278*	*102*	*1951*

a Of those who have ever received any CPR training

Table 1.11 Adult prevalence of CPR training, length of time since original training and whether attended refresher (age-standardised), 2017, by area deprivation and sex

Aged 16 and over   *2017*

Type of CPR training last attended	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
Ever trained					
Yes	58	59	59	51	48
No	42	41	41	49	52
Length of time since original training[a]					
Within the last 12 months	8	10	7	8	6
One year ago but less than two years ago	10	9	8	4	5
Two years ago but less than five years ago	17	11	16	18	16
Five years ago or more	66	70	69	70	73
Whether attended refresher training[a]					
Yes	41	42	40	43	34
No	59	58	60	57	66
Women					
Ever trained					
Yes	57	60	55	49	44
No	43	40	45	51	56
Length of time since original training[a]					
Within the last 12 months	11	10	11	13	8
One year ago but less than two years ago	7	8	8	7	8
Two years ago but less than five years ago	15	10	17	15	14
Five years ago or more	66	72	64	65	71
Whether attended refresher training[a]					
Yes	43	44	36	42	33
No	57	56	64	58	67

Table 1.11 - *Continued*

Type of CPR training last attended	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
All adults					
Ever trained					
Yes	57	60	57	50	46
No	43	40	43	50	54
Length of time since original training[a]					
Within the last 12 months	10	10	9	10	7
One year ago but less than two years ago	8	8	8	5	7
Two years ago but less than five years ago	16	11	16	17	15
Five years ago or more	66	71	66	68	72
Whether attended refresher training[a]					
Yes	42	43	38	42	33
No	58	57	62	58	67
Bases (weighted):					
Men	*376*	*379*	*356*	*370*	*289*
Men who have attended training	*217*	*225*	*211*	*188*	*139*
Women	*403*	*371*	*381*	*379*	*376*
Women who have attended training	*230*	*222*	*210*	*187*	*164*
All adults	*779*	*750*	*737*	*749*	*665*
All who have attended training	*447*	*447*	*420*	*375*	*303*
Bases (unweighted):					
Men	*312*	*374*	*358*	*313*	*235*
Men who have attended training	*169*	*222*	*202*	*160*	*105*
Women	*411*	*456*	*459*	*397*	*368*
Women who have attended training	*224*	*263*	*253*	*195*	*158*
All adults	*723*	*830*	*817*	*710*	*603*
All who have attended training	*393*	*485*	*455*	*355*	*263*

a Of those who have ever received any CPR training

Table 1.12 Type of CPR training last attended, 2017, by age and sex

Aged 16 and over who have ever received CPR training   *2017*

Type of CPR training	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
I taught myself from a book, through the internet (e.g. YouTube other website) or another self-learning tool	-	2	2	1	-	-	-	1
Training I took primarily because I am a parent or carer	-	1	3	1	1	1	3	1
Training which was compulsory for me to take as part of my work	19	40	50	39	52	44	60	42
Training which I opted to take as part of my work	9	26	23	38	29	29	19	26
Training which was compulsory for me to take as part of my voluntary work or hobby	9	6	5	10	7	6	9	7
Training which I opted to take as part of my voluntary work or hobby	16	7	9	8	6	12	7	9
Training I took whilst I was a student as part of my school/college/university work	38	14	6	2	3	5	-	10
Other	9	5	1	2	2	2	2	3
Women								
I taught myself from a book, through the internet (e.g. YouTube other website) or another self-learning tool	3	-	3	-	1	1	[-]	1
Training I took primarily because I am a parent or carer	2	5	7	4	1	3	[3]	4
Training which was compulsory for me to take as part of my work	14	47	42	49	51	41	[42]	42
Training which I opted to take as part of my work	9	17	23	26	25	24	[24]	21
Training which was compulsory for me to take as part of my voluntary work or hobby	10	3	6	6	4	13	[10]	6
Training which I opted to take as part of my voluntary work or hobby	15	4	8	8	9	13	[16]	9
Training I took whilst I was a student as part of my school/college/university work	48	22	8	3	6	1	[2]	14
Other	1	2	3	4	3	3	[3]	3

Continued…

Table 1.12 - *Continued*

Type of CPR training	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
I taught myself from a book, through the internet (e.g. YouTube other website) or another self-learning tool	1	1	2	0	1	0	-	1
Training I took primarily because I am a parent or carer	1	3	5	3	1	2	3	3
Training which was compulsory for me to take as part of my work	16	44	46	44	51	43	51	42
Training which I opted to take as part of my work	9	21	23	32	27	27	21	23
Training which was compulsory for me to take as part of my voluntary work or hobby	9	4	5	8	5	9	9	7
Training which I opted to take as part of my voluntary work or hobby	15	5	9	8	7	12	11	9
Training I took whilst I was a student as part of my school/college/university work	43	18	7	2	4	3	1	12
Other	5	4	2	3	3	3	2	3
Bases (weighted):								
Men	*139*	*177*	*174*	*193*	*153*	*99*	*40*	*975*
Women	*148*	*193*	*166*	*206*	*163*	*98*	*41*	*1014*
All adults	*286*	*370*	*341*	*399*	*316*	*197*	*80*	*1989*
Bases (unweighted):								
Men	*72*	*128*	*132*	*151*	*182*	*136*	*56*	*857*
Women	*98*	*180*	*194*	*217*	*215*	*142*	*46*	*1092*
All adults	*170*	*308*	*326*	*368*	*397*	*278*	*102*	*1949*

Chapter 2

Mental Health and Wellbeing

SUMMARY

- In 2017, 17% of adults exhibited signs of a possible psychiatric disorder (GHQ-12 score of four or more). Those aged 16-24 were most likely to have a GHQ-12 score of four or more (22%) with those aged 65 and over least likely (12-13%).

- Adults living in the most deprived areas were more likely to have a GHQ-12 score of four or more, indicative of a psychiatric disorder, than those living in the least deprived areas (24% in the most deprived and 12% in the 2nd least deprived and 14% in the least deprived).

Average levels of wellbeing, as measured by the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), were lowest among young adults and those in middle ages

16-24	25-34	35-44	45-54	55-64	65-74	75+
49.4	50.1	49.3	48.9	49.9	51.5	50.1

Mental wellbeing was significantly lower in the most deprived areas with average, age-standardised WEMWBS scores

47.5
in the most deprived areas

51.8
in the least deprived areas

There has been a steady and significant increase in the proportion of adults who have 2+ symptoms of depression

2010/11 — **8%**

2016/17 — **11%**
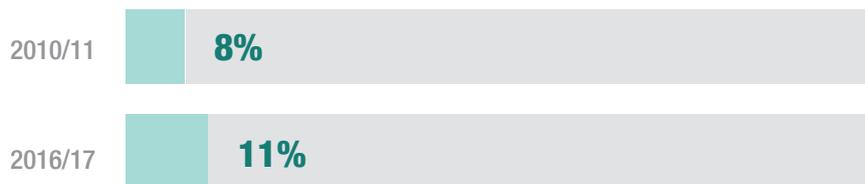
- In 2014-2017, prevalence of two or more depressive symptoms was much higher in the most deprived areas than in the least deprived areas (20% compared to 5%) as was prevalence of two or more symptoms of anxiety (17% compared to 7%).

- The proportion of adults that self-reported to have ever attempted suicide in 2016/2017 (6%) was the same as in 2014/2015 and significantly higher than the proportion reported in 2008/2009 (4%).

- In 2016/2017, over a fifth (21%) of young people aged 16-24 reported that they had ever self-harmed. This was significantly higher than for than older people (decreasing to less than 0.5% among those aged 75 and over).

13%
of women

9%
of men

2008/09 — 2016/17
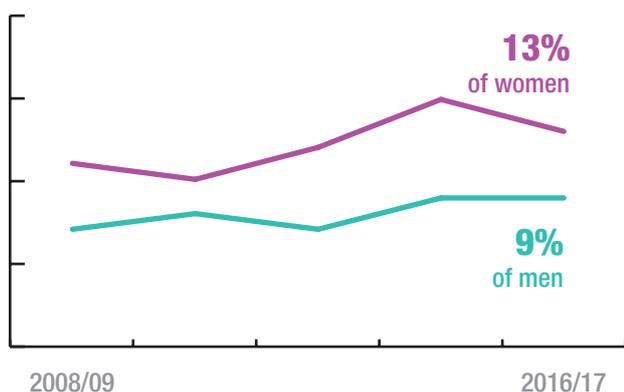
The proportion of adults who have reported 2 or more symptoms of anxiety has increased since 2008/09

The proportion of adults that had attempted suicide differed significantly by area deprivation level

1st (most deprived)	**12%**
2nd	**7%**
3rd	**4%**
4th	**4%**
5th (least deprived)	**4%**
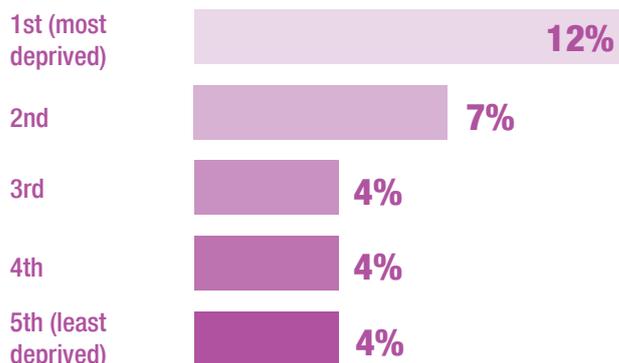
SUMMARY

- In 2015/2017, lower mental wellbeing was associated with adults who had 'unrealistic time pressures at work' 'always' or 'often' compared with those that reported it to happen 'seldom' or 'never' (49.6 compared with 51.7 WEMWBS mean scores).

- Mental wellbeing was significantly higher for those who agreed that their colleagues provided support than for those who disagreed (51.5 compared to 47.3 mean WEMWBS score).

The percentage of adults who describe their job as very/extremely stressful has remained stable

14% in 2009

16% in 2017

Mental Wellbeing was lowest among those who described their jobs as very/extremely stressful

49.1 Very stressful/ Extremely stressful

50.3 Moderately stressful

51.5 Not at all stressful/ Mildly stressful (mean WEMWBS score)

Older adults were more likely to believe most people in their local area could be trusted

16-24	25-34	35-44	45-54	55-64	65-74	75+
41%	45%	60%	65%	69%	71%	76%

- Adults who believed that 'most people can be trusted' had a significantly higher WEMWBS mean score than those who believed that you 'can't be too careful in dealing with people' (51.9 compared with 47.6).

- Mean WEMWBS scores increased with the number of people that adults reported they could turn to for support in a crisis (mean WEMWBS score for those who had 15 people or more they could turn to was 52.2, compared with 48.3 for those who reported to have between 1 and 5 people).

Women were more likely than men to contact friends, relatives or neighbours outside the household almost everyday

79%

60%

67
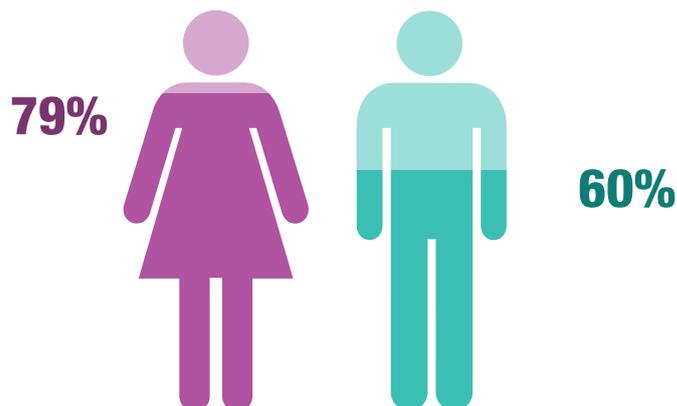
2 MENTAL HEALTH AND WELLBEING

Isla Dougall

2.1 INTRODUCTION

Mental health is a major determinant of overall health which has increasing international recognition[1,2]. Mental wellbeing is defined by the World Health Organization as a state of well-being in which every individual realises their own potential, can cope with the stresses of life, can work productively, and is able to make a contribution to their community. So, it is much more than simply the absence of mental health problems such as anxiety or depression. Mental wellbeing is an important indicator of quality of life. Positive mental wellbeing encourages healthier lifestyles, better physical health and improved recovery from illness, better social relationships, and higher educational attainment[3].

Poor mental health, or mental disorder, has a considerable impact on individuals, their families and the wider community[4]. People with mental disorders have disproportionately higher disability and mortality than the general population; people with severe and enduring mental illness can die 15-20 years earlier than they might otherwise do[5]. Depression is the leading cause of disability in the world with an estimated 300 million people affected, representing an increase of more than 18% between 2005 and 2015[6]. Depression is ranked as the single largest contributor to non-fatal health loss globally, accounting for 7.5% of all years lived with disability. It is estimated that 4.4% of the global population experience depression, and 3.6% experience anxiety. Globally, both depression and anxiety are more prevalent among women than men. However, rates of suicide remain consistently higher for men than for women around the world[7].

Mental disorders often co-exist with other diseases, including cancers and cardiovascular disease[8], and many of the risk factors covered in this report, such as obesity, excessive alcohol consumption, and low levels of physical activity, are common to both mental disorders and other non-communicable diseases, with outcomes being critically interdependent. Mental health is strongly associated with both poverty and social exclusion[9] and as a result it is a key indicator of health inequalities in the population[10].

Improving the mental health and wellbeing of the Scottish population remains a major public health challenge with one in three people estimated to be affected by mental illness in Scotland in any one year[11]. This chapter examines adult mental health and wellbeing in Scotland.

2.1.1 Policy background

The Scottish Government is now in the second year of delivering the 10 year **Mental Health Strategy: 2017-2027**[12]. The strategy is one of many measures to help create a **Fairer Scotland**[13]. The guiding ambition for the strategy is to prevent and treat mental health problems with the same commitment, passion and drive as is given to physical health problems. Failing to recognise, prioritise and treat mental health problems costs the economy, and harms individuals and communities.

As a result, the strategy focusses on prevention, early intervention and physical wellbeing, equal access to safe and effective treatment and accessible services. The strategy works to ensure protection and promotion of rights, better information use and planning. The importance of improving measurement of outcomes in mental health is emphasised, to include not just data on service activity but also on effect and the experience for people.

The strategy contains 40 initial actions to better join up services and to ensure that those who need help, only need to ask once. Underpinning these actions is a commitment to tackle mental health inequalities and embed a human-rights based approach across services with high aspirations for service users. The strategy aims to ensure that people in the most marginalised of situations are prioritised in achieving health.

There is also emphasis on improving support and services for children and young people, including those who come into contact with the criminal justice system. Mental health is also a key theme of Scotland's Year of Young People, 2018. Recently, there has been increased national policy focus on the link between adverse childhood experiences including abuse, neglect and poor parenting and an increased risk of mental health problems in early adulthood[14,15]. Reducing adverse childhood experiences is now a policy priority for the Scottish Government[16].

One of the Scottish Government's National Outcomes is the overall strategic objective for health: We are healthy and active[17]. This is supported by a number of National Indicators including **'mental wellbeing'**[18] which are monitored using data from the Scottish Health Survey (SHeS). The 15 year, on average, premature mortality in people with severe and enduring mental illness[19] has a major impact on other National Indicators; on '**premature mortality'** and **'healthy life expectancy'**. Scotland also has a set of national, sustainable mental health indicators for adults and children, covering both outcomes and contextual factors that confer increased risks of, or protection from, poor mental health outcomes[20]. SHeS is the data source for 28 of the 54 indicators for adults[21] and over 20 of the indicators for children[22].

2.1.2   Reporting on mental wellbeing in the Scottish Health Survey (SHeS)

This chapter updates trends in mental health and wellbeing for adults including data on WEMWEBS, GHQ-12, CIS-R anxiety and depression scores as well data on attempted suicide and self-harm, stress at work, and social capital. Figures are also reported by age, sex and area deprivation.

The area deprivation data are presented in Scottish Index of Multiple Deprivation (SIMD) quintiles. To ensure that the comparisons presented are not confounded by the different age profiles of the quintiles, the data have been age-standardised. Readers should refer to the Glossary at

the end of this Volume for a detailed description of both SIMD and age-standardisation.

Supplementary tables on mental wellbeing are also published on the Scottish Health Survey website[23].

2.2 METHODS AND DEFINITIONS

2.2.1 Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)

Wellbeing is measured using the WEMWBS questionnaire. It has 14 items designed to assess: positive affect (optimism, cheerfulness, relaxation) and satisfying interpersonal relationships and positive functioning (energy, clear thinking, self-acceptance, personal development, mastery and autonomy)[24]. The scale uses positively worded statements with a five-item scale ranging from '1 - none of the time' to '5 - all of the time'. The lowest score possible is therefore 14 and the highest score possible is 70; the tables present mean scores.

The scale was not designed to identify individuals with exceptionally high or low levels of positive mental health so cut off points have not been developed[25]. The scale was designed for use in English speaking populations, however in a very small number of cases the questions were translated to enable the participation of people who did not speak English[26].

WEMWBS is used to monitor the National Indicator 'mental wellbeing'[27] and the mean score for parents of children aged 15 years and under on WEMWBS is included in the mental health indicator set for children[28].

2.2.2 General Health Questionnaire 12 (GHQ 12)

GHQ-12[29] is a widely used standard measure of mental distress and mental ill-health consisting of 12 questions on concentration abilities, sleeping patterns, self-esteem, stress, despair, depression, and confidence in the previous few weeks. Responses to each of the GHQ-12 items are scored, with one point allocated each time a particular feeling or type of behaviour is reported to have been experienced 'more than usual' or 'much more than usual' over the previous few weeks.

These scores are combined to create an overall score of between zero and twelve. A score of four or more (referred to as a high GHQ-12 score) has been used here to indicate the presence of a possible psychiatric disorder. A score of zero on the GHQ-12 questionnaire can, in contrast, be considered to be an indicator of psychological wellbeing. GHQ-12 measures deviations from people's usual functioning in the previous few weeks and therefore cannot be used to detect chronic conditions.

2.2.3 Depression and anxiety

Details on symptoms of depression and anxiety are collected via a standardised instrument, the Revised Clinical Interview Schedule (CIS-R). The CIS-R is a well-established tool for measuring the prevalence of mental disorders[30]. The complete CIS-R comprises 14 sections, each covering a type of mental health symptom and asks about presence of symptoms in the week preceding the interview. Prevalence of two of these mental illnesses - depression and anxiety - were introduced to the Scottish Health Survey in 2008. Given the potentially sensitive nature of these topics, they were included in the nurse interview part of the survey prior to 2012[31]. Since 2012 the questions have been included in the biological module, with participants completing the questions themselves on the interviewer laptop (CASI). The change in mode of data collection may have impacted response, and comparisons of 2016/2017 figures with pre-2012 figures should be interpreted with caution. There is a possibility that any observed changes in prevalence across this period may simply reflect the change in mode rather than any real change in the population.

2.2.4 Suicide attempts

In addition to being asked about symptoms of depression and anxiety, participants were also asked whether they had ever attempted to take their own life. The question was worded as follows:

Have you ever made an attempt to take your own life, by taking an overdose of tablets or in some other way?

Those who said yes were asked if this was in 'the last week, in the last year or at some other time?' Note that this question is likely to underestimate the prevalence of very recent attempts, as people might be less likely to agree to take part in a survey immediately after a traumatic life event such as this. Furthermore, suicide attempts will only be captured in a survey among people who do not succeed at their attempt.

Since 2012 these questions have been included in the biological module, with participants completing the questions themselves on the interviewer laptop (CASI). Prior to 2012 they were administered in the nurse interview, and any changes over time need to be interpreted with caution due to the change in mode.

2.2.5 Self-harm

Since 2008, participants have been asked whether they have ever self-harmed in any way but not with the intention of killing themselves. Those who said that they had self-harmed were also asked if this was in the last week, last year or at some other time. The percentage of adults who have self-harmed in the last year is one of the national mental health indicators for adults[32].

Since 2012 these questions have been included in the biological module, with participants completing the questions themselves on the interviewer laptop (CASI). Again, changes over time need to be interpreted in light of this change in the mode of data collection.

2.2.6 Stress at work

Every alternate year since 2009, the survey also included a series of questions on working life from the adult mental health indicators set[33]. As work is considered to be an important contextual factor associated with mental health, adults in paid employment or on a government training scheme were asked questions about their experience of stress at work, as well as their work/life balance, and working conditions.

2.2.7 Social Capital

In every alternate year since 2011, the survey has included questions about other important contextual factors for mental wellbeing: social capital and people's experience of discrimination and harassment. The rationale for including such measures is set out in detail in the adult mental health indicators report[34]. Social capital is a well-established concept within mental health literature and encompasses aspects of social connectedness via friend and kinship networks, trust in others, the ability to draw on support from others, as well as a sense of connectedness to places through involvement in the local community and the ability to influence local decisions.

2.3 WARWICK-EDINBURGH MENTAL WELLBEING SCALE (WEMWBS)

2.3.1 Trends in adult WEMWBS mean scores since 2008

In 2017, the WEMWBS mean score for adults was 49.8. Since 2008, WEMWBS mean scores for adults aged 16 and over have remained relatively stable with scores ranging between 49.7 and 50.0 over the trend period.

There was no significant difference between the WEMWBS mean scores of men and women (49.9 and 49.7 respectively) in 2017. Since 2008, for men, WEMWBS mean scores have fluctuated between 49.8 and 50.4 and for women they have fluctuated between 49.4 and 49.9.

Table 2.1

2.3.2 Adult WEMWBS mean scores in 2017, by age and sex

As in previous years, in 2017 WEMWBS mean scores varied significantly by age. Those aged 65-74 had the highest mental wellbeing with a mean score of 51.5, followed by those aged 25-34, and 75 and over (both 50.1). Mental wellbeing was lower in the youngest age category, and again in middle age with those aged 16-24, 35-44 and 45-54 having the lowest mean wellbeing scores (49.4, 49.3 and 48.9 respectively).

The patterns by age were similar for women and men.

Figure 2A
Adult WEMWBS mean score, 2017, by age and sex
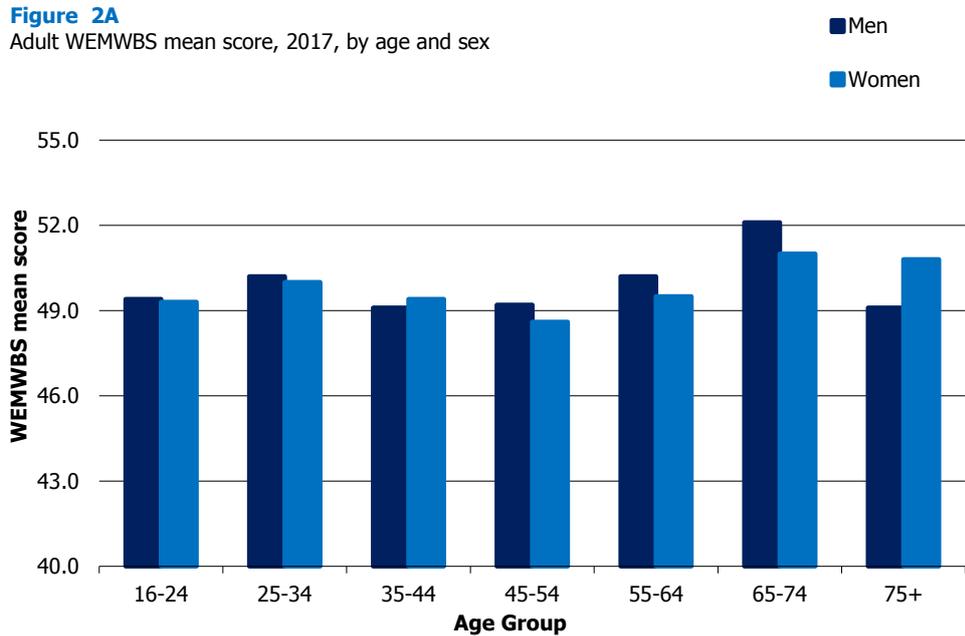
2.3.3 WEMWBS mean scores (age-standardised), in 2017, by area deprivation and sex

Age-standardised WEMWBS mean scores decreased as area deprivation increased. The mean age-standardised WEMWBS score for the least deprived areas (51.8) was significantly higher than the most deprived areas (47.5). A similar pattern was seen among both men (50.9 in the least deprived areas compared with 47.4 in the most deprived areas) and women (52.6 in the least deprived areas compared with 47.5 in the most deprived areas).

Figure 2B
WEMWBS mean scores (age-standardised), 2017, by area deprivation and sex
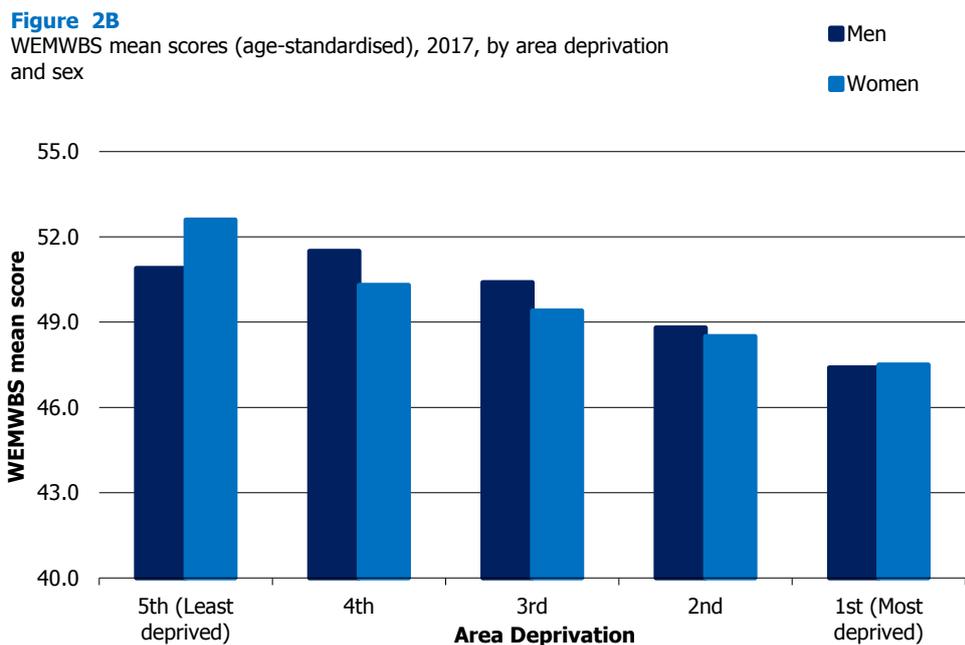
2.4 GENERAL HEALTH QUESTIONNAIRE 12

2.4.1 GHQ-12 scores in 2017, by age and sex

In 2017, 60% of adults had a GHQ-12 score of zero (indicating good psychological wellbeing with no symptoms of mental distress evident), 23% had a GHQ-12 score of one to three and 17% had a score of four or more (indicative of a possible psychiatric disorder).

Over 1 in 5 (22%) of those aged 16-24 had a GHQ-12 score of four or more, the highest amongst all age groups; this age group also had the lowest percentage of adults with a GHQ-12 score of zero (46%). In contrast, those aged 65-74 had the lowest percentage of GHQ-12 scores of four or more (12%) and the highest percentage of GHQ-12 scores of zero (70%).

Whilst GHQ-12 scores were very similar among men and women in younger age groups (16-24 and 25-34), in adults aged 35 and over the percentage of women with a GHQ-12 score of four or more was higher than men, however this was only statistically significant among those aged 65-74 (see Figure 2C).   **Figure 2C, Table 2.4**

Figure 2C
Percentage of adults with GHQ12 scores of 4 or more, 2017, by age and sex
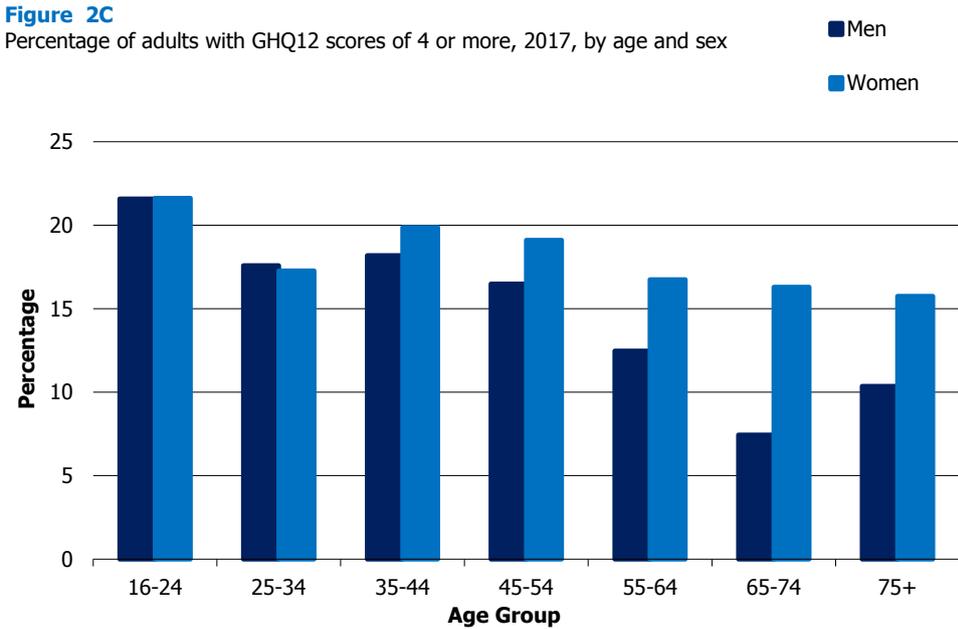
2.4.2 GHQ-12 scores in 2017, by area deprivation and sex

Prevalence of adults with a GHQ-12 score of four or more was significantly associated with area deprivation. In the most deprived areas, 24% of adults had a GHQ-12 score of four or more, compared to 14% in the least deprived areas. The lowest prevalence of GHQ-12 scores of four or more was found in the 4th quintile (12%) however this finding was driven by men. Figure 2D shows that there was an association between having a GHQ-12 score of four or more and deprivation for both men and women, but the patterns differed.   **Figure 2D, Table 2.5**

Figure 2D
Percentage of adults with a GHQ12 score of 4 or more, 2017, by area deprivation
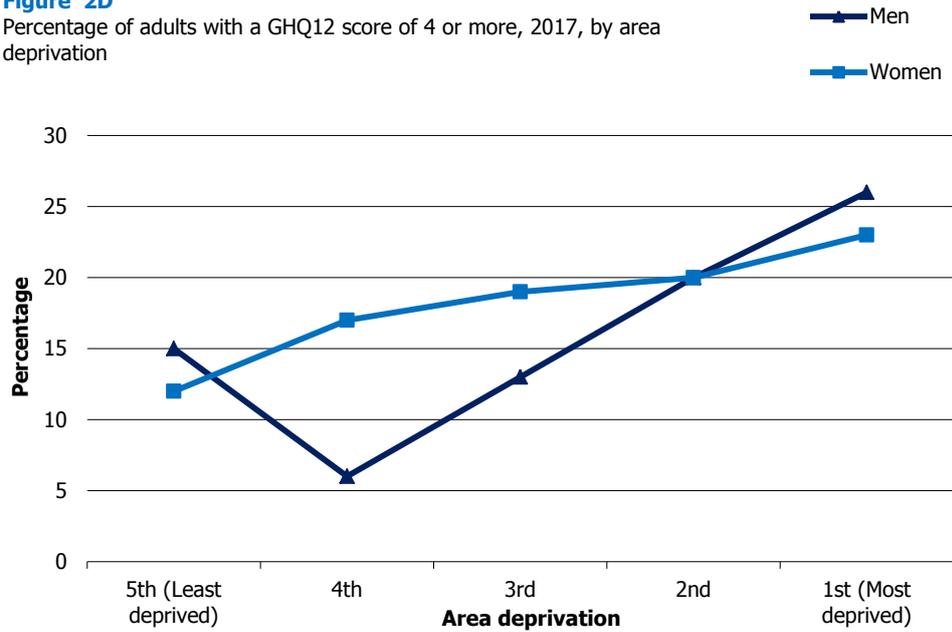
2.5 DEPRESSION AND ANXIETY

2.5.1 Trends in symptoms of depression since 2008/2009 combined, by sex

In 2016/2017, 11% of adults reported two or more symptoms of depression (indicating moderate to high severity); this is significantly higher than the 2010/2011 survey period (8%). There has been a steady and significant increase in the percentage of adults reporting two or more symptoms of depression since 2012/2013 (9%), when the change in mode was introduced from nurse interview to self-complete.

Slightly different patterns were found for both men and women. For men there was a significant increase from 7% in 2010/2011 to 11% in 2016/2017 however the increase from 2012/2013 to 2016/2017 was not significant for men. For women the increases observed were not statistically significant.   **Table 2.6**

2.5.2 Symptoms of depression in 2014-2017 combined, by age and sex

In 2014-2017, there was no significant association between the proportion of adults with two or more symptoms of depression and age group.

There were also no statistically significant differences in patterns by age for men and women separately.   **Table 2.7**

2.5.3 Symptoms of depression in 2014-2017 combined, by area deprivation

In 2014-2017, prevalence of two or more depressive symptoms increased as area deprivation increased. In the least deprived areas, 5% of adults reported two or more depressive symptoms while in the

most deprived areas 20% of adults did so. As shown in Figure 2E, this pattern was reflected in both men (6% compared with 22%) and women (4% compared with 18%). **Figure 2E, Table 2.8**

Figure 2E
Percentage of adults with 2 or more symptoms of depression, 2014-2017 combined, by area deprivation

■ Men
■ Women
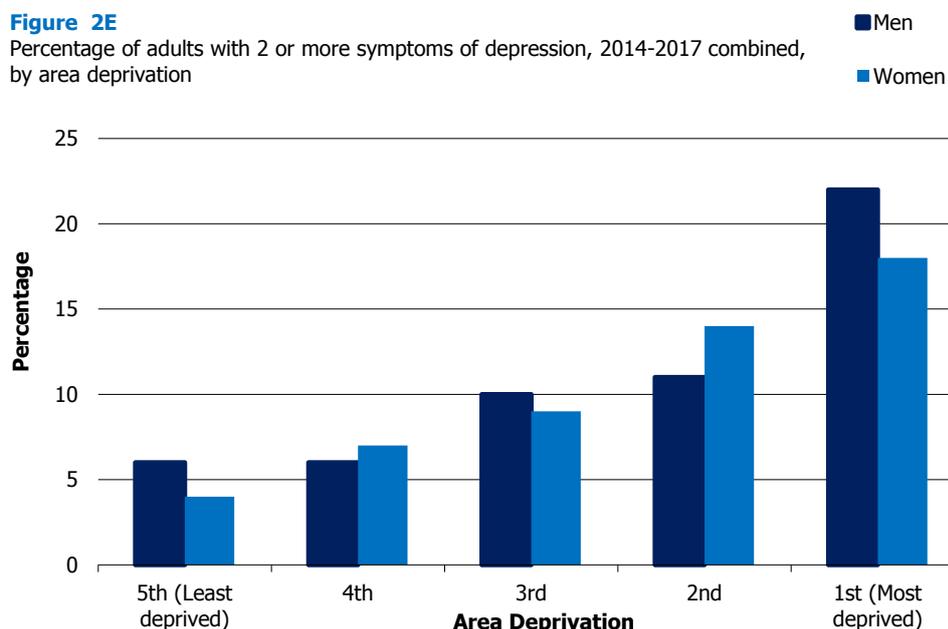
2.5.4 Trends in symptoms of anxiety since 2008/2009 combined, by sex

The percentage of adults with two or more symptoms of anxiety has generally been increasing over the trend period from 9% in 2008/2009 to 11% in 2016/2017. However there was been no significant change between 2014/2015 and 2016/17 (12% and 11% respectively).

The patterns over time differed for men and women. Among women the proportion with an anxiety score of two or more increased between 2010/2011 to 2014/2015 (from 10% to 15%) but did not significantly change in 2016/2017 (13%). There was no significant increase among men at the 95% level although there was a significant increase between 2008/2009 and 2014/2015 (from 7% to 9%) at the 90% level.

The proportion of women reporting two or more anxiety symptoms has been consistently higher (fluctuating between 10% and 15%) than men (fluctuating between 7% and 9%). The difference was most pronounced in 2014/2015, when 15% of women reported having two or more symptoms of anxiety, compared with 9% of men. **Figure 2F, Table 2.6**

Percentage of adults with 2 or more symptoms of anxiety since 2008/2009

■Men

■Women
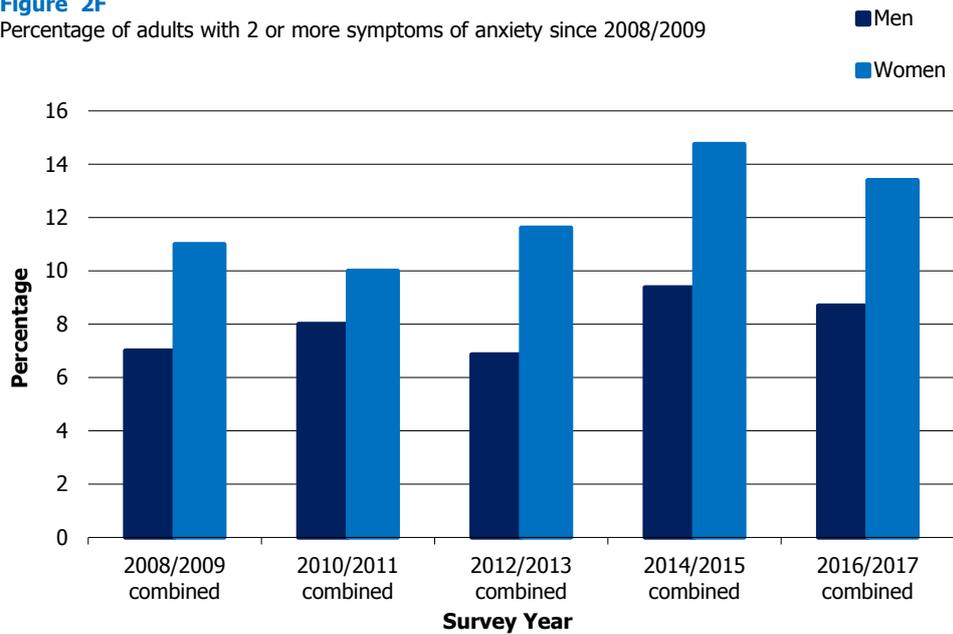
2.5.5 Symptoms of anxiety in 2014-2017 combined, by age and sex

In 2014-2017, the proportion of adults with two or more symptoms of anxiety was highest among those aged 16-24 (16%). This age group also had the lowest proportion of adults with no symptoms of anxiety (65%). The lowest proportion of adults with two or more symptoms of anxiety was found among those aged 75 and over (5%); 87% of adults in this age group had no symptoms.

For all adults, symptoms of anxiety were most prevalent among young people; however prevalence was almost as high among middle aged women. In young women aged 16-24, 19% experienced two or more symptoms of anxiety while 17-18% of women aged 45-64 reported this. This increase in prevalence of anxiety around middle age was far less pronounced in men (8-10% among men this age). The proportion of men with two or more symptoms of anxiety was highest in men aged 16-24 (14%). For both men and women, the lowest proportion was found in those aged 75 and over (3% and 6%, respectively).

Figure 2G, Table 2.7

Percentage of adults with 2 or more symptoms of anxiety, 2014-2017 combined, by age and sex

■Men

■Women
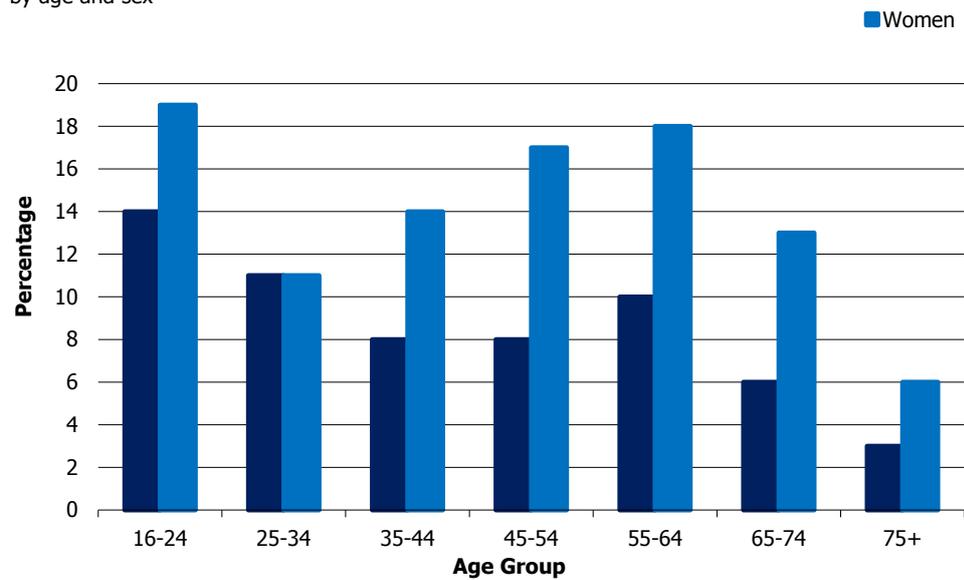
2.5.6 Symptoms of anxiety in 2014-2017 combined, by area deprivation

The prevalence of 2 or more symptoms of anxiety among adults was significantly lower in the least deprived areas (7%) than in the most deprived areas (17%).

Patterns were similar for men and women. For men the percentage reporting two or more anxiety symptoms across the deprivation quintiles increased from 6% in the least deprived quintile to 15% in the most deprived quintile. For women prevalence increased from 9% in the least deprived quintile to 19% among those living in the most deprived quintile.

Figure 2H, Table 2.8

Figure 2H

Percentage of adults with 2 or more symptoms of anxiety, 2014-2017 combined, by area deprivation

■Men

■Women
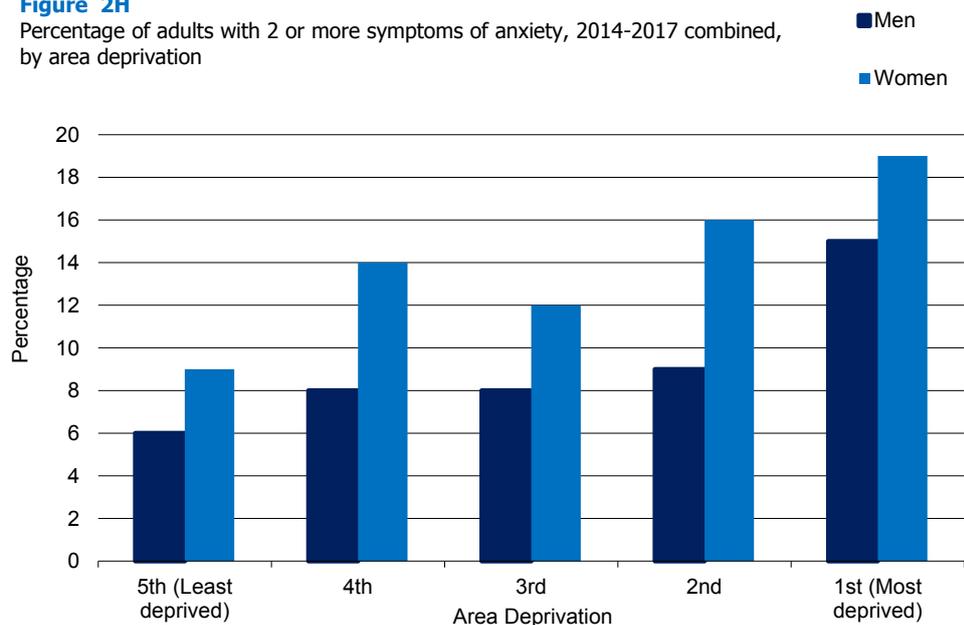
2.6 SUICIDE ATTEMPTS

2.6.1 Trends in attempted suicide since 2008/2009 combined, by sex

The proportion of adults that self-reported to have ever attempted suicide was 6% in 2016/2017, the same proportion as in 2014/2015 and significantly higher than in 2008/2009 (4%). The significant increase in the trend for all adults is driven by men, where a significant change was observed from 2008/09 to 2016/17 (3% to 5%) whilst no significant change was shown for women from 2008/09. These figures should be viewed with caution due to the change of data collection mode from 2012 onwards; it will be important to continue to monitor this emerging trend.

Although levels of attempted suicide were not significantly different for men and women in 2016/2017 (5% of men; 7% of women), it should be noted that levels of attempted suicide have been consistently higher in women since 2008/2009 and this was statistically significant between 2008/09 and 2012/2013.   **Table 2.6**

2.6.2 Attempted suicide in 2014-2017 combined, by age and sex

In 2014-2017, the proportion of people who had ever attempted suicide varied significantly by age but with no discernible pattern. Among those aged 16-24 and 25-34, 8-9% reported that they had attempted suicide; this decreased to 6% among those aged 35-44 and increased to 8% again for those aged 45-54 before steadily declining to 1% among those aged 75 and over.

The patterns of ever attempted suicide by age were significantly different for men and women. Among men prevalence of suicide attempts increased from 4% among those aged 16-24 to the highest level for men, 9%, among those aged 25-34. Prevalence then decreased to 5% among those aged 35-44 before increasing again to 8% among those aged 45-54 and declining steadily from age 55-64 (4%) to less than 0.5% among those aged 75 and over. For women suicide attempts were highest amongst those aged 16-24 (11%), declining among those aged 25-34 (8%) and fluctuating at this level (6-8%) to age 55-64 before declining to 4% among those aged 65-74 and 2% among those aged 75 and over.   **Table 2.7**

2.6.3 Attempted suicide in 2014-2017 combined, by area deprivation

The proportion of adults that had attempted suicide was significantly higher among those living in the most deprived areas (12%), than in the least deprived areas (4%). This pattern was reflected for both men (11% to 4%) and women (14% to 4%).   **Table 2.8**

2.7 SELF-HARM

2.7.1 Trends in self-reported self-harm since 2008/2009 combined, by sex

Following an increase in the percentage of adults who had self-harmed at some point in their lives from 2008/09 (3%) to 2014/2015 (7%), prevalence remained at a similar level in 2016/17 (6%). This pattern was reflected in both men and women. For men, rates of self-harm had significantly increased from 2% in 2010/2011 to 6% in 2014/2015. For women, rates had significantly increased from 3% in 2010/2011 to 9% in 2014/2015. The proportions of men and women that had self-harmed in 2016/17 were not significantly different to those found in 2014/2015.

Table 2.6

2.7.2 Self-harm in 2014-2017 combined, by age and sex

In 2014-2017, younger people were significantly more likely to have self-harmed than older people (decreasing from 21% among those aged 16-24 to less than 0.5% among those aged 75 and over). The highest prevalence was among those aged 16-24 for both men (19%) and women (24%). Similarly, the lowest proportion was among those aged 75 and over for both men and women (both less than 0.5%). Among all adults, women were more likely to self-harm than men (8% and 6% respectively). **Table 2.7**

2.7.3 Self-harm in 2014-2017 combined, by area deprivation

The proportion of all adults reporting having self-harmed at some point in their lives varied by area deprivation. Those in the most deprived quintile were most likely to have self-harmed (10%) and those in the 3rd quintile were least likely (4%). This pattern was true for both men and women, with prevalence steadily increasing between the 3rd and most deprived quintile (3% to 7% for men, 4% to 13% for women). Prevalence also increased between the 3rd and least deprived quintile (3% to 7% for men, 4% to 6% for women). **Figure 2I, Table 2.8**

Figure 2I
Percentage of adults that have deliberately self-harmed, 2014-2017 combined, by area deprivation

■ Men
■ Women
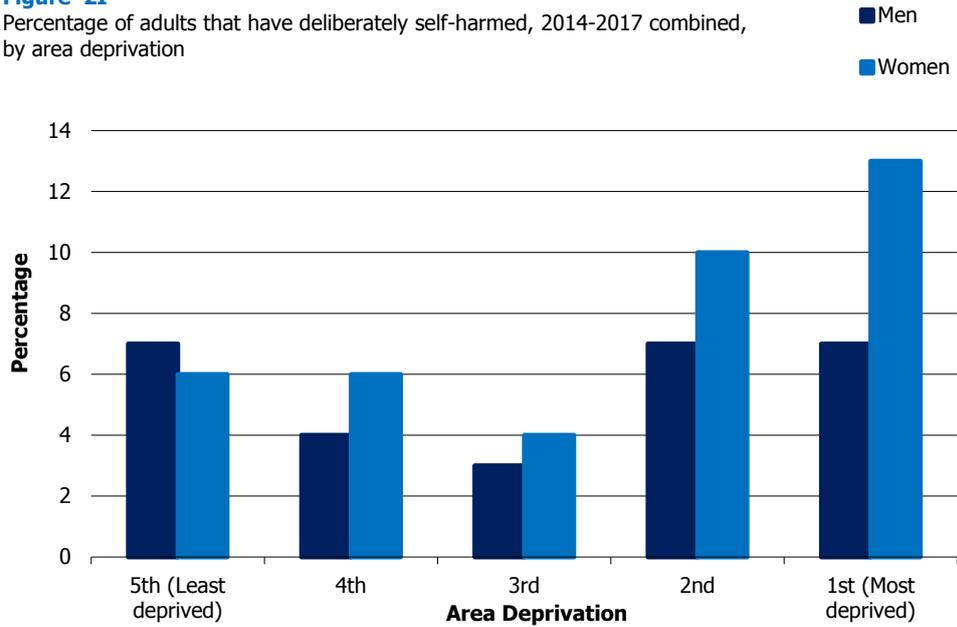
2.8 STRESS AT WORK

2.8.1 Stress at work, 2009 to 2017

The percentage of adults reporting that their jobs were 'very' or 'extremely stressful' has not changed significantly since 2009 (14% in 2009, 16% in 2017). There were also no significant changes in the figures for women (16% in 2009, 15% in 2017) and similarly the difference for men between 2009 (13%) and 2017 (17%) was not significant.

In 2017, 19% of adults described their job as 'not at all stressful', around a third of adults reported that their job was mildly stressful (33%) and around a third reported that their job was moderately stressful (32%). These figures have remained broadly similar since the start of the data series in 2009.   **Table 2.9**

2.9 WEMWBS MEAN SCORE, 2015/2017 COMBINED, BY JOB QUALITY AND WORK-LIFE BALANCE

2.9.1 Job demands

In 2015/2017, adults were asked whether they had 'unrealistic time pressures at work'. Those who reported that this happened 'always' or 'often' had significantly lower WEMWBS mean scores than those that reported it to happen 'seldom' or 'never' (49.6 compared with 51.7). This pattern was evident among both men (49.5 compared with 52.4) and women (49.7 compared with 51.1).   **Table 2.10**

2.9.2 Autonomy

Adults were asked whether they had a choice in deciding how they do their work. Those that reported they 'seldom' or 'never' had a choice had a significantly lower WEMWBS mean score than those who reported they 'always' or 'often' had a choice (49.5 compared with 51.7). This pattern was reflected in both men (48.6 compared with 52.0) and women (50.2 compared with 51.3).   **Table 2.10**

2.9.3 Social support

To measure levels of social support in the workplace, adults were asked whether their line manager was encouraging and whether their colleagues were supportive. WEMWBS mean scores were significantly higher for those who agreed their line manager provided encouragement (51.5) compared with those who disagreed (48.2). This pattern was similar for both men (51.7 compared with 47.5) and women (51.4 compared with 48.7).

WEMWBS mean scores were also significantly higher for those who agreed that their colleagues provided support (51.5) compared with those who disagreed (47.3). Whilst this pattern was similar for both men and women, the pattern was more pronounced in men (51.6 compared with 46.3; women, 51.3 compared with 48.3). It is worth nothing however that very few people reported that colleagues did not provide support, and so while this association was significant it should be interpreted with caution.   **Table 2.10**

2.9.4 Self-perceived work-related stress

The WEMWBS mean score was significantly lower for those who described their job as 'very' or 'extremely' stressful (48.4) compared with those who described their job as 'not at all' or 'mildly' stressful (51.8). This was true for both men (47.8 compared with 52.1) and women (49.1 compared with 51.5).   **Table 2.10**

2.9.5 Satisfaction with work-life balance

Satisfaction with work-life balance was positively associated with wellbeing in that WEMWBS mean scores were significantly higher for those with above average work-life balance (52.9) compared with those with below average work-life balance (49.1). This relationship was reflected in both men (53.4 compared with 49.2) and women (52.5 compared with 48.9).   **Table 2.10**

2.10 SOCIAL CAPITAL, 2015/2017 COMBINED, BY AGE AND SEX

2.10.1 Trust

When asked about general trust in others, half of all adults (50%) thought that 'most people can be trusted', 43% thought that you 'can't be too careful in dealing with people' and 7% said that 'it depends on people circumstances'.

The proportion of adults that believed most people could be trusted varied by age with the largest proportion of people that believed most people could be trusted among those aged 75 and over (57%) and the smallest among those aged 25-34 (44%). This pattern was reflected in both men and women.

Of all adults, 60% believed that most people in their local area could be trusted; proportions increased with age. Among those aged 16-24, 41% believed most people in their local area could be trusted, this increased steadily through the age groups to 76% of those aged 75 and above.

Table 2.11

2.10.2 Local area involvement and influence

Overall, 28% of adults felt involved in their local community at least 'a fair amount' with significantly more women than men feeling this way (31% of women compared with 24% of men).

The proportion of adults who felt involved in their local community significantly increased with age. Those reporting to feel 'a great deal' involved increased from 2% among those aged 16-24, to 7% among those aged 65 and over. A similar pattern was found among those that reported to be involved 'a fair amount'; 12% among those aged 16-24, increasing to 29% among those aged 75 and over. Overall similar patterns were found for men and women, however there was a significant difference between men and women in the pattern by age for 'a great deal' the largest proportion of men reporting to be involved 'a great deal' was among those aged 65-74 (9%) whilst for women it was among those aged 75 and over (9%).

The proportion of adults that believed they could influence decisions affecting their local area was lowest among younger age groups. Among those aged 16-34, 16% believed they could influence these decisions. This increased to 27% among those aged 35-44, and then decreased with age to 21% for those aged 75 and over. Similar patterns were found for men and women.

Table 2.11

2.10.3 Social support

Although the majority of adults contacted friends, family or relatives out with the household most days (70%), this was more common among younger people. Among those aged 16-24, 83% had contacted friends out with the household almost every day compared with 62% of those aged over 75. A significantly greater proportion of women contacted family or friends almost every day (79%) compared with men (60%). Just 7% of adults reported to contact family or friends out with the household once or twice a month or less. This proportion was much greater for men (11%) than for women (3%).

The majority of adults had between 1 and 10 people they could turn to (47% reported 1-5 people; 37% reported 6-10 people). A very small

proportion of adults reported that they had nobody that they could turn to for support in a crisis (1%). **Table 2.11**

2.11 WEMWBS MEAN SCORE, 2015/2017 COMBINED, BY SOCIAL CAPITAL AND SEX

2.11.1 Trust

Adults who believed that 'most people can be trusted' had a significantly higher WEMWBS mean score than those who believed that you 'can't be too careful in dealing with people' (51.9 compared with 47.6).

Similarly, adults with greater trust in their local community also had higher WEMWBS scores than those with lower trust. The mean WEMWBS score for those who believed that 'most people' could be trusted was 51.2, compared with 43.6 for those who believed 'no one' in their local community could be trusted.

Similar patterns were found for both men and women. **Table 2.12**

2.11.2 Local area

Mean WEMWBS scores increased as people felt more involved in their local communities. The mean WEMWBS score for those who were involved 'a great deal' was 53.2, compared with 47.6 for those who were 'not [involved] at all'.

Similarly, the more people believed they could influence decisions affecting their local area, the higher their mean WEMWBS score (48.3 to 51.9). A similar pattern was found for both men (48.5 to 52.0) and women (48.2 to 51.8). **Table 2.12**

2.11.3 Social support

Adults that contacted friends, family or relatives frequently, had higher mean WEMWBS scores than those who did not. The mean WEMWBS score for adults who contacted family or friends most days was 50.5, compared with 45.2 for those that reported to contact them less than once a month or never.

Mean WEMWBS scores increased with the number of people that respondents reported they could have turned to in a crisis. The mean WEMWBS score for those who had 15 people or more they could turn to was 52.2, compared with 48.3 for those who reported to have between 1 and 5 people. This pattern was similar for both men (51.9 to 48.6) and women (52.5 to 48.0). **Table 2.12**

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[21] *Scotland's Mental Health: Adults 2012*. Edinburgh: NHS Health Scotland, 2012. Available from: www.healthscotland.com/documents/6123.aspx

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[23] See: www.gov.scot/scottishhealthsurvey

[24] Further information about WEMWBS is available here: www.healthscotland.com/scotlands-health/population/Measuring-positive-mental-health.aspx

[25] Stewart-Brown, S and Janmohamed, K (2008). *Warwick-Edinburgh Mental Well-being Scale (WEMWBS). User Guide Version 1*. Warwick and Edinburgh: University of Warwick and NHS Health Scotland. Available from: http://www.healthscotland.com/documents/2702.aspx

[26] The translation was carried out solely to ensure that speakers of other languages were not excluded from the Scottish Health Survey. There were insufficient numbers of non-English speaking people in the sample to enable comparisons of their health with the rest of the population. As the primary intention was to prevent the exclusion of people due to language barriers, the translated WEMWBS questions were not subject to the full extent of validation that would need to take place if the questionnaire was being used to assess wellbeing in a whole population of non-English speakers. It is therefore possible that the translated WEMWBS scale (and other questions in the survey) is not directly comparable to the English version. However, the number of interviews that used translated materials was judged to be too small to affect the national estimates presented here so all cases have been included in the analysis.

[27] See: http://nationalperformance.gov.scot/

[28] NHS Health Scotland (2012) *Establishing a core set of national, sustainable mental health indicators for children and young people in Scotland: Final Report*. Available from: http://www.healthscotland.com/uploads/documents/18753-C&YP%20Mental%20Health%20Indicators%20FINAL%20Report.pdf

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[31] The nurse interview is conducted with one adult at a time, whereas the main interview can be conducted concurrently with up to four household members present. It was therefore easier to ensure that these questions could be answered in confidence. Nurses were also thought to be better placed to handle very sensitive topics such as these than interviewers conducting a general health survey who would have required additional specialist briefing. A leaflet with various help lines was handed to all participants in the nurse visit. From 2012, these questions are included in the biological module of the survey, conducted by specially trained interviewers, and will be completed by participants using a self-completion computer aided questionnaire.

[32] See: www.healthscotland.com/scotlands-health/population/mental-health-indicators.aspx

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Table list

Table 2.1 Adult WEMWBS mean scores, 2008 to 2017

WEMWBS scores[a]	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Men										
Mean	50.2	49.9	50.2	50.2	50.4	50.3	50.1	49.9	49.8	49.9
SE of the mean	0.20	0.16	0.19	0.19	0.24	0.25	0.25	0.25	0.25	0.28
Standard deviation	8.55	8.02	8.37	8.35	8.34	8.56	8.49	8.40	8.44	8.58
Women										
Mean	49.7	49.7	49.6	49.7	49.4	49.7	49.9	49.9	49.8	49.7
SE of the mean	0.16	0.16	0.17	0.17	0.22	0.21	0.22	0.22	0.24	0.25
Standard deviation	8.48	8.51	8.67	8.37	8.63	8.72	8.47	8.69	8.77	8.83
All adults										
Mean	50.0	49.7	49.9	49.9	49.9	50.0	50.0	49.9	49.8	49.8
SE of the mean	0.14	0.12	0.14	0.14	0.18	0.17	0.18	0.19	0.18	0.20
Standard deviation	8.52	8.28	8.54	8.36	8.50	8.65	8.48	8.55	8.61	8.71
Bases (weighted):										
Men	*2785*	*3282*	*3171*	*3191*	*2063*	*2110*	*2001*	*2117*	*1859*	*1550*
Women	*3026*	*3586*	*3478*	*3540*	*2256*	*2351*	*2204*	*2326*	*2023*	*1641*
All adults	*5812*	*6868*	*6649*	*6731*	*4319*	*4461*	*4205*	*4443*	*3882*	*3191*
Bases (unweighted):										
Men	*2539*	*2994*	*2842*	*2900*	*1909*	*1938*	*1851*	*1961*	*1708*	*1380*
Women	*3248*	*3886*	*3805*	*3845*	*2431*	*2561*	*2369*	*2452*	*2192*	*1814*
All adults	*5787*	*6880*	*6647*	*6745*	*4340*	*4499*	*4220*	*4413*	*3900*	*3194*

a WEMWBS scores range from 14 to 70. Higher scores indicate greater wellbeing. Mean WEMWBS score is part of the national mental health indicator set for adults

Table 2.2 Adult WEMWBS mean scores, 2017, by age and sex

WEMWBS scores[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Men								
Mean	49.4	50.2	49.1	49.2	50.2	52.1	49.1	49.9
SE of the mean	1.17	0.63	0.67	0.72	0.53	0.50	0.73	0.28
Standard deviation	8.85	8.48	8.30	8.74	8.57	7.67	9.34	8.58
Women								
Mean	49.3	50.0	49.4	48.6	49.5	51.0	50.8	49.7
SE of the mean	0.85	0.55	0.55	0.51	0.57	0.58	0.63	0.25
Standard deviation	8.64	8.93	8.60	8.93	9.24	8.93	7.99	8.83
All Adults								
Mean	49.4	50.1	49.3	48.9	49.9	51.5	50.1	49.8
SE of the mean	0.71	0.45	0.45	0.44	0.41	0.41	0.51	0.20
Standard deviation	8.74	8.70	8.45	8.83	8.91	8.37	8.61	8.71
Bases (weighted):								
Men	*222*	*263*	*228*	*283*	*245*	*192*	*117*	*1550*
Women	*192*	*268*	*247*	*307*	*251*	*217*	*159*	*1641*
All adults	*414*	*531*	*474*	*590*	*497*	*409*	*276*	*3191*
Bases (unweighted):								
Men	*121*	*195*	*171*	*212*	*284*	*246*	*151*	*1380*
Women	*133*	*255*	*282*	*324*	*328*	*304*	*188*	*1814*
All adults	*254*	*450*	*453*	*536*	*612*	*550*	*339*	*3194*

a WEMWBS scores range from 14 to 70. Higher scores indicate greater wellbeing. Mean WEMWBS score is part of the national mental health indicator set for adults

Table 2.3 WEMWBS mean scores (age-standardised), 2017, by area deprivation and sex

Aged 16 and over   *2017*

WEMWBS scores[a]	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
Men					
Mean	50.9	51.5	50.4	48.8	47.4
SE of the mean	0.54	0.60	0.58	0.56	0.78
Standard deviation	7.15	8.19	8.54	8.76	9.61
Women					
Mean	52.6	50.3	49.4	48.5	47.5
SE of the mean	0.44	0.44	0.51	0.59	0.65
Standard deviation	7.31	8.39	8.39	9.47	9.73
All adults					
Mean	51.8	50.9	49.9	48.6	47.5
SE of the mean	0.34	0.37	0.45	0.46	0.52
Standard deviation	7.27	8.30	8.47	9.12	9.67
Bases (weighted):					
Men	*345*	*328*	*318*	*303*	*252*
Women	*350*	*324*	*346*	*319*	*297*
All adults	*695*	*652*	*664*	*622*	*549*
Bases (unweighted):					
Men	*290*	*322*	*306*	*254*	*208*
Women	*362*	*403*	*414*	*337*	*298*
All adults	*652*	*725*	*720*	*591*	*506*

a WEMWBS scores range from 14 to 70. Higher scores indicate greater wellbeing.
Mean WEMWBS score is part of the national mental health indicator set for adults

Table 2.4   GHQ12 scores, 2017, by age and sex

Aged 16 and over   *2017*

GHQ12 score[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
0	42	54	58	68	70	75	67	62
1-3	36	28	24	16	17	18	22	23
4 or more	22	18	18	16	12	7	10	15
Women								
0	50	55	54	56	67	67	59	58
1-3	28	27	26	24	17	17	26	24
4 or more	22	17	20	19	17	16	16	18
All Adults								
0	46	55	56	62	68	70	62	60
1-3	32	28	25	20	17	18	24	23
4 or more	22	17	19	18	15	12	13	17
Bases (weighted):								
Men	*226*	*266*	*224*	*285*	*251*	*191*	*121*	*1564*
Women	*202*	*269*	*254*	*309*	*253*	*216*	*165*	*1668*
All adults	*428*	*535*	*479*	*593*	*503*	*408*	*286*	*3232*
Bases (unweighted):								
Men	*123*	*198*	*169*	*213*	*291*	*246*	*158*	*1398*
Women	*138*	*256*	*289*	*326*	*330*	*305*	*193*	*1837*
All adults	*261*	*454*	*458*	*539*	*621*	*551*	*351*	*3235*

a GHQ 12 scores range from 0 to 12. Scores of 4 or more indicate low wellbeing / possible psychiatric disorder

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Table 2.5 GHQ12 scores (age-standardised), 2017, by area deprivation and sex

GHQ12 score[a]	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
0	60	72	67	61	45
1-3	25	22	21	19	29
4 or more	15	6	13	20	26
Women					
0	65	58	58	56	54
1-3	23	25	22	24	24
4 or more	12	17	19	20	23
All Adults					
0	63	65	62	59	50
1-3	24	23	22	21	26
4 or more	14	12	16	20	24
Bases (weighted):					
Men	*349*	*332*	*318*	*311*	*253*
Women	*357*	*327*	*350*	*322*	*309*
All adults	*706*	*659*	*668*	*634*	*562*
Bases (unweighted):					
Men	*291*	*329*	*309*	*262*	*207*
Women	*368*	*404*	*419*	*340*	*306*
All adults	*659*	*733*	*728*	*602*	*513*

a GHQ 12 scores range from 0 to 12. Scores of 4 or more indicate low wellbeing / possible psychiatric disorder

Table 2.6 CIS-R anxiety and depression scores, attempted suicide and self-harm, 2008/2009 combined to 2016/2017 combined

Aged 16 and over   *2008/2009 combined - 2016/2017 combined*

Mental health problem	2008/2009 combined	2010/2011 combined	2012/2013 combined	2014/2015 combined	2016/2017 combined
	%	%	%	%	%
Men					
Depression symptom score					
0	89	89	84	81	81
1	4	4	7	9	8
2 or more symptoms[a]	7	7	9	10	11
Anxiety symptom score					
0	87	87	85	80	79
1	6	5	8	10	12
2 or more symptoms[b]	7	8	7	9	9
Attempted suicide					
No	97	96	97	95	95
Yes	3	4	3	5	5
Self-harm					
No	98	98	96	94	94
Yes	2	2	4	6	6
Women					
Depression symptom score					
0	84	85	82	79	79
1	6	6	10	11	10
2 or more symptoms[a]	10	9	8	10	11
Anxiety symptom score					
0	78	81	74	71	71
1	11	9	14	14	15
2 or more symptoms[b]	11	10	12	15	13
Attempted suicide					
No	94	94	94	93	93
Yes	6	6	6	7	7
Self-harm					
No	96	97	94	91	93
Yes	4	3	6	9	7

Continued…

Table 2.6 - *Continued*

Mental health problem	2008/2009 combined	2010/2011 combined	2012/2013 combined	2014/2015 combined	2016/2017 combined
	%	%	%	%	%
All adults					
Depression symptom score[c]					
0	86	87	83	80	80
1	5	5	8	10	9
2 or more symptoms[a]	8	8	9	10	11
Anxiety symptom score[d]					
0	83	84	79	76	75
1	9	7	11	12	14
2 or more symptoms[b]	9	9	9	12	11
Attempted suicide					
No	96	95	95	94	94
Yes	4	5	5	6	6
Self-harm					
No	97	98	95	93	94
Yes	3	2	5	7	6
Bases (weighted):					
Men	*1066*	*972*	*1051*	*992*	*837*
Women	*1154*	*1059*	*1129*	*1069*	*907*
All adults	*2220*	*2031*	*2179*	*2061*	*1744*
Bases (unweighted):					
Men	*974*	*875*	*971*	*900*	*754*
Women	*1246*	*1155*	*1214*	*1177*	*1005*
All adults	*2220*	*2030*	*2185*	*2077*	*1759*

a Two or more symptoms indicate depression of moderate to high severity

b Two or more symptoms indicate anxiety of moderate to high severity

c Percentage of adults with a score of 2+ on depression section of CIS-R is part of the national mental health indicator set for adults

d Percentage of adults with a score of 2+ on anxiety section of CIS-R is part of the national mental health indicator set for adults

Table 2.7 CIS-R anxiety and depression symptom scores, attempted suicide and self-harm, 2014-2017 combined, by age and sex

Mental health problem	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Depression symptom score								
0	75	79	81	78	82	85	90	81
1	13	12	8	11	6	7	3	9
2 or more symptoms[a]	12	10	12	11	12	8	7	10
Anxiety symptom score								
0	71	74	75	83	82	88	92	80
1	16	15	17	9	8	6	5	11
2 or more symptoms[b]	14	11	8	8	10	6	3	9
Attempted suicide								
No	96	91	95	92	96	99	100	95
Yes	4	9	5	8	4	1	-	5
Self-harm								
No	81	91	95	95	99	99	100	94
Yes	19	9	5	5	1	1	-	6
Women								
Depression symptom score								
0	71	79	82	76	79	85	86	79
1	15	12	10	11	10	7	5	10
2 or more symptoms[a]	14	9	8	14	11	8	9	10
Anxiety symptom score								
0	60	73	68	69	71	77	84	71
1	21	17	18	14	11	10	10	15
2 or more symptoms[b]	19	11	14	17	18	13	6	14
Attempted suicide								
No	89	92	94	92	92	96	98	93
Yes	11	8	6	8	8	4	2	7
Self-harm								
No	76	87	93	96	96	98	100	92
Yes	24	13	7	4	4	2	0	8

Continued…

Table 2.7 - *Continued*

Mental health problem	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
Depression symptom score[c]								
0	73	79	81	77	80	85	88	80
1	14	12	9	11	8	7	4	10
2 or more symptoms[a]	13	9	10	12	12	8	8	10
Anxiety symptom scored[d]								
0	65	73	72	76	77	82	87	75
1	18	16	18	11	10	8	8	13
2 or more symptoms[b]	16	11	11	13	14	9	5	12
Attempted suicide								
No	92	91	94	92	94	97	99	94
Yes	8	9	6	8	6	3	1	6
Self-harm								
No	79	89	94	96	97	99	100	93
Yes	21	11	6	4	3	1	0	7
Bases (weighted):								
Men	*246*	*305*	*281*	*335*	*288*	*235*	*146*	*1836*
Women	*247*	*322*	*290*	*368*	*308*	*254*	*189*	*1977*
All adults	*493*	*627*	*572*	*703*	*596*	*489*	*334*	*3813*
Bases (unweighted):								
Men	*146*	*219*	*234*	*281*	*297*	*301*	*176*	*1654*
Women	*186*	*315*	*344*	*380*	*381*	*359*	*217*	*2182*
All adults	*332*	*534*	*578*	*661*	*678*	*660*	*393*	*3836*

a Two or more symptoms indicate depression of moderate to high severity

b Two or more symptoms indicate anxiety of moderate to high severity

c Percentage of adults with a score of 2+ on depression section of CIS-R is part of the national mental health indicator set for adults

d Percentage of adults with a score of 2+ on anxiety section of CIS-R is part of the national mental health indicator set for adults

Table 2.8 CIS-R anxiety and depression scores, attempted suicide and self-harm (age-standardised), 2014-2017 combined, by area deprivation

Mental health problem	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
Depression symptom score					
0	87	84	82	80	69
1	7	10	8	9	9
2 or more symptoms[a]	6	6	10	11	22
Anxiety symptom score					
0	84	80	82	78	75
1	10	12	10	13	10
2 or more symptoms[b]	6	8	8	9	15
Attempted suicide					
No	96	97	97	95	89
Yes	4	3	3	5	11
Self-harm					
No	93	96	97	93	93
Yes	7	4	3	7	7
Women					
Depression symptom score					
0	87	84	81	77	69
1	8	10	10	10	13
2 or more symptoms[a]	4	7	9	14	18
Anxiety symptom score					
0	76	71	72	69	69
1	14	15	16	16	13
2 or more symptoms[b]	9	14	12	16	19
Attempted suicide					
No	96	96	95	91	86
Yes	4	4	5	9	14
Self-harm					
No	94	94	96	90	87
Yes	6	6	4	10	13

Table 2.8 - *Continued*

Mental health problem	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
All adults					
Depression symptom score[c]					
0	87	84	82	78	69
1	8	10	9	10	11
2 or more symptoms[a]	5	6	9	12	20
Anxiety symptom score[d]					
0	80	76	77	73	71
1	12	14	13	14	12
2 or more symptoms[b]	7	11	10	13	17
Attempted suicide					
No	96	96	96	93	88
Yes	4	4	4	7	12
Self-harm					
No	93	95	96	92	90
Yes	7	5	4	8	10
Bases (weighted):					
Men	*382*	*359*	*388*	*403*	*305*
Women	*368*	*369*	*437*	*413*	*388*
All adults	*750*	*728*	*825*	*816*	*693*
Bases (unweighted):					
Men	*317*	*377*	*385*	*311*	*264*
Women	*390*	*467*	*523*	*414*	*388*
All adults	*707*	*844*	*908*	*725*	*652*

a Two or more symptoms indicate depression of moderate to high severity

b Two or more symptoms indicate anxiety of moderate to high severity

c Percentage of adults with a score of 2+ on depression section of CIS-R is part of the national mental health indicator set for adults

d Percentage of adults with a score of 2+ on anxiety section of CIS-R is part of the national mental health indicator set for adults

Table 2.9 Stress at work, 2009 to 2017

Aged 16 and over in paid employment /
government training programme   *2009, 2011, 2013, 2015, 2017*

Stress at work	2009	2011	2013	2015	2017
	%	%	%	%	%
Men					
Not at all stressful	21	17	19	23	21
Mildly stressful	30	36	35	34	32
Moderately stressful	36	32	33	29	31
Very stressful	9	11	10	12	13
Extremely stressful	3	3	3	3	3
Very stressful /	*13*	*15*	*13*	*15*	*17*
Extremely stressful[a]					
Women					
Not at all stressful	16	19	18	17	16
Mildly stressful	34	32	35	33	35
Moderately stressful	34	35	32	36	34
Very stressful	12	12	13	12	12
Extremely stressful	4	2	2	3	2
Very stressful /	*16*	*14*	*15*	*14*	*15*
Extremely stressful[a]					
All adults					
Not at all stressful	19	18	18	20	19
Mildly stressful	32	34	35	33	33
Moderately stressful	35	33	32	32	32
Very stressful	11	12	11	12	13
Extremely stressful	4	3	3	3	3
Very stressful /	*14*	*15*	*14*	*15*	*16*
Extremely stressful[a]					
Bases (weighted):					
Men	*771*	*677*	*670*	*657*	*620*
Women	*673*	*647*	*630*	*652*	*592*
All adults	*1444*	*1324*	*1300*	*1309*	*1212*
Bases (unweighted):					
Men	*655*	*581*	*583*	*549*	*507*
Women	*702*	*674*	*677*	*604*	*622*
All adults	*1357*	*1255*	*1260*	*1153*	*1129*

a Percentage of adults who find their job very or extremely stressful is part of the
national mental health indicator set for adults

Table 2.10   WEMWBS mean score, 2015/2017 combined, by stress at work, work-life balance, job/workplace conditions and sex

Aged 16 and over in paid employment / government training programme   *2015/2017 combined*

Stress at work	WEMWBS Mean Score	WEMWBS SE	WEMWBS Standard Deviation	*Weighted Bases*	*Unweighted Bases*
Men					
I have unrealistic time pressures at work					
Always/Often	49.5	0.56	7.15	*282*	*229*
Sometimes	50.8	0.43	6.71	*374*	*297*
Seldom/Never	52.4	0.48	7.56	*468*	*403*
I have a choice in deciding how I do my work					
Always/Often	52.0	0.34	7.04	*763*	*631*
Sometimes	49.7	0.84	6.70	*201*	*160*
Seldom/Never	48.6	0.72	8.16	*160*	*139*
My line manager encourages me at work					
Tend to agree/ Strongly agree	51.7	0.39	7.22	*672*	*529*
Neutral	50.2	0.58	6.90	*200*	*168*
Tend to disagree/ Strongly disagree	47.5	0.74	7.13	*119*	*101*
I get the help and support I need from colleagues at work					
Tend to agree/ Strongly agree	51.6	0.32	7.17	*860*	*695*
Neutral	50.5	0.61	7.32	*187*	*166*
Tend to disagree/ Strongly disagree	46.3	0.94	6.46	*67*	*53*
In general, how do you find your job					
Not at all stressful/ Mildly stressful	52.1	0.34	6.93	*623*	*526*
Moderately stressful	50.9	0.62	7.78	*331*	*273*
Very stressful/ Extremely stressful	47.8	0.64	6.46	*170*	*131*
How satisfied with balance between time on paid work and time on other aspects of life					
Below average (0 - 6)	49.2	0.36	6.80	*462*	*380*
Average (7)	50.3	0.80	7.70	*210*	*167*
Above average (8-10)	53.4	0.40	6.94	*448*	*382*

Continued…

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Table 2.10 - Continued

Aged 16 and over in paid employment / government training programme   2015/2017 combined

Stress at work	WEMWBS Mean Score	WEMWBS SE	WEMWBS Standard Deviation	*Weighted Bases*	*Unweighted Bases*
Women					
I have unrealistic time pressures at work					
Always/Often	49.7	0.45	7.18	*290*	*282*
Sometimes	51.2	0.43	7.13	*316*	*325*
Seldom/Never	51.1	0.39	7.74	*498*	*484*
I have a choice in deciding how I do my work					
Always/Often	51.3	0.30	7.08	*712*	*721*
Sometimes	49.2	0.61	7.94	*222*	*217*
Seldom/Never	50.2	0.69	7.96	*169*	*153*
My line manager encourages me at work					
Tend to agree/ Strongly agree	51.4	0.31	7.16	*709*	*695*
Neutral	49.3	0.64	7.75	*179*	*177*
Tend to disagree/ Strongly disagree	48.7	0.72	7.79	*141*	*132*
I get the help and support I need from colleagues at work					
Tend to agree/ Strongly agree	51.3	0.28	7.17	*884*	*862*
Neutral	48.5	0.74	7.32	*140*	*149*
Tend to disagree/ Strongly disagree	48.3	0.95	6.46	*70*	*65*
In general, how do you find your job					
Not at all stressful/ Mildly stressful	51.5	0.34	7.41	*567*	*564*
Moderately stressful	50.3	0.45	7.47	*379*	*377*
Very stressful/ Extremely stressful	49.1	0.58	7.21	*158*	*150*
How satisfied with balance between time on paid work and time on other aspects of life					
Below average(0 - 6)	48.9	0.38	7.10	*486*	*470*
Average (7)	51.6	0.58	7.31	*189*	*195*
Above average (8-10)	52.5	0.39	7.43	*428*	*426*

Continued…

Table 2.10   - Continued

Aged 16 and over in paid employment / government training programme   2015/2017 combined

Stress at work	WEMWBS Mean Score	WEMWBS SE	WEMWBS Standard Deviation	Weighted Bases	Unweighted Bases
All adults					
I have unrealistic time pressures at work					
Always/Often	49.6	0.38	7.16	571	511
Sometimes	51.0	0.32	6.91	690	622
Seldom/Never	51.7	0.31	7.68	966	887
I have a choice in deciding how I do my work					
Always/Often	51.7	0.24	7.07	1475	1352
Sometimes	49.5	0.55	7.37	424	377
Seldom/Never	49.5	0.49	8.09	329	292
My line manager encourages me at work					
Tend to agree/ Strongly agree	51.5	0.26	7.19	1381	1224
Neutral	49.8	0.42	7.32	379	345
Tend to disagree/ Strongly disagree	48.2	0.55	7.50	260	233
I get the help and support I need from colleagues at work					
Tend to agree/ Strongly agree	51.5	0.23	7.18	1744	1557
Neutral	49.7	0.48	7.75	327	315
Tend to disagree/ Strongly disagree	47.3	0.63	7.16	137	118
In general, how do you find your job					
Not at all stressful/ Mildly stressful	51.8	0.25	7.16	1190	1090
Moderately stressful	50.6	0.39	7.62	710	650
Very stressful/ Extremely stressful	48.4	0.46	6.86	328	281
How satisfied with balance between time on paid work and time on other aspects of life					
Below average(0 - 6)	49.1	0.28	6.95	948	850
Average (7)	50.9	0.51	7.54	399	362
Above average (8-10)	52.9	0.30	7.20	876	808

Table 2.11 Social capital, 2015/2017 combined, by age and sex

Social capital	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
General trust in others								
Most people can be trusted	53	43	53	50	49	52	57	50
Can't be too careful in dealing with people	41	48	43	43	43	42	36	43
It depends on people/circumstance	6	9	4	7	9	6	7	7
Trust in the local neighbourhood								
Most people can be trusted	44	46	58	63	67	72	77	60
Some can be trusted	30	27	22	21	21	19	16	23
A few can be trusted	17	20	14	12	7	7	5	12
No-one can be trusted	8	6	3	4	4	2	1	4
Just moved here	1	2	3	1	1	0	1	1
How involved do you feel in the local community?								
A great deal	2	2	5	5	7	9	4	5
A fair amount	10	12	23	24	20	23	29	19
Not very much	40	52	45	41	46	46	42	45
Not at all	49	34	27	30	27	22	25	31
I can influence decisions affecting my local area								
Agree/strongly agree	17	15	22	22	22	24	22	20
Neutral	34	31	29	33	33	32	32	32
Disagree/strongly disagree	47	53	45	43	44	42	40	45
Don't know	2	2	3	2	1	3	6	2
How often do you contact friends, relatives or neighbours?								
Most days	77	64	57	51	59	56	51	60
Once or twice a week	17	26	34	35	28	32	39	30
Once or twice a month	2	5	4	7	8	8	3	6
Less than once a month	3	3	3	3	4	3	4	3
Never	1	2	3	2	1	1	3	2
How many people could you turn to for support in a crisis?								
0	-	-	1	2	2	1	1	1
1-5	43	54	44	49	51	46	50	48
6-10	42	33	38	38	31	36	32	36
11-14	3	4	4	3	6	5	6	4
15+	12	9	13	7	10	12	11	10

Table 2.11 - Continued

Social capital	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Women								
General trust in others								
Most people can be trusted	47	45	49	51	55	47	56	50
Can't be too careful in dealing with people	45	47	44	42	38	46	36	43
It depends on people/circumstance	8	9	7	7	7	7	8	7
Trust in the local neighbourhood								
Most people can be trusted	37	44	63	66	72	71	75	61
Some can be trusted	35	27	21	19	17	18	16	22
A few can be trusted	20	20	12	9	8	9	7	12
No-one can be trusted	4	5	3	5	1	2	1	3
Just moved here	3	5	1	1	2	1	2	2
How involved do you feel in the local community?								
A great deal	2	2	7	6	5	4	9	5
A fair amount	15	23	33	25	28	31	28	26
Not very much	38	45	42	44	44	44	46	43
Not at all	46	30	18	26	24	21	17	26
I can influence decisions affecting my local area								
Agree/strongly agree	15	18	31	24	23	20	21	22
Neutral	32	26	29	29	36	34	27	30
Disagree/strongly disagree	48	51	37	44	38	43	44	44
Don't know	5	5	2	3	4	3	8	4
How often do you contact friends, relatives or neighbours?								
Most days	89	86	79	75	76	77	70	79
Once or twice a week	9	12	19	20	21	19	25	18
Once or twice a month	-	2	1	4	1	3	3	2
Less than once a month	1	1	1	1	2	1	1	1
Never	1	-	0	0	0	-	1	0
How many people could you turn to for support in a crisis?								
0	0	0	1	1	0	0	1	1
1-5	47	42	45	42	43	43	59	45
6-10	40	41	38	42	37	37	30	38
11-14	2	2	2	4	6	5	4	4
15+	11	15	14	11	14	15	6	12

Table 2.11 - Continued

Aged 16 and over   *2015/2017 combined*

Social capital	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
General trust in others								
Most people can be trusted	50	44	51	51	52	50	57	50
Can't be too careful in dealing with people	43	47	44	42	40	44	36	43
It depends on people/circumstance	7	9	6	7	8	6	7	7
Trust in the local neighbourhood								
Most people can be trusted	41	45	60	65	69	71	76	60
Some can be trusted	33	27	22	20	19	18	16	22
A few can be trusted	19	20	13	10	8	8	6	12
No-one can be trusted	6	5	3	4	3	2	1	4
Just moved here	2	3	2	1	2	1	1	2
How involved do you feel in the local community?								
A great deal	2	2	6	6	6	7	7	5
A fair amount	12	17	28	24	24	27	29	23
Not very much	39	48	44	42	45	45	44	44
Not at all	47	32	22	28	25	21	20	28
I can influence decisions affecting my local area								
Agree/strongly agree	16	16	27	23	22	22	21	21
Neutral	33	28	29	31	34	33	29	31
Disagree/strongly disagree	48	52	41	44	41	42	42	44
Don't know	3	3	3	2	3	3	7	3
How often do you contact friends, relatives or neighbours?								
Most days	83	75	68	64	68	67	62	70
Once or twice a week	13	19	26	27	24	25	31	24
Once or twice a month	1	4	2	6	4	5	3	4
Less than once a month	2	2	2	2	3	2	2	2
Never	1	1	1	1	1	1	1	1
How many people could you turn to for support in a crisis?								
0	0	0	1	1	1	1	1	1
1-5	45	48	44	45	47	45	55	47
6-10	41	37	38	40	34	36	31	37
11-14	3	3	3	4	6	5	5	4
15+	11	12	13	9	12	13	8	11

Table 2.11 *- Continued*

Social capital	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	*282*	*343*	*312*	*376*	*329*	*258*	*168*	*2068*
Women	*275*	*359*	*332*	*404*	*348*	*284*	*233*	*2235*
All adults	*557*	*702*	*644*	*780*	*677*	*542*	*401*	*4302*
Bases (unweighted):								
Men	*172*	*238*	*258*	*318*	*362*	*335*	*242*	*1925*
Women	*171*	*312*	*365*	*419*	*431*	*388*	*288*	*2374*
All adults	*343*	*550*	*623*	*737*	*793*	*723*	*530*	*4299*

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Table 2.12   WEMWBS mean score, 2015/2017 combined, by social capital and sex

Social Capital	WEMWBS Mean Score	WEMWBS SE	WEMWBS Standard Deviation	Weighted Bases	Unweighted Bases
Men					
General trust in others					
Most people can be trusted	51.9	0.30	7.30	913	885
Can't be too careful in dealing with people	47.8	0.47	9.12	752	640
It depends on people/circumstance	49.1	0.87	8.57	125	128
Trust in the local neighbourhood					
Most people can be trusted	51.3	0.30	7.78	1056	1064
Some can be trusted	48.8	0.56	8.43	402	324
A few can be trusted	47.8	0.75	9.56	212	163
No-one can be trusted	43.4	1.20	9.25	72	57
Just moved here	*	*	*	26	24
How involved do you feel in the local community?					
A great deal	52.9	1.10	8.50	79	90
A fair amount	52.0	0.45	7.41	355	383
Not very much	50.2	0.40	8.11	810	743
Not at all	47.9	0.53	9.01	545	437
I can influence decisions affecting my local area					
Agree/strongly agree	52.0	0.45	7.48	369	368
Neutral	50.9	0.41	8.08	566	533
Disagree/strongly disagree	48.5	0.39	8.61	813	707
Don't know	[47.7]	[1.71]	[11.40]	43	47
How often do you contact friends, relatives or neighbours?					
Most days	50.8	0.33	8.40	1056	977
Once or twice a week	49.4	0.41	8.11	541	515
Once or twice a month	48.8	1.00	8.32	106	94
Less than once a month	46.2	1.53	8.68	60	50
Never	*	*	*	28	18
How many people could you turn to for support in a crisis?					
0	*	*	*	14	15
1-5	48.6	0.42	8.94	868	792
6-10	51.3	0.38	7.65	646	588
11-14	51.4	0.97	8.13	78	80
15+	51.9	0.60	6.93	181	172

Continued…

Table 2.12   - Continued

Social Capital	WEMWBS Mean Score	WEMWBS SE	WEMWBS Standard Deviation	Weighted Bases	Unweighted Bases
Women					
General trust in others					
Most people can be trusted	51.9	0.26	7.53	977	1059
Can't be too careful in dealing with people	47.4	0.38	9.28	825	849
It depends on people/circumstance	49.4	0.76	8.68	143	148
Trust in the local neighbourhood					
Most people can be trusted	51.1	0.24	8.05	1184	1332
Some can be trusted	49.1	0.47	8.56	410	395
A few can be trusted	45.9	0.69	9.74	231	216
No-one can be trusted	[43.8]	[1.71]	[10.62]	47	47
Just moved here	[49.7]	[1.65]	[8.77]	39	35
How involved do you feel in the local community?					
A great deal	53.4	0.97	9.47	90	116
A fair amount	51.5	0.34	7.57	513	583
Not very much	49.9	0.30	8.18	848	894
Not at all	47.3	0.49	9.69	495	464
I can influence decisions affecting my local area					
Agree/strongly agree	51.8	0.47	8.64	427	466
Neutral	50.7	0.31	7.62	593	643
Disagree/strongly disagree	48.2	0.35	8.91	859	878
Don't know	50.9	1.21	10.35	68	71
How often do you contact friends, relatives or neighbours?					
Most days	50.3	0.25	8.55	1544	1633
Once or twice a week	48.3	0.50	8.55	344	364
Once or twice a month	[48.4]	[1.51]	[8.69]	33	34
Less than once a month	*	*	*	18	19
Never	*	*	*	8	8
How many people could you turn to for support in a crisis?					
0	*	*	*	9	11
1-5	48.0	0.34	8.90	865	923
6-10	51.1	0.30	7.99	751	769
11-14	51.1	0.92	7.29	69	87
15+	52.5	0.54	7.96	247	263

Table 2.12 - Continued

Social Capital	WEMWBS Mean Score	WEMWBS SE	WEMWBS Standard Deviation	Weighted Bases	Unweighted Bases
All adults					
General trust in others					
Most people can be trusted	51.9	0.21	7.42	1890	1944
Can't be too careful in dealing with people	47.6	0.32	9.20	1577	1489
It depends on people/circumstance	49.3	0.59	8.61	268	276
Trust in the local neighbourhood					
Most people can be trusted	51.2	0.20	7.92	2240	2396
Some can be trusted	48.9	0.37	8.49	812	719
A few can be trusted	46.8	0.53	9.69	443	379
No-one can be trusted	43.6	1.02	9.77	119	104
Just moved here	49.9	1.25	7.97	65	59
How involved do you feel in the local community?					
A great deal	53.2	0.75	9.01	170	206
A fair amount	51.7	0.28	7.50	868	966
Not very much	50.1	0.26	8.14	1658	1637
Not at all	47.6	0.39	9.34	1039	901
I can influence decisions affecting my local area					
Agree/strongly agree	51.9	0.35	8.12	796	834
Neutral	50.8	0.27	7.85	1159	1176
Disagree/strongly disagree	48.3	0.28	8.77	1673	1585
Don't know	49.6	1.04	10.82	111	118
How often do you contact friends, relatives or neighbours?					
Most days	50.5	0.21	8.49	2600	2610
Once or twice a week	49.0	0.34	8.30	884	879
Once or twice a month	48.7	0.81	8.38	140	128
Less than once a month	45.2	1.39	10.22	78	69
Never	*	*	*	36	26
How many people could you turn to for support in a crisis?					
0	*	*	*	23	26
1-5	48.3	0.29	8.92	1733	1715
6-10	51.2	0.25	7.83	1398	1357
11-14	51.2	0.72	7.72	147	167
15+	52.2	0.43	7.54	428	435

Chapter 3

Dental Health

SUMMARY

Proportion of adults with at least some natural teeth decreases by age

99% aged 16-54

90% aged 55-64

81% aged 65-74

64% aged 75+
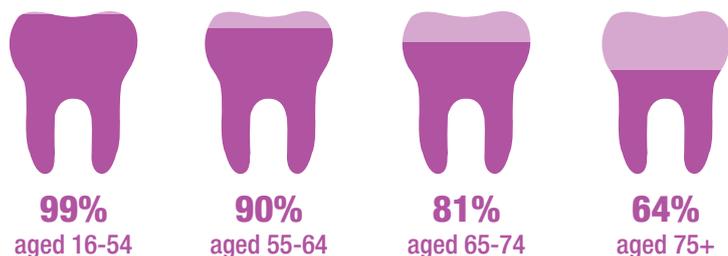
- Men were more likely than women to have at least some natural teeth (94% compared with 90%). This difference was evident only among those aged 65 and over.

The proportion of adults with 20 or more natural teeth has

increased (by 5-7 percentage points)

in each deprivation quintile between 2008 and 2017

People living in least deprived areas are more likely to have 20+ natural teeth, than those living in the most deprived

Most deprived areas

65%

Least deprived areas

86%

73% of adults visited a dentist less than a year ago

Women were much more likely than men to do so

76%   **68%**

36%
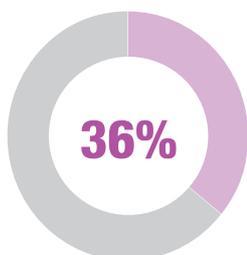
of adults reported feeling nervous about their dentist visit. This was higher for women (43%) than men (30%)

- Over 3/4 of adults (78%) did not experience difficulties when visiting the dentist.
- The most common difficulties were finding an appointment that suited (7%), dental treatment being too expensive (6%) and getting time off work (5%).

Younger age groups were more likely to experience toothache and gum bleeding than older groups

18%

4%

16-24   75+

Toothache

36%

7%

35-44   75+

Gum bleeding
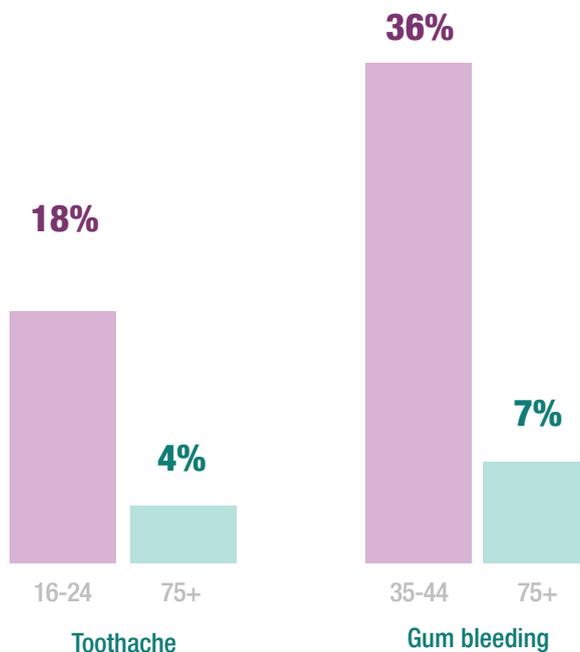
- However, having difficulty chewing either often or occasionally was most common among those aged 55-74 (13% among those aged 55-64 and 14% among those aged 65-74) and least common among the youngest age group (7% among those aged 16-24).

3 DENTAL HEALTH

Caroline Stevens

3.1 INTRODUCTION

The Oral Health Improvement Plan recently published (in early 2018) states the 'impact of a healthy mouth on general health is significant' with a recognition that improvements in oral health contribute to overall improvements in population health[1]. Oral disease can have a detrimental impact on work, school and other daily activities and as a result it has potentially wider socio-economic consequences. The most common types of oral disease are tooth decay and gum disease. Worldwide, between 60-90% of school children and nearly 100% of adults have tooth decay[2]. As tooth decay is so widespread and is largely preventable, it is considered a public health issue.

The oral condition of greatest concern due to its seriousness and increasing incidence is oral cancer[3]. Head and neck cancer, of which oral cancer and oropharyngeal cancer are types, account for around 3% of total cases of cancer in the UK[4]. There are twice as many cases of oral cancer diagnosed every year in Scotland compared to England and Wales[5]. Major risk factors for oral cancer include tobacco use and excessive alcohol consumption[6] and as a result, incidence is higher in men and older age groups[7,8].

Child and adult dental registration rates have increased in recent years, 92% of the Scottish population was registered with a dentist in September 2017 with rates higher among children than adults (94% and 92%, respectively)[9]. Over 7 out of 10 (72%) of registered patients had visited an NHS dentist in the previous 2 years with children more likely to have done so than adults (85% and 67% respectively)[10]. There has also been a recent increase in the cost of provision of General Dental Services and Public Dental services since 2015/16[11], highlighting an increase in demand largely due to an ageing population and the increase in people retaining their teeth[12].

Further improvements to oral health is evidenced by the findings of the Detailed Inspection programme of P7 children in 2017 which showed that over three quarters (77%) of P7 children had no obvious signs of tooth decay in their permanent teeth which has increased significantly from 53% in 2005[13]. Despite these improvements, inequalities in oral health persist[14] for example children and adults living in the most deprived areas were less likely to have visited a dentist in the past two years than people living in the least deprived areas (among children 81% in the most deprived and 90% in the least deprived and among adults 64% compared to 75%)[15]. Also while 86.5% of P7 children living in the least deprived areas had no obvious tooth decay only 65.6% of P7 children living in the most deprived areas had no signs[16].

The latest figures indicate that there has been a long term increase in the incidence of oral cancer particularly among young people which is possibly due to changing patterns of alcohol and tobacco consumption[17]. Recent and growing evidence also suggests that there is also a link between human papilloma virus (HPV) and mouth and throat cancer[18] as well as oropharyngeal cancer[19].

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3.1.1 Policy background

A Stronger Scotland: The Government's Programme for Scotland 2015-16[20] recognised deficiencies in the current dental system, which had been set up when levels of dental health were poorer and people of all ages required multiple fillings and extractions. It identified a need to transform the system to meet the needs of younger people who require a preventive focus whilst ensuring that the system continues to allow for the treatment needs of the older population.

The **Oral Health Improvement Plan** was published in January 2018 following extensive consultation with professionals and the public[1]. This plan sets out strategies to improve the oral health of the population and to provide high quality NHS dental services in years to come. The plan proposes a move away from restorative dentistry to a more preventative model. It also recognises poor dental health as a wider public health concern beyond only dentistry as it is closely intertwined with other public health problems such as poor diet as well as smoking and alcohol consumption.

The Oral Health Improvement plan has a number of aims:

- Developing a preventative model for oral healthcare
- Reducing oral health inequalities
- Meeting the needs of an ageing population
- Providing more services on the high street
- Improving information for patients
- Increasing quality assurance and improvement
- Developing and enhancing the dental workforce

Prevention

Childsmile is a preventative programme that encourages toothbrushing and fluoride varnish application in nursery and primary school age children. This programme also distributes toothpaste and brushes for home use and involves dental practices providing preventative care for children. The **Oral Health Improvement Plan** aims to ensure that good habits learned through **Childsmile** are maintained throughout childhood and into adulthood. Further, it aims to introduce a preventative care programme for adults. This preventative care programme will be dependent on the degree of risk of developing oral cancer, gum disease and decay due to lifestyle factors such as diet, alcohol consumption and smoking status.

Reducing oral health inequalities

Evidence from the National Dental Inspection Programme[21] (NDIP) shows that although oral health has improved significantly across all communities, children living in the most deprived communities still have more decay experience compared with those in the least deprived. The **Oral Health Improvement Plan** will ensure that community-level interventions form a significant part of the overall approach to addressing health inequalities as a means to engage 'hard-to-reach'

groups. Further, the plan will ensure that practitioners working in deprived areas have appropriate payments and allowances to reflect the needs of their patients. This will encourage dental practices to continue to provide care to patients in areas of greatest oral health need, such as those with a high degree of deprivation.

Meeting the needs of an ageing population

The ageing of the Scottish population means that over the next ten years the number of people over 75 is projected to increase by 27% and by 79% over the next 25 years[22]. The improvements that have been made in oral health in Scotland have also presented new challenges. The increasingly ageing population, combined with more adults retaining some or all of their natural teeth, is likely to mean there will be a significant increase in people requiring domiciliary dental care, either in their own home or in residential care. The **Oral Health Improvement Plan** aims to provide a greater system of care for those in care homes. Dental practitioners would work with care home staff to ensure adequate preventative care is in place for residents, and would introduce arrangements to enable dental practitioners to visit patients in care homes. This arrangement will also be introduced to people who are cared for in domiciliary settings.

Providing more services on the high street

This aim is to ensure that patients are treated in the appropriate setting i.e. within Hospital Dental Services (HDS) or by General Dental Practitioners (GDPs). This involves obtaining adequate data on primary-secondary care pathways as well as ensuring that GDPs have the skills and expertise to deliver a wide range of treatment and are accredited to do so.

Improving information for patients

In recognition that the public do not consider themselves to have enough information about oral services available from the NHS and the associated costs, action is being taken to ensure that this information is made available and that it is streamlined across all GDPs.

Quality assurance and improvement

The aim is to enhance and improve service delivery, scrutiny and quality assurance in NHS dental care through a number of actions including introducing a Director of Dentistry in each Health Board area and developing a single database for quality improvement information for NHS Boards. Much of this work will build on **Building a comprehensive approach to reviewing the quality of care: Supporting the delivery of sustainable high quality services** which established the need to develop a new framework in dentistry that will improve care within practices, NHS Boards and nationally[23].

Workforce

The NHS dental practitioner workforce has increased significantly over the past ten years, a 46% increase, from 2,474 dentists in 2007 to 3,603 in 2018[24]. The plan sets out the need for the workforce to continuously develop and adapt with a particular emphasis on working within a healthcare setting which promotes prevention and which needs to adapt to the increased demands as a result of an increase in the older population people.

3.1.2 Reporting on dental health in the Scottish Health Survey (SHeS)

The focus of this chapter is on dental health and actions taken by individuals to improve dental health. The section on dental health presents the findings on the prevalence of natural teeth in the Scottish population in 2017 and allows for further analysis by age and sex. In addition deprivation trends in prevalence of natural teeth are presented from 2008. The remainder of the chapter explores dental treatment in relation to the pattern of visits to the dentist, anxiety about going to the dentist, difficulties experienced when arranging to see a dentist and dental health problems such as toothache, bleeding gums and difficulty chewing.

The area deprivation data are presented in Scottish Index of Multiple Deprivation (SIMD) quintiles. Where appropriate, to ensure that comparisons are not confounded by different age profiles within categories, data have been age-standardised. Readers should refer to the Glossary at the end of this Volume for a detailed description of SIMD and age-standardisation.

The area deprivation trend data have been age-standardised using 2016 mid-year household population estimates applied to each year 2008 to 2017 separately. This enables comparisons across years to be made without estimates being affected by changes to the age composition of the population. However figures may differ slightly from previously published figures using different mid-year population estimates. The closest SIMD rating was used for each year of the data: 2017 data uses the 2016 ranking (as does 2016) whereas the 2012 data uses the 2012 ranking (as does 2010-2015) and the 2008 and 2009 data uses the 2009 ranking.

Supplementary tables are also available on the Scottish Government SHeS website[25].

3.2 METHODS AND DEFINITIONS

Adults aged 16 and over are asked questions on dental health annually and on dental health services and actions taken to improve dental health biennially. Due to several changes made to the questions on dental health prior to 2008 only data from 2008 is presented in this chapter. More information about the changes made in 2008 is provided in the 2008 and subsequent reports[26.]

3.3   DENTAL HEALTH

3.3.1   Number of natural teeth and prevalence of no natural teeth in 2017, by age and sex

In 2017 the vast majority (92%) of adults in Scotland had at least some natural teeth while 8% had none. Around three in four people (76%) had 20 or more natural teeth. Men were more likely than women to have some natural teeth (94% and 90% respectively).

In concurrence with previous SHeS reports, natural teeth prevalence was lower in older age groups for both men and women in 2017. Almost all (97-100%) adults aged 16-54 reported having at least some natural teeth, which decreased to 90% for those aged 55-64, 81% for those aged 65-74, and 64% for those aged 75+.

Overall among those aged 65 and over prevalence of natural teeth is significantly associated with sex. As Figure 3A shows the rate of men reporting to have at least some natural teeth was higher than women in both the 65-74 age group (87% compared with 75%) and the 75 and over age group (70% compared with 60%), although this was outside the 95% level of significance among those aged 75 and over. There were no significant differences in prevalence of some natural teeth between men and women under the age of 65.   **Figure 3A, Table 3.1**

Figure 3A
Percentage with any natural teeth, 2017, by age and sex
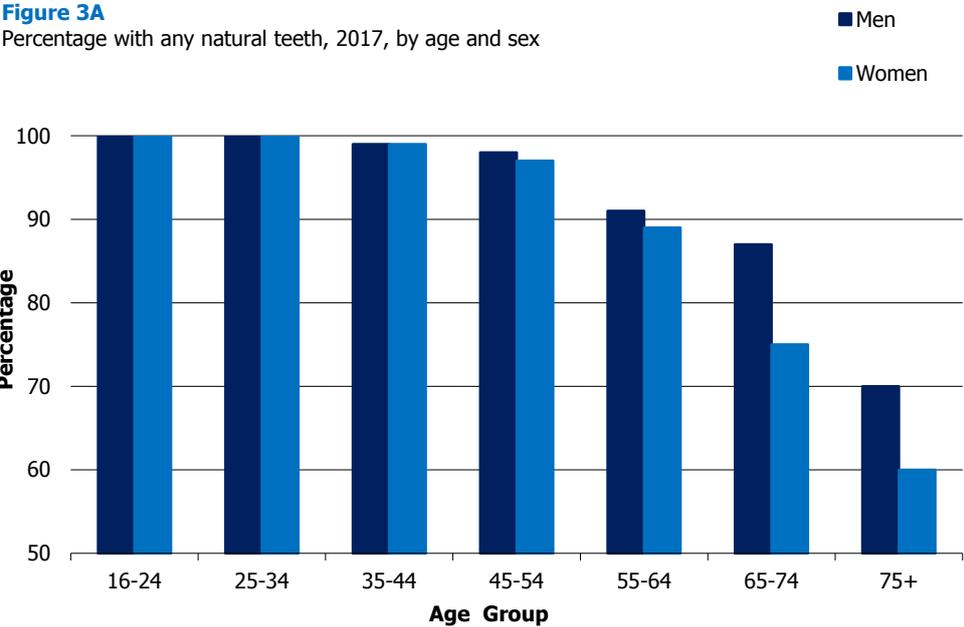
3.3.2   Trends in prevalence of natural teeth since 2008 (age-standardised), by area deprivation and sex

There are some significant trends in natural teeth prevalence from 2008 to 2017 by year and area deprivation. For all adults, results shows that all quintile areas with the exception of the most deprived have seen a significant increase in the rate of having 20 or more natural teeth since 2008. The data shows a 6-7 percentage point increase among those

living in all areas, apart from the most deprived, over the time period. Among those living in the most deprived areas, there has been a five percentage point increase although this was not statistically significant.

In every year since 2008, area deprivation has had a significant impact on the prevalence of natural teeth. The rate of those in the most deprived areas reporting to have 20 or more teeth has ranged from 58-65% across the years compared with 79-86% for those in the least deprived area. The gap between the least deprived and most deprived has fluctuated between 19% and 23% between 2008 and 2017 (19% in 2008 and 21% in 2017).   **Table 3.2**

3.3.3 Number of natural teeth and prevalence of no natural teeth in 2017, by area deprivation and sex

There are significant differences in the prevalence of natural teeth by deprivation for both men and women in 2017. While 97% of all adults living in the least deprived areas report having at least some natural teeth, this figure decreases to 93% in the 4th and 3rd deprivation quintiles, 91% in the 2nd quintile, and 85% among those living in the most deprived areas. For men prevalence of having some teeth declined by 10 percentage points from 98% among those living in the least deprived areas to 88% in the most deprived areas. For women it declined by 14 percentage points with the same pattern of decline by deprivation (96% to 82%).

Conversely the proportion with no natural teeth increased fivefold for those living in the most deprived areas to 15% from 3%.

Figure 3B, Table 3.3

Figure 3B
Prevalence of no natural teeth (age-standardised), 2017, by area deprivation and sex
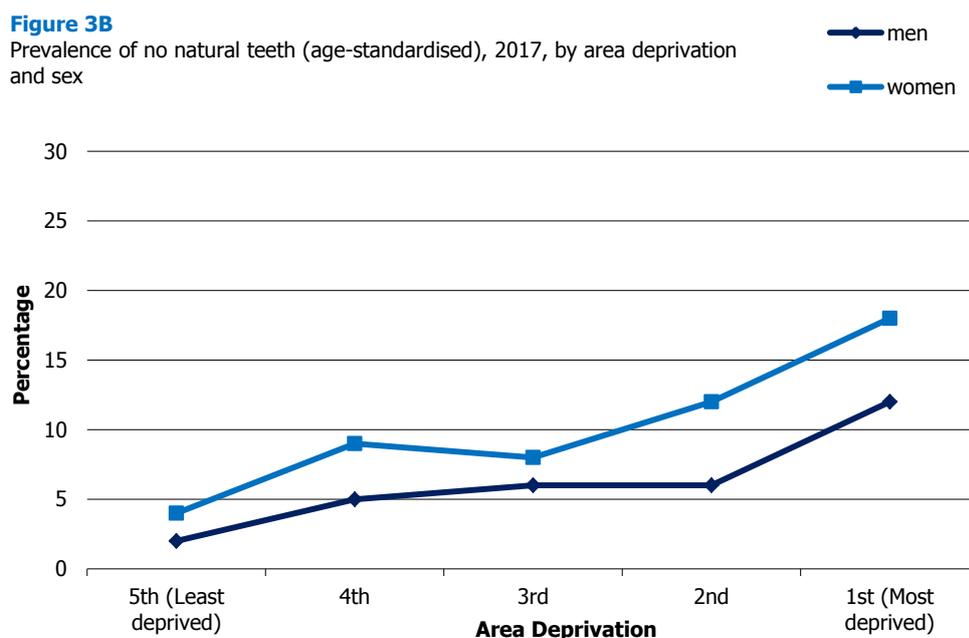
3.3.4 Length of time since last visit to the dentist in 2017, by age and sex

In 2017 around three-quarters (73%) of all adults aged 16 and over reported having visited the dentist less than a year ago. This left 10% having visited the dentist more than one year ago and up to two years ago, for 8% it had been more than two years and up to five years, a further 8% had visited over five years ago and under 0.5% of people had never visited the dentist. Women were significantly more likely to have visited the dentist less than a year ago compared with men (76% and 68%, respectively). **Table 3.4**

The length of time since last visiting the dentist varied significantly by age and a different pattern was observed for men and women. For women, the rates of visiting the dentist less than a year ago increased from 73% among those aged 16-24 to 82%-83% among those aged 25-64 before declining to 70% among those aged 65-74 and declining further still to 50% among those aged 75 and over. For men the rates were fairly stable among those aged 16-44 (ranging from 63-66%) before increasing to 72% among those aged 45-54 and 55-64 and further increasing to 75% among those aged 65-74 before declining to 63% among those aged 75 and over. **Figure 3C, Table 3.4**

Figure 3C
Length of time since last visit to the dentist, 2017, by age and sex
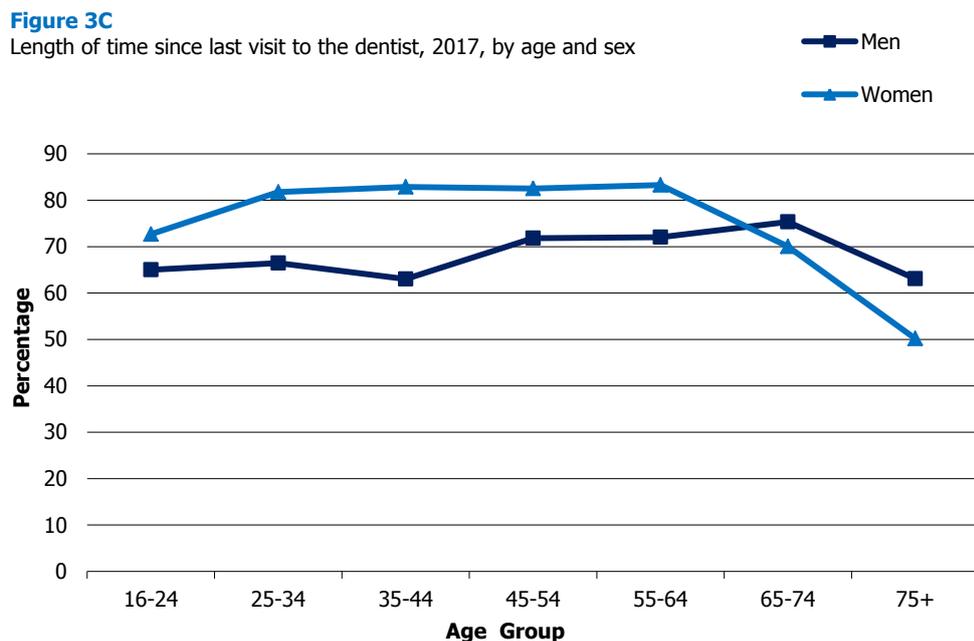
3.3.5 Dental anxiety about visiting the dentist in 2017, by age and sex

Approximately one-third (36%) of adults in 2017 reported feeling either a bit nervous (21%) or very nervous (15%) about visiting the dentist. Women were more likely than men to report feeling some degree of nervousness (43% and 30%, respectively). The relationship between whether a person experiences nervousness about visiting the dentist and their age was unclear and not statistically significant at the 95% level. **Table 3.5**

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3.3.6 Difficulties experienced when visiting the dentist in 2017, by age and sex

In 2017, almost 8 in 10 adults (78%) did not have difficulties related to visiting the dentist. The most common difficulties people experienced were difficulty in getting an appointment that suited them (7%), dental treatment being too expensive (6%) and difficulty in getting time off work (5%).

There were some differences in the type of difficulties experienced when visiting the dentist by age group. Those aged 25-34 and 35-44 were the most likely age groups to report having difficulty getting an appointment that suited them (13% and 11% respectively). Adults aged 25-54 were the most likely to report difficulty in getting time off work (9% among those aged 25-34 and 8% among those aged 35-54). Younger adults aged 16-24 (9%) and 25-34 (11%) were the most likely to find dental treatment too expensive. Among older people the most common difficulties were dental treatment being too expensive (only for those aged 65-74) and having a long way to go to the dentist (for those aged 65-74 and 75+ both 4%).   **Table 3.6**

3.3.7 Dental health problems in 2015/2017 combined, by age and sex

The 2015/2017 combined data shows that prevalence of toothache was significantly higher among adults in younger age groups than those in older age groups, with 18% of those aged 16-24 reporting this, gradually decreasing to 4% of those aged 75+. This is likely to be partly due to the increasing proportion of adults who report having no teeth in the older age groups.

Gum bleeding is also significantly associated with age although a different pattern is apparent. Of those aged 16-24, 29% reported to have gum bleeding either often or occasionally increasing to 35% of those aged 25-34 and 36% of those aged 35-44 before decreasing steadily to 7% of those aged 75+.

Experiencing difficulty chewing either often or occasionally also varied significantly by age with prevalence highest among those aged 65-74 (14%) and 55-64 (13%) and lowest among those aged 16-24 (7%).

Table 3.7

References and Notes

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        professional/cancer-statistics/statistics-by-cancer-type/head-and-neck-cancers/incidence

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        Dental-Summary.pdf

10   ISD Scotland Dental Statistics – https://www.isdscotland.org/Health-Topics/Dental-
        Care/Publications/2017-01-24/2017-01-24-Dental-Report.pdf

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12   Annual Report of the Chief Dental Officer 2012 – A picture of Scotland's Oral Health. Edinburgh:
        Scottish Government, 2013. Available from: www.scotland.gov.uk/Publications/2013/12/1101

13   ISD Scotland National Dental Inspection Programme (2017). Available from:
        http://www.isdscotland.org/health-topics/dental-care/publications/2017-10-24/2017-10-24-NDIP-
        Summary.pdf

14   Annual Report of the Chief Dental Officer 2012 – A picture of Scotland's Oral Health. Edinburgh:
        Scottish Government, 2013. Available from: www.scotland.gov.uk/Publications/2013/12/1101

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        Care/Publications/2017-01-24/2017-01-24-Dental-Report.pdf

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19   https://www.macmillan.org.uk/information-and-support/head-and-neck-cancers/oropharnygeal
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Table list

Table 3.1 Number of natural teeth and percentage with no natural teeth, 2017, by age and sex

Aged 16 and over   *2017*

Number of natural teeth	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
No natural teeth	-	-	1	2	9	13	30	6
Fewer than 10	1	-	1	4	8	11	17	5
10 to 19	1	6	3	13	19	30	22	13
20 or more	97	94	94	80	64	47	31	76
All with teeth	*100*	*100*	*99*	*98*	*91*	*87*	*70*	*94*
Women								
No natural teeth	-	-	1	3	11	25	40	10
Fewer than 10	0	1	1	4	6	11	13	5
10 to 19	1	2	3	7	17	21	20	10
20 or more	99	97	95	86	67	42	27	76
All with teeth	*100*	*100*	*99*	*97*	*89*	*75*	*60*	*90*
All adults								
No natural teeth	-	-	1	3	10	19	36	8
Fewer than 10	1	1	1	4	7	11	15	5
10 to 19	1	4	3	10	18	25	21	11
20 or more	98	96	94	83	65	44	28	76
All with teeth	*100*	*100*	*99*	*97*	*90*	*81*	*64*	*92*
Bases (weighted):								
Men	*242*	*294*	*269*	*321*	*281*	*221*	*142*	*1772*
Women	*236*	*306*	*284*	*345*	*298*	*242*	*201*	*1912*
All adults	*478*	*600*	*553*	*666*	*580*	*464*	*343*	*3684*
Bases (unweighted):								
Men	*133*	*219*	*200*	*242*	*326*	*283*	*188*	*1591*
Women	*158*	*287*	*323*	*365*	*384*	*340*	*235*	*2092*
All adults	*291*	*506*	*523*	*607*	*710*	*623*	*423*	*3683*

Table 3.2 Number of natural teeth and percentage with no natural teeth (age-standardised), 2008 to 2017, by area deprivation and sex

Aged 16 and over   *2008 - 2017*

False teeth / number of natural teeth	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%
Men										
No natural teeth										
1st (most deprived)	14	17	16	14	11	16	13	13	11	12
2nd	11	12	12	12	13	12	6	7	11	6
3rd	10	10	9	10	9	7	7	6	7	6
4th	10	8	8	8	10	6	5	5	3	5
5th (least deprived)	6	5	5	5	6	5	4	3	3	2
Fewer than 10										
1st (most deprived)	8	10	7	8	11	9	7	9	11	10
2nd	7	7	7	7	7	7	9	6	6	6
3rd	7	6	6	7	5	7	7	5	6	4
4th	5	4	4	3	5	5	4	3	6	3
5th (least deprived)	5	5	3	4	3	2	3	3	3	2
10 to 19										
1st (most deprived)	19	13	18	17	17	13	17	17	16	14
2nd	14	13	16	12	16	12	18	15	10	17
3rd	13	15	9	14	15	11	11	14	12	13
4th	11	13	15	13	13	12	10	9	10	12
5th (least deprived)	9	10	9	11	9	9	9	10	10	9
20 or more										
1st (most deprived)	59	59	59	62	61	62	63	61	62	64
2nd	67	67	65	69	64	70	67	71	73	71
3rd	70	70	75	70	71	74	76	76	75	76
4th	74	75	73	76	73	77	81	83	81	80
5th (least deprived)	80	80	82	81	82	84	84	84	85	87

Continued…

Table 3.2 - *Continued*

False teeth / number of natural teeth	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%
Women										
No natural teeth										
1st (most deprived)	21	23	21	18	19	19	16	17	15	18
2nd	17	17	16	15	15	16	15	11	10	12
3rd	16	17	13	11	11	11	12	9	8	8
4th	11	11	11	9	11	10	8	7	7	9
5th (least deprived)	8	7	6	5	6	6	5	5	4	4
Fewer than 10										
1st (most deprived)	6	6	6	7	10	6	7	6	5	7
2nd	6	6	6	6	7	8	6	6	6	6
3rd	5	3	4	6	5	6	5	5	6	5
4th	4	4	4	5	5	4	3	2	3	4
5th (least deprived)	3	3	4	4	4	2	3	3	4	3
10 to 19										
1st (most deprived)	13	14	13	15	14	15	14	14	14	11
2nd	13	14	10	13	11	11	12	11	11	10
3rd	11	12	11	11	9	12	11	12	10	11
4th	11	10	11	9	8	10	10	9	6	9
5th (least deprived)	11	11	8	10	7	8	7	7	9	7
20 or more										
1st (most deprived)	60	57	61	60	57	60	64	64	66	65
2nd	64	63	67	66	68	66	67	73	72	73
3rd	68	68	71	72	76	72	73	74	77	77
4th	74	75	74	76	76	76	78	81	84	79
5th (least deprived)	78	79	81	82	82	84	85	85	83	85

Continued…

Table 3.2 - Continued

False teeth / number of natural teeth	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%
All adults										
No natural teeth										
1st (most deprived)	18	20	18	16	15	17	15	15	13	15
2nd	14	15	14	13	14	14	10	9	11	9
3rd	13	14	11	10	10	9	9	7	7	7
4th	10	10	9	8	10	8	7	6	5	7
5th (least deprived)	7	6	6	5	6	5	5	4	4	3
Fewer than 10										
1st (most deprived)	7	8	6	8	10	7	7	7	8	8
2nd	7	7	7	7	7	7	7	6	6	6
3rd	6	4	5	6	5	7	6	5	6	5
4th	5	4	4	4	5	4	4	2	4	3
5th (least deprived)	4	4	4	4	4	2	3	3	3	3
10 to 19										
1st (most deprived)	16	14	15	16	15	14	15	15	15	12
2nd	14	13	13	12	13	11	15	13	11	13
3rd	12	13	10	12	12	12	11	13	11	12
4th	11	12	13	11	11	11	10	9	8	10
5th (least deprived)	10	10	9	10	8	8	8	8	10	8
20 or more										
1st (most deprived)	60	58	60	61	59	61	63	62	64	65
2nd	65	65	66	67	66	68	67	72	72	72
3rd	69	69	73	71	73	73	74	75	76	76
4th	74	75	73	76	74	76	79	82	83	80
5th (least deprived)	79	80	82	81	82	84	85	85	84	86

Table 3.2 - Continued

False teeth / number of natural teeth	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):										
Men										
1st (most deprived)	*577*	*620*	*707*	*696*	*388*	*384*	*409*	*438*	*411*	*291*
2nd	*644*	*728*	*698*	*664*	*474*	*472*	*430*	*484*	*384*	*370*
3rd	*582*	*674*	*675*	*753*	*479*	*489*	*422*	*439*	*441*	*356*
4th	*724*	*784*	*711*	*807*	*486*	*462*	*476*	*566*	*386*	*379*
5th (least deprived)	*553*	*781*	*659*	*678*	*482*	*531*	*493*	*458*	*442*	*376*
Women										
1st (most deprived)	*674*	*781*	*794*	*761*	*477*	*485*	*439*	*504*	*497*	*377*
2nd	*692*	*778*	*790*	*729*	*495*	*503*	*494*	*518*	*427*	*379*
3rd	*645*	*735*	*726*	*882*	*515*	*532*	*462*	*503*	*453*	*382*
4th	*722*	*788*	*757*	*826*	*485*	*524*	*534*	*591*	*384*	*371*
5th (least deprived)	*624*	*836*	*694*	*726*	*528*	*499*	*490*	*476*	*474*	*403*
All adults										
1st (most deprived)	*1251*	*1400*	*1501*	*1457*	*865*	*869*	*848*	*942*	*908*	*668*
2nd	*1336*	*1506*	*1488*	*1393*	*969*	*976*	*924*	*1002*	*811*	*748*
3rd	*1227*	*1409*	*1402*	*1635*	*994*	*1021*	*884*	*942*	*894*	*738*
4th	*1446*	*1572*	*1468*	*1632*	*970*	*986*	*1010*	*1157*	*770*	*750*
5th (least deprived)	*1176*	*1616*	*1353*	*1404*	*1010*	*1031*	*983*	*934*	*916*	*778*
Bases (unweighted):										
Men										
1st (most deprived)	*466*	*566*	*686*	*616*	*301*	*328*	*335*	*383*	*293*	*235*
2nd	*570*	*608*	*607*	*573*	*389*	*445*	*396*	*443*	*325*	*313*
3rd	*609*	*694*	*614*	*717*	*500*	*508*	*480*	*476*	*427*	*358*
4th	*719*	*764*	*685*	*807*	*496*	*450*	*449*	*543*	*421*	*374*
5th (least deprived)	*469*	*644*	*511*	*557*	*440*	*403*	*404*	*390*	*421*	*311*
Women										
1st (most deprived)	*654*	*833*	*962*	*804*	*428*	*458*	*443*	*487*	*420*	*369*
2nd	*713*	*783*	*817*	*754*	*500*	*555*	*537*	*535*	*436*	*396*
3rd	*761*	*879*	*797*	*965*	*616*	*667*	*555*	*589*	*549*	*460*
4th	*875*	*927*	*871*	*1004*	*593*	*604*	*572*	*659*	*504*	*456*
5th (least deprived)	*602*	*812*	*665*	*725*	*547*	*468*	*481*	*474*	*512*	*411*
All adults										
1st (most deprived)	*1120*	*1399*	*1648*	*1420*	*729*	*786*	*778*	*870*	*713*	*604*
2nd	*1283*	*1391*	*1424*	*1327*	*889*	*1000*	*933*	*978*	*761*	*709*
3rd	*1370*	*1573*	*1411*	*1682*	*1116*	*1175*	*1035*	*1065*	*976*	*818*
4th	*1594*	*1691*	*1556*	*1811*	*1089*	*1054*	*1021*	*1202*	*925*	*830*
5th (least deprived)	*1071*	*1456*	*1176*	*1282*	*987*	*871*	*885*	*864*	*933*	*722*

Table 3.3 Number of natural teeth and percentage with no natural teeth (age-standardised), 2017, by area deprivation and sex

Aged 16 and over   *2017*

False teeth/number of natural teeth	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
No natural teeth	2	5	6	6	12
Fewer than 10	2	3	4	6	10
Between 10 and 19	9	12	13	17	14
20 or more	87	80	76	71	64
All with teeth	*98*	*95*	*94*	*94*	*88*
Women					
No natural teeth	4	9	8	12	18
Fewer than 10	3	4	5	6	7
Between 10 and 19	7	9	11	10	11
20 or more	85	79	77	73	65
All with teeth	*96*	*91*	*92*	*88*	*82*
All adults					
No natural teeth	3	7	7	9	15
Fewer than 10	3	3	5	6	8
Between 10 and 19	8	10	12	13	12
20 or more	86	80	76	72	65
All with teeth	*97*	*93*	*93*	*91*	*85*
Bases (weighted):					
Men	*376*	*379*	*356*	*370*	*291*
Women	*403*	*371*	*382*	*379*	*377*
All adults	*778*	*750*	*738*	*748*	*668*
Bases (unweighted):					
Men	*311*	*374*	*358*	*313*	*235*
Women	*411*	*456*	*460*	*396*	*369*
All adults	*722*	*830*	*818*	*709*	*604*

Table 3.4 Length of time since last visit to the dentist, 2017, by age and sex

2017

Length of time since last visit to dentist	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Less than a year ago	65	66	63	72	72	75	63	68
More than 1 year, up to 2 years ago	19	10	15	10	9	6	3	11
More than 2 years, up to 5 years ago	9	19	16	8	8	4	11	11
More than 5 years ago	5	5	6	9	12	15	23	9
Never	2	-	-	1	-	-	-	0
Women								
Less than a year ago	73	82	83	83	83	70	50	76
More than 1 year, up to 2 years ago	15	11	10	9	5	8	13	10
More than 2 years, up to 5 years ago	7	6	7	4	5	7	9	6
More than 5 years ago	5	1	-	5	6	15	28	7
Never	-	-	-	-	0	0	0	0
All adults								
Less than a year ago	69	74	73	77	78	73	56	73
More than 1 year, up to 2 years ago	17	11	13	10	7	7	9	10
More than 2 years, up to 5 years ago	8	12	11	6	6	6	10	8
More than 5 years ago	5	3	3	7	9	15	26	8
Never	1	-	-	1	0	0	0	0
Bases (weighted):								
Men	*138*	*168*	*155*	*183*	*161*	*126*	*82*	*1012*
Women	*135*	*175*	*162*	*197*	*170*	*138*	*114*	*1090*
All adults	*273*	*342*	*316*	*380*	*331*	*265*	*195*	*2102*
Bases (unweighted):								
Men	*84*	*132*	*119*	*135*	*182*	*153*	*105*	*910*
Women	*90*	*163*	*189*	*210*	*216*	*194*	*128*	*1190*
All adults	*174*	*295*	*308*	*345*	*398*	*347*	*233*	*2100*

Table 3.5 Dental anxiety, 2017, by age and sex

Dental anxiety	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
I don't feel nervous at all	71	66	67	71	68	73	83	70
I feel a bit nervous	21	21	19	16	20	18	12	18
I feel very nervous	8	13	14	13	12	10	5	11
Women								
I don't feel nervous at all	62	53	63	55	51	58	65	57
I feel a bit nervous	18	27	20	25	31	24	22	24
I feel very nervous	20	20	17	20	18	18	14	18
All adults								
I don't feel nervous at all	66	59	65	63	59	65	72	64
I feel a bit nervous	20	24	19	21	26	21	18	21
I feel very nervous	14	16	16	17	15	14	10	15
Bases (weighted):								
Men	*138*	*168*	*155*	*183*	*161*	*126*	*82*	*1012*
Women	*135*	*175*	*162*	*197*	*170*	*138*	*114*	*1090*
All adults	*273*	*342*	*316*	*380*	*331*	*265*	*195*	*2102*
Bases (unweighted):								
Men	*84*	*132*	*119*	*135*	*182*	*153*	*105*	*910*
Women	*90*	*163*	*189*	*210*	*216*	*194*	*128*	*1190*
All adults	*174*	*295*	*308*	*345*	*398*	*347*	*233*	*2100*

Table 3.6 Difficulties when visiting the dentist, 2017, by age and sex

Aged 16 and over   *2017*

Type of difficulty	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Difficulty in getting time off work	4	12	13	13	4	1	-	8
Difficulty in getting an appointment that suits me	1	13	14	7	6	1	1	7
Dental treatment too expensive	7	14	5	6	4	1	2	6
Long way to go to the dentist	7	9	4	3	3	3	4	5
I have not found a dentist I like	2	5	0	4	2	2	1	2
I cannot get dental treatment under the NHS	1	2	3	3	2	1	0	2
I have difficulty in getting access, e.g. steps, wheelchair access	-	-	2	1	1	2	1	1
Other	3	3	3	3	1	2	-	2
None of these	76	67	73	68	83	90	92	77
Women								
Difficulty in getting time off work	4	7	3	3	2	1	-	3
Difficulty in getting an appointment that suits me	13	13	7	10	3	2	3	8
Dental treatment too expensive	11	9	5	6	4	6	2	6
Long way to go to the dentist	6	2	6	3	4	5	4	4
I have not found a dentist I like	1	2	2	3	2	1	1	2
I cannot get dental treatment under the NHS	2	0	3	1	3	1	3	2
I have difficulty in getting access, e.g. steps, wheelchair access	-	-	1	0	-	2	2	1
Other	6	5	3	2	2	1	-	3
None of these	66	75	78	77	85	85	91	79

Continued…

Table 3.6 - *Continued*

Type of difficulty	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
Difficulty in getting time off work	4	9	8	8	3	1	-	5
Difficulty in getting an appointment that suits me	7	13	11	9	5	1	2	7
Dental treatment too expensive	9	11	5	6	4	4	2	6
Long way to go to the dentist	7	6	5	3	3	4	4	4
I have not found a dentist I like	2	3	1	3	2	2	1	2
I cannot get dental treatment under the NHS	2	1	3	2	2	1	2	2
I have difficulty in getting access, e.g. steps, wheelchair access	-	-	1	1	1	2	1	1
Other	4	4	3	2	1	2	-	2
None of these	71	71	76	73	84	88	92	78
Bases (weighted):								
Men	*136*	*168*	*155*	*181*	*161*	*126*	*82*	*1007*
Women	*135*	*175*	*162*	*197*	*169*	*138*	*114*	*1089*
All adults	*270*	*342*	*316*	*378*	*330*	*264*	*195*	*2096*
Bases (unweighted):								
Men	*82*	*132*	*119*	*134*	*182*	*153*	*105*	*907*
Women	*90*	*163*	*189*	*210*	*215*	*192*	*127*	*1186*
All adults	*172*	*295*	*308*	*344*	*397*	*345*	*232*	*2093*

Table 3.7 Dental health problems, 2015/2017 combined, by age and sex

Aged 16 and over   *2015/2017 combined*

Self-assessed dental health	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Toothache								
Yes	15	13	11	11	9	9	3	11
No	85	87	88	87	81	80	64	83
No natural teeth	-	-	1	2	10	12	33	6
Gum Bleeding								
Yes, often	5	8	10	4	4	2	1	5
Yes, occasionally	23	28	27	22	20	15	9	22
No	72	63	62	72	67	72	57	67
No natural teeth	-	-	1	2	10	12	33	6
Difficulty chewing								
Yes, often	2	4	3	6	3	3	2	3
Yes, occasionally	4	8	8	7	11	10	9	8
No	94	89	88	86	77	76	56	83
No natural teeth	-	-	1	2	10	12	33	6
Women								
Toothache								
Yes	20	17	12	12	12	8	4	12
No	79	83	87	85	81	75	54	79
No natural teeth	0	0	1	4	7	17	42	9
Gum Bleeding								
Yes, often	3	6	8	5	5	3	2	5
Yes, occasionally	27	28	27	28	23	18	4	23
No	69	65	65	63	65	61	52	63
No natural teeth	0	0	1	4	7	17	42	9
Difficulty chewing								
Yes, often	1	5	3	3	4	4	2	3
Yes, occasionally	6	6	5	10	10	13	7	8
No	93	88	91	84	79	66	49	80
No natural teeth	0	0	1	4	7	17	42	9

Continued…

Table 3.7 - *Continued*

Self-assessed dental health	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
Toothache								
Yes	18	15	12	11	10	8	4	12
No	82	85	87	86	81	77	58	81
No natural teeth	0	0	1	3	8	15	38	7
Gum Bleeding								
Yes, often	4	7	9	5	4	3	1	5
Yes, occasionally	25	28	27	25	21	17	6	23
No	71	64	63	67	66	66	54	65
No natural teeth	0	0	1	3	8	15	38	7
Difficulty chewing								
Yes, often	2	4	3	4	3	3	2	3
Yes, occasionally	5	7	7	8	10	11	8	8
No	93	89	89	85	78	71	52	81
No natural teeth	0	0	1	3	8	15	38	7
Bases (weighted):								
Men	*283*	*343*	*315*	*376*	*330*	*258*	*168*	*2072*
Women	*277*	*359*	*333*	*405*	*349*	*285*	*235*	*2242*
All adults	*560*	*702*	*647*	*781*	*679*	*543*	*403*	*4314*
Bases (unweighted):								
Men	*173*	*238*	*260*	*318*	*364*	*335*	*242*	*1930*
Women	*172*	*312*	*366*	*420*	*433*	*389*	*291*	*2383*
All adults	*345*	*550*	*626*	*738*	*797*	*724*	*533*	*4313*

Chapter 4

Alcohol

SUMMARY
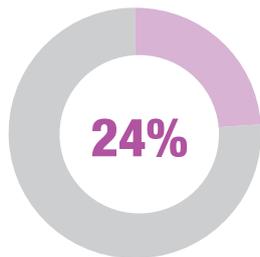
24% of adults drank at harmful or hazardous levels, down from 34% in 2003

The average number of units of alcohol consumed per week by drinkers has decreased since 2003, and has remained at around the current level since 2013

2003
16.1 units

2013
12.2 units

2017
12.5 units

- The proportion of adults saying they did not drink alcohol increased from 11% in 2003 to 17% in 2017, the highest level in the time series.
- Levels of hazardous / harmful drinking in 2017 were higher for men (33%) than for women (16%). The overall average weekly alcohol consumption for male drinkers (16.4 units) remained at around twice that for female drinkers (8.6 units).

The highest prevalence of drinking over 14 units a week was among those in the least deprived areas, they were also least likely to be non-drinkers

		Drinking over guidlines	Non-drinkers
5th (least deprived)		30%	12%
4th		26%	15%
3rd		23%	18%
2nd		19%	19%
1st (most deprived)		20%	23%

- In 2017, male drinkers drank an average of 8.0 units on their heaviest drinking day and the average was 5.3 units for women; a significant fall for women from 2016 (6.1 units).
- The percentage of men drinking more than four units on their heaviest drinking day declined from 2003 to 2017 (45% to 37%). Similarly, the percentage of women drinking more than three units on their heaviest drinking day declined (37% in 2003 to 29% in 2017).
- The percentage of men drinking more than eight units and women drinking more than six units on their heaviest drinking day also declined (24% in 2003 compared with 17% in 2017), with a significant fall since 2016 (from 20% to 17%).

The proportion of adults who drank on more than 5 days in the last week has remained around the same level since 2009 following a decrease from 2003

2003 17%
2009 11%
2017 11%
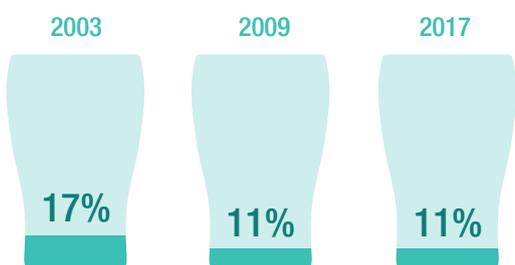
- In 2017, male drinkers consumed alcohol on more days per week than female drinkers on average (2.8 days compared with 2.4 days respectively).
- 13% of male drinkers and 9% of female drinkers drank alcohol on more than five days in the past week.
- Levels of hazardous, harmful or possibly dependent drinking behaviour as defined by AUDIT scores had fluctuated between 22% and 26% among men and between 10% and 13% among women since 2012.

4   ALCOHOL

Linsay Gray

4.1   INTRODUCTION

Problematic alcohol use is recognised as a major public health challenge in Scotland carrying a risk of physical and mental health problems, as well as social and economic losses to individuals and society[1]. Before Minimum Unit Pricing[2] was introduced on 1 May 2018 alcohol was 64 per cent more affordable in the UK than it was in 1980: it was possible in Scotland prior to 1 May 2018 to exceed the new lower risk guidelines for alcohol (14 units per week) for less than £2.50[3]. That figure is now £7. The chronic consumption of excessive quantities of alcohol leads to increased risks of high blood pressure, chronic liver disease and cirrhosis, pancreatitis, some cancers, mental ill-health and accidents [4]. The World Health Organization (WHO) cites that 3.3 million deaths (5.6% of all deaths) result from the harmful use of alcohol, and that death and disability caused by alcohol consumption can occur relatively early in life with 25% of the total deaths among those aged 20-39 being alcohol-attributable[5]. It also identifies higher levels of alcohol dependence and alcohol use disorders in the UK than across Europe as a whole[6].

In 2017, in Scotland, 19.6 units of alcohol were sold per adult per week, representing enough alcohol for every adult to substantially (by 40%) exceed the low risk weekly drinking guideline (14 units); nearly half (47%) of all off-trade alcohol was sold at below 50 pence per unit.[7]

As average alcohol consumption in a population increases so does the risk of alcohol related harm[8]. Alcohol-related mortality increased between 2012 and 2016, with 1,235 alcohol-related deaths in 2017[9]. There has been a 2% reduction in alcohol-related deaths in 2017 over the previous year, however they are still double the number in the early 1980s. In 2017, 1,120 people in Scotland died due to a cause wholly attributable to alcohol; an average of 22 people per week[10]. These alcohol-specific death rates continue to be higher in Scotland than in England & Wales; rates were more than twice as high in men and 75% higher in women in 2016[11]. There are more than 94,500 GP consultations and 36,235 hospital stays each year are for alcohol-related problems[12,13]. Although the rate of alcohol-related hospital stays has declined over the past 8 years, in 2016/17 the rate was over four times higher than in 1981/82[14].

Alcohol-related morbidity and mortality are not evenly distributed throughout the population and the burden is greatest among those living in the most deprived areas[15,16]. Alcohol-related admissions to general hospitals are linked to deprivation with nearly eight times as many people (per 100,000 population) admitted from the most deprived areas compared to the least deprived areas in 2016/17. In the psychiatric setting in 2015/16, the difference was more pronounced, with just over 15 times as many people from the most deprived areas[17].

The harms associated with alcohol misuse are not restricted to those consuming alcohol, with potential impacts on others of injury, neglect, abuse,

crime, and from concern for or fear of family members. A report published by Alcohol Focus Scotland in 2015 estimated that 1 in 2 people in Scotland are harmed as a result of someone else's drinking[18]. Those aged over 65 years are significantly more likely to report having experienced this kind of harm than younger age groups[19]. Evidence suggests a clear relationship between alcohol and crime with 60% of young offenders stating that they were drunk at the time of their offence[20]. In over two fifths (42%) of violent crimes in Scotland, the victim reported the offender was under the influence of alcohol[21]. Awareness of the harmfulness of alcohol has increased amongst the Scottish population with 60% citing it as the drug which causes most problems in Scotland[22].

Misuse of alcohol also has a negative impact on children with an estimated 36,000 to 51,000 children in Scotland living with a parent (or guardian) whose alcohol use is potentially problematic[23].

Between 2010 and 2015, there was a considerable decrease in the proportion of those aged 15 who reported drinking alcohol in the last week, from 34% to 17% according to the Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS)[24]. The proportion of pupils who had ever had an alcoholic drink had decreased since 2013 –the figure at its lowest level for both age groups than at any time since SALSUS began in 1990 (28% of those aged 13 and 66% of those aged 15). However Scotland remains one of the countries with the highest rates of alcohol use among young people in the world[25].

There are also economic impacts to problematic alcohol use; in 2010 the Scottish Government estimated that the excessive consumption of alcohol in Scotland costs £3.6 billion a year[26]. The most recent estimates (2007) are that over 1.7 million working days are lost per year in Scotland to reduced efficiency in the workplace due to the effects of alcohol, and a similar number lost due to alcohol-related absence[27].

4.1.1 Policy background

Being 'healthy and active' is recognised as one of the **National Outcomes** underpinning the Scottish Government's revised **National Performance Framework** to improve the wellbeing and quality of life of people in Scotland[28]. Tackling problematic alcohol use is integral to ensuring that people in Scotland are healthy and to reducing the inequalities that exist in society. The government's commitment to addressing problematic alcohol use is evidenced by the inclusion of a **National Performance Framework National Indicator** to 'reduce the proportion of people with multiple health risk behaviours[24] .

In January 2016, the UK Chief Medical Officers published new guidelines on alcohol consumption. This included advice that for both men and women that it is safest not to regularly consume more than 14 units of alcohol per week. This represents a reduction in the low risk guidelines for men. Advice was also included to spread the amount drunk over a number of days and limit the amount consumed in a single session[29].

The **Alcohol (Minimum Pricing) (Scotland) Act 2012** allowed for the setting of a price for a unit of alcohol, below which it cannot be sold. Following a public consultation[30], the Scottish Government set the minimum price at 50 pence per unit in 2018. This was considered to provide a proportionate response to tackling problematic alcohol use whilst providing a reasonable balance between public health and social benefits and intervention in the market. It is estimated that twenty years after implementation of the policy, when it is considered to have reached full effectiveness, there would be around 120 fewer alcohol-related deaths per annum and around 2,000 fewer hospital admissions per annum[31].

Between 2010 and 2016, evaluation of Scotland's alcohol strategy lay with NHS Health Scotland, through the Monitoring and Evaluating Scotland's Alcohol Strategy (MESAS) work programme, the final annual report was published in 2016. The MESAS group continues to monitor headline statistics for high-level indicators particularly relevant to the outcomes that Scotland's alcohol strategy set out to achieve with the second monitoring report published in 2018[32]. The impact of Minimum Unit Pricing itself will be subject to comprehensive evaluation[33].

The Fairer Scotland Action Plan[34], published in 2016, sets out plans for a new alcohol framework to tackle health inequalities through public health measures. The Scottish Government is refreshing the Alcohol Framework in 2018 to build on the progress made so far. In addition, measures to improve alcohol treatment and recovery support will be included in a new alcohol and drugs treatment strategy.

4.1.2 Measuring alcohol consumption in surveys

The alcohol consumption estimates discussed in this chapter are based on self-reported data collected during the survey interview. It is, however, important to note that surveys consistently obtain lower consumption estimates than those implied by alcohol sales or tax revenue data. This disjuncture can largely be explained by participants' under-reporting of consumption, due in part to not accounting for atypical / special occasion drinking[35], and there is also some evidence that survey non-responders are more likely than responders to engage in risky health behaviours, including hazardous alcohol use[36,37,38]. The most recently available annual estimates of alcohol sales in Scotland show that 10.2 litres (19.6 units per adult per week) of pure alcohol per person aged 16 years and over were sold in 2017 (the equivalent figure for England and Wales was 8.9 litres (17.2 units per adult per week)[39].

While self-reported survey estimates of consumption are typically lower than estimates based on sales data, surveys provide valuable information about the social patterning of individuals' alcohol consumption. Findings from SHeS have been used in the MESAS evaluation of the Alcohol Framework and in the modelling of estimated impact of minimum unit pricing on consumption patterns across different groups in society.

4.1.3 Reporting on alcohol consumption in the Scottish Health Survey (SHeS)

Key trends and breakdowns for weekly and daily alcohol consumption are updated and presented in this chapter. For weekly consumption, categories are based on the revised guidelines; hence all weekly consumption category figures for men, going back to 2003, have been revised. Figures for mean consumption are presented for drinkers only.

Problem drinking including levels of alcohol dependency and high risk alcohol use, as measured by the Alcohol Use Disorders Identification Test (AUDIT), are also presented.

The area deprivation data are presented in Scottish Index of Multiple Deprivation (SIMD) quintiles. To ensure that the comparisons presented are not confounded by the different age profiles of the quintiles, the data have been age-standardised. Readers should refer to the Glossary at the end of this Volume for a detailed description of both SIMD and age-standardisation.

Supplementary tables on alcohol consumption are also published on the Scottish Health Survey website[40].

4.1.4 Comparability with other UK statistics

The Health Surveys for England and Northern Ireland and the National Survey for Wales all provide estimates for alcohol consumption. A report published by the Government Statistical Service in 2016 advised that alcohol estimates across the UK were 'not comparable' at that time[41]. While questions are similar in each of the surveys, questions on alcohol consumption were delivered through self-completion in the Welsh Health Survey prior to 2015/16, complicating comparisons. These questions are now included in the National Survey for Wales which is delivered face-to-face; the same mode of collection as SHeS. However, categorisation of drinkers and non-drinkers is also inconsistent across the surveys and further differences exist in the way some alcoholic drinks are categorised. On these bases, no attempt is made to compare alcohol estimates from SHeS to those from other surveys.

4.2 METHODS AND DEFINITIONS

4.2.1 Methods

Questions about drinking alcohol have been included in SHeS since its inception in 1995. Questions are asked either face-to-face via the interviewer or included in the self-completion questionnaire if they are deemed too sensitive for a face-to-face interview (e.g. being interviewed with a parent). All those aged 16-17 years are asked about their consumption via the self-completion, as are some of those aged 18-19 years, at the interviewers' discretion. The way in which alcohol consumption is estimated in the survey was changed significantly in

2008. A detailed discussion of those revisions can be found in the chapter on alcohol consumption in the 2008 report[42].

In 2017, the SHeS questionnaire covered the following aspects of alcohol consumption:

- usual weekly consumption,
- daily consumption on the heaviest drinking day in the previous week,
- problem drinking.

Weekly consumption

Participants (aged 16 years and over) were asked preliminary questions to determine whether they drank alcohol at all. For those who reported that they drank, these were followed by further questions on how often during the past 12 months they had drunk each of six different types of alcoholic drink:

- normal beer, lager, stout, cider and shandy
- strong beer, lager, stout and cider
- sherry and martini
- spirits and liqueurs
- wine
- alcoholic soft drinks (alcopops)

From these questions, the average number of days per week the participant had drunk each type of drink was estimated. A follow-up question asked how much of each drink type they had usually drunk on each occasion. These data were converted into units of alcohol (see Section 4.2.2) and multiplied by the amount they said they usually drank on any one day[43].

Daily consumption

Participants were asked about drinking in the week preceding the interview, with actual consumption on the heaviest drinking day in that week then examined in more detail[44]. Details on the amounts consumed for each of the six types of drink listed in the weekly consumption section above were collected and converted into units of alcohol consumed.

Problem drinking

Since 2012 the AUDIT questionnaire has been used to assess problem drinking. AUDIT is widely considered to be the best screening tool for detecting problematic alcohol use. It comprises ten indicators of problem drinking: three indicators of consumption, four of use of alcohol considered harmful to oneself or others, and three of physical dependency on alcohol. Given the potentially sensitive nature of these questions, they were administered in self-completion format for all participants.

4.2.2 Calculating alcohol consumption in SHeS

The guidelines on lower risk drinking are expressed in terms of units of alcohol consumed. As discussed above, detailed information on both the volume of alcohol drunk in a typical week and on the heaviest drinking day in the week preceding the survey was collected from participants. The volumes reported were not validated. In the UK, a standard unit of alcohol is 10 millilitres or around 8 grams of ethanol. In this chapter, alcohol consumption is reported in terms of units of alcohol.

Questions on the quantity of wine drunk were revised in 2008. Since then, participants reporting drinking any wine have been asked what size of glass they drank from: large (250ml), medium (175ml) and small (125ml). In addition, to help participants make more accurate judgements they are also shown a showcard depicting glasses with 125ml, 175ml and 250ml of liquid. Participants also had the option of specifying the quantity of wine drunk in bottles or fractions of a bottle; with a bottle treated as the equivalent of six small (125ml) glasses. There are numerous challenges associated with calculating units at a population level, not least of which are the variability of alcohol strengths and the fact that these have changed over time. Table 4A below outlines how the volumes of alcohol reported in the survey were converted into units (the 2008 report provides full information about how this process has changed over time)[40]. Those who drank bottled or canned beer, lager, stout or cider were asked in detail about what they drank, and this information was used to estimate the amount in pints.

Age-standardised estimates for weekly alcohol consumption

4.2.3

The area deprivation data presented for weekly alcohol consumption are presented in Scottish index of Multiple Deprivation (SIMD) quintiles. To ensure that the comparisons presented are not confounded by the different age profiles of the quintiles, the data have been age-standardised. Readers should refer to the Glossary at the end of this Volume for a detailed description of SIMD and age-standardisation.

Table 4A Alcohol unit conversion factors

Type of drink	Volume reported	Unit conversion factor
Normal strength beer, lager, stout, cider, shandy (less than 6% ABV)	Half pint	1.0
	Can or bottle	Amount in pints multiplied by 2.5
	Small can (size unknown)	1.5
	Large can / bottle (size unknown)	2.0
Strong beer, lager, stout, cider, shandy (6% ABV or more)	Half pint	2.0
	Can or bottle	Amount in pints multiplied by 4
	Small can (size unknown)	2.0
	Large can / bottle (size unknown)	3.0
Wine	250ml glass	3.0
	175ml glass	2.0
	125ml glass	1.5
	750ml bottle	1.5 x 6
Sherry, vermouth and other fortified wines	Glass	1.0
Spirits	Glass (single measure)	1.0
Alcopops	Small can or bottle	1.5
	Large (700ml) bottle	3.5

4.2.4 Definitions

The UK alcohol guidelines consist of three recommendations:

- A weekly guideline on regular drinking;
- Advice on single episodes of drinking; and
- A guideline on pregnancy and drinking.

According to the weekly guideline, adults are safest not to regularly drink more than 14 units per week, to keep health risks from drinking alcohol to a low level. If you do drink as much as 14 units a week, it is best to spread this evenly over three days or more. On a single episode of drinking, advice is to limit the total amount drunk on any occasion, drink more slowly, drink with food and alternate with water. The guideline on drinking and pregnancy, or planning a pregnancy, advises that the safest approach is not to drink alcohol at all[29].

Consumption of more than three units (women) or four units (men) on a single day is also reported in this chapter. This allows comparison with previous SHeS reports although these volumes of alcohol are no longer included in the most recent guidance from the UK Chief Medical Officers. Consumption of double this amount (six units for women and eight for men) is also reported.

'Hazardous' / 'harmful' drinking can also be defined according to scores on the AUDIT questionnaire. Guidance on the tool, which is primarily intended to screen respondents for levels of alcohol dependency or high-risk use, has been published by the World Health Organisation (WHO). Section 4.2.5 includes a fuller description of the tool[45].

Alcohol Use Disorders Identification Test (AUDIT) scale.

The AUDIT questionnaire was primarily designed to screen for levels of alcohol dependency or high-risk use. In line with the WHO guidelines on using the tool, responses to each of the ten AUDIT questions were assigned values of between 0 and 4[46]. Scores for the ten questions were summed to form a scale, from 0 to 40, of alcohol use.

The WHO guidelines[47] for interpreting AUDIT scale scores are as follows:

Score	Category description
0 to 7	low-risk drinking behaviour, or abstinence
8 to 15	medium level of alcohol problems, with increased risk of developing alcohol-related health or social problems (sometimes described as hazardous drinking behaviour)
16-19	high level of alcohol problems, for which counselling is recommended (harmful drinking behaviour)
20 or above	warrants further investigation for possible alcohol dependence.

4.3   USUAL WEEKLY ALCOHOL CONSUMPTION

4.3.1   Trends in usual weekly alcohol consumption since 2003

There was a significant drop in prevalence of hazardous or harmful drinking levels among all adults between 2003 and 2013 (34% to 25% respectively) with prevalence remaining at a similar level since, fluctuating between 24% and 26% from 2014 to 2017. Trends for men and women show a similar pattern.

The mean number of units of alcohol consumed by all adults declined significantly from 2003 (16.1 units) to 2011 (13.1 units) and since then levels have remained stable, fluctuating between 12.2 and 13.3 units (12.5 units in 2017). A similar pattern was found for male and female drinkers (see Figure 4A). Male drinkers' mean reported weekly alcohol consumption declined by almost 5 units from 2003 (21.8 units) to 2011(17.0 units) and has fluctuated between 15.7 and 17.5 units since (16.4 units in 2017). Female drinkers mean alcohol unit consumption per week also decreased from 2003 (10.6 units) to 2011 (9.1 units) and has fluctuated between 8.6 and 9.3 units (8.6 units in 2017) since.

There have been significant increases since 2003 in the proportions of adults saying they did not drink alcohol; the percentage increased from 11% in 2003 to 17% in 2017. Non-drinking prevalence among men rose from 8% in 2003 to 14% in 2014, with similar levels thereafter (14% in 2017). Among women, 13% reported being non-drinkers in 2003 and 2008 rising to 20% in 2013 and remaining between 18% and 19% since (19% in 2017).   **Figure 4A, Table 4.1**

Figure 4A
Mean number of units of alcohol consumed per week among adults since 2003, by sex
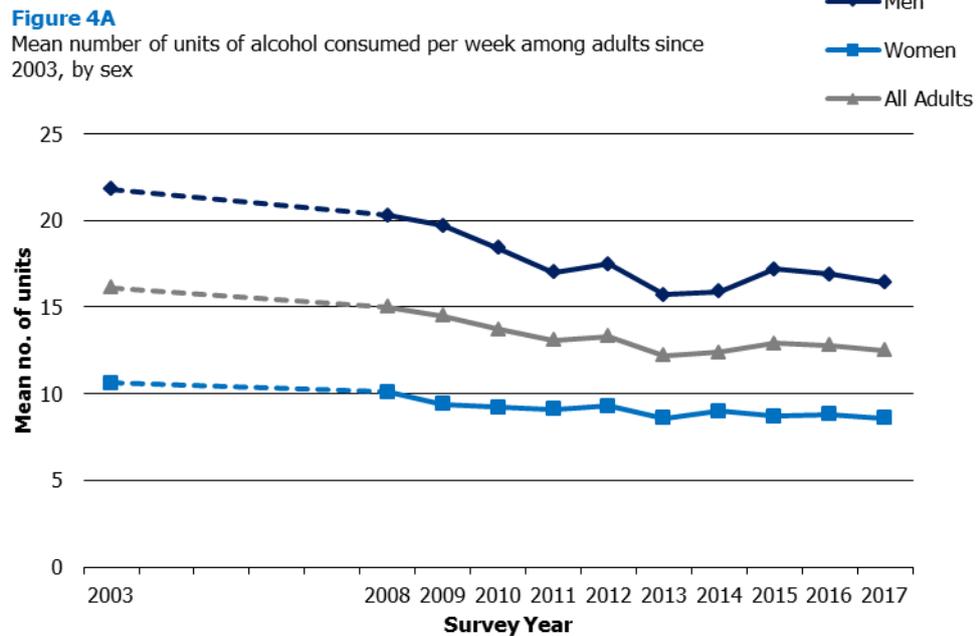
4.3.2   Usual weekly alcohol consumption in 2017, by age and sex

As in previous years, levels of hazardous/harmful drinking in 2017 were higher for men than for women (33% compared to 16% respectively). Prevalence of hazardous/harmful drinking varied by age for both men and women but with no discernible pattern. In men prevalence decreased from 35% among those aged 16-24 to 24% among those aged 35-44 and increased to the highest prevalence of 39% among those aged 55-64; decreasing again to the lowest prevalence amongst those aged 75 and over (23%). In women, prevalence decreased from 18% among those aged 16-24 to 9% among those aged 25-44, and increased to the highest prevalence (24%) among those aged 55-64; similarly to men, prevalence then decreased to its lowest among those aged 75 and over (5%).

The prevalence of non-drinking in 2017 also varied significantly by age for all adults with the highest prevalence among those aged 75 and over (35%) and the lowest amongst those aged 45-54 (12%). Patterns differed for men and women with the lowest non-drinking prevalence for men among those aged 25-34 (8%) and for women among those aged 35-44 and 45-54 (13%). The highest prevalence of non-drinking was among those aged 75 and over for both men and women (29% and 40% respectively).

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As for previous survey years, in 2017 the overall mean number of units of alcohol usually consumed per week for male drinkers (16.4 units) remains at around twice that of female drinkers (8.6 units). The mean number of units of alcohol usually consumed per week varied by age group. Among all adults the highest mean consumption was amongst the middle age groups (14.1 units for those aged 45-54 and 15.3 units for those aged 55-64) whilst the lowest mean consumption was amongst those aged 75 and over (8.6 units) closely followed by those aged 25-34 (9.2 units). This pattern was reflected in men, however the mean number of units consumed by women aged 16-24 was similar to that of women in the middle age groups (9.7 units for those aged 16-24 and 45-54, and 11.2 units for those aged 55-64).   **Table 4.2**

4.3.3   Usual weekly alcohol consumption in 2017 (age-standardised), by area deprivation

As in previous years, in 2017, the association between area deprivation and age-standardised alcohol consumption level categories (non-drinker and hazardous/harmful) was significant.

Among both men and women there were higher levels of hazardous/harmful drinking among those living in the least deprived quintiles than in the most deprived quintiles. For men, 37-38% drank at hazardous/harmful levels in the two least deprived quintiles compared with 26-31% in the remaining quintiles, for women 22% in the least deprived quintile were drinking at hazardous/harmful levels compared with 12-16% in the other quintiles.

The association between area deprivation and non-drinking prevalence was clear and consistent among adults. As in previous years, in 2017 the highest prevalence was reported among those living in the most deprived areas (23%) followed by a stepped decrease to 12% of those living in the least deprived areas (see Figure 4B). This pattern was observed for both men and women.

The mean units of alcohol consumed per week by all drinkers did not vary significantly by area deprivation in 2017. However women in the least deprived areas consumed more units per week on average than women in the most deprived areas (10.0 units compared to 7.8 units).

The figures suggest that mean units of alcohol consumed per week by hazardous/harmful drinkers was higher amongst those living in the most deprived areas than those living in the least deprived areas (mean units of alcohol consumed per week by hazardous/harmful drinkers steadily increased with deprivation from 28.2 units in the least deprived quintile areas to 37.1 units in the most deprived quintile areas). However due to small numbers in the hazardous/harmful drinkers category, this association was not statistically significant.   **Figure 4B, Table 4.3**

Figure 4B
Estimated weekly alcohol consumption level (age-standardised) in all adults, 2017, by area deprivation

Legend:
- Hazardous/Harmful
- Moderate
- Non-drinker

Y-axis: Percentage (0 to 100)
X-axis: Area Deprivation — 5th (Least deprived), 4th, 3rd, 2nd, 1st (Most deprived)
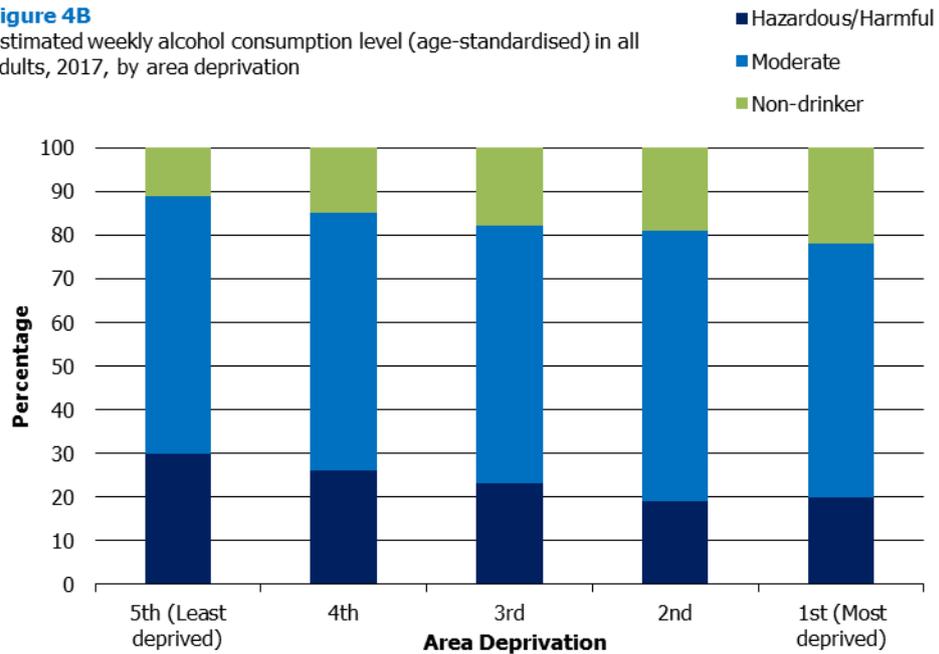
4.4 ALCOHOL CONSUMPTION ON THE HEAVIEST DRINKING DAY IN LAST WEEK

4.4.1 Trends in alcohol consumption on the heaviest drinking day in last week since 2003

The estimated mean number of units of alcohol consumed on the heaviest drinking day by adult drinkers fell significantly by one unit from 2003 (7.7 units) to 2017 (6.7 units), fluctuating between 7.6 and 6.9 over the intervening survey years.

Male drinkers drank on average 2.7 units more than female drinkers on their heaviest drinking day in 2017 (8.0 units for men compared with 5.3 units for women); men have consistently consumed more units on the heaviest drinking day than women since the start of the time-series. Among male drinkers the mean units of alcohol consumed on the heaviest drinking day fell from 9.0 units in 2003 to 8.0 units in 2017. The mean number of units for female drinkers has fallen significantly from 6.1 units in 2016 to 5.3 units in 2017. This is the lowest it has been since the beginning of the time series (from 2003 to 2016, figures have fluctuated between 5.6 and 6.2), see Figure 4C.

The percentage of men drinking more than four units on their heaviest drinking day has declined significantly from 2003 (45%) to 2017 (37%). The percentage of women drinking more than three units on their heaviest drinking day also declined significantly from 2003 (37%) to 2017 (29%).

The percentage of men drinking more than eight units on their heaviest drinking day declined significantly from 2003 (29%) to 2017 (21%), fluctuating between 27% and 24% over the intervening survey years. The trend for women drinking more than six units on their heaviest

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drinking day showed a significant decline from 19% in 2003 to 15% in 2012; levels were 14-17% thereafter until 2017 when it fell significantly to 13%. The figures for 2017 indicate a recent decline in the units consumed by adults on their heaviest drinking day; 2018 survey data will provide further insight into whether this indicates a further downward trend.   **Figure 4C, Table 4.4**

Figure 4C
Mean number of units of alcohol consumed on heaviest drinking day, 2003 to 2017
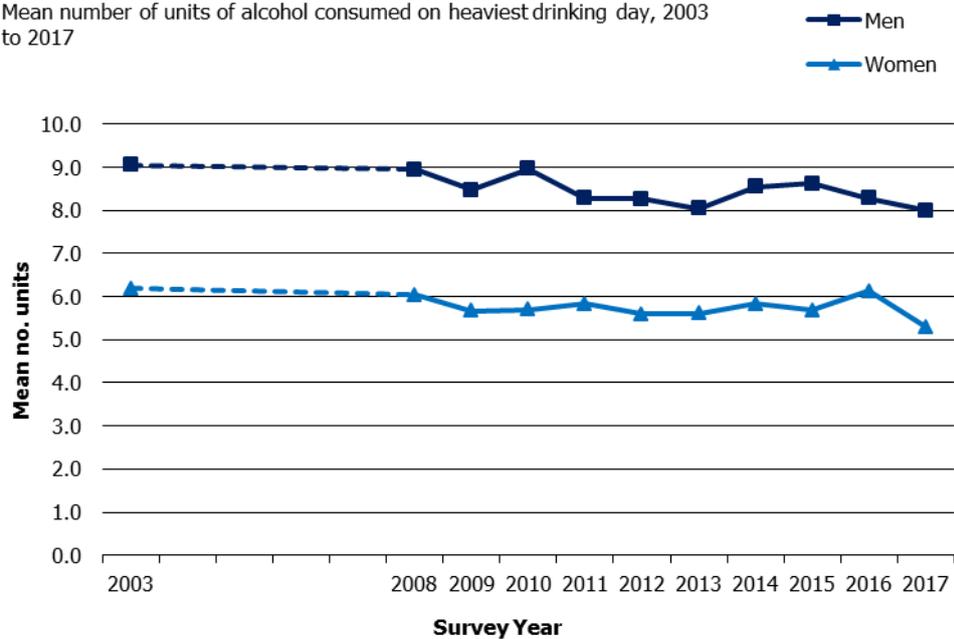
4.5   NUMBER OF DAYS ON WHICH DRANK ALCOHOL IN THE PAST WEEK

4.5.1   Trends in the number of days on which adults drank alcohol in the past week since 2003

The mean number of days on which adults drank alcohol in the last week significantly decreased from 3.0 days in 2003 to 2.7 days in 2009. Since then, the mean number of drinking days has remained relatively stable (2.6-2.7). This trend continued in 2017, with adults drinking alcohol on an average of 2.7 days per week.

This pattern was reflected in both men and women. For men, the mean number of days decreased significantly between 2003 (3.3) and 2009 (2.9), and has remained relatively stable since fluctuating between 2.7-2.9 (2.8 in 2017). For women, the mean number of days decreased significantly between 2003 (2.7) and 2008 (2.5), and has remained relatively stable since, fluctuating between 2.3-2.5 (2.4 in 2017).

For all adults who drank alcohol in the week prior to interview, the percentage drinking alcohol on more than five days in that week decreased significantly from 17% in 2003 to 10% in 2014 then, following a rise to 13% in 2016, the level returned to 11% in 2017. A similar pattern was found for both men and women.   **Figure 4D, Table 4.5**

Mean number of days on which adults drank alcohol in the last week, 2003-2017

Men
Women
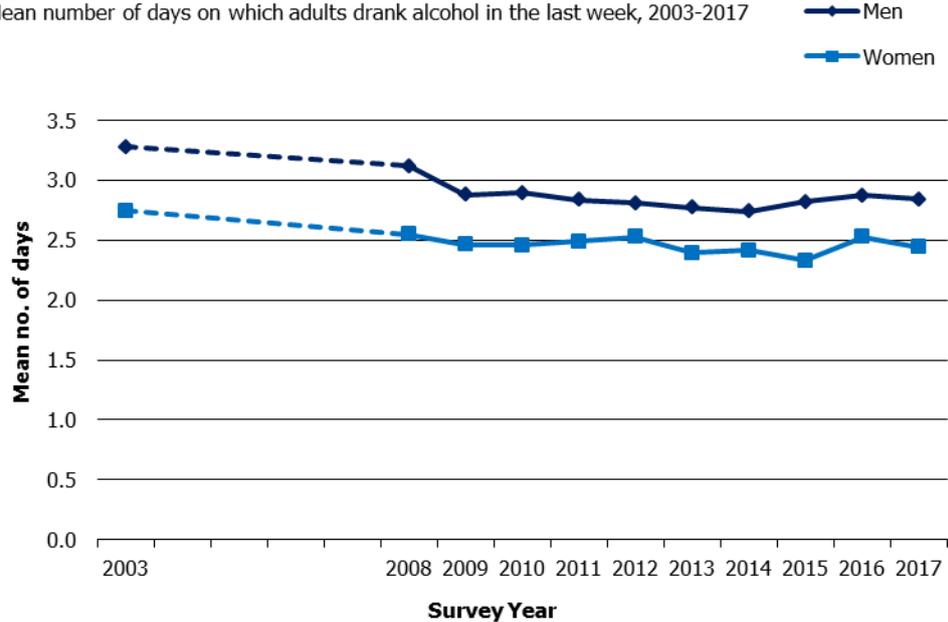
4.5.2 The number of days on which adult drinkers drank alcohol in the past week for 2016/2017 combined

As in previous years[48], in 2016/2017 male drinkers consumed alcohol on more days per week on average than female drinkers (2.9 days compared with 2.5 days respectively). For each age group the average number of days per week that alcohol was consumed ranged between 0.2 and 0.6 days higher for male than female drinkers.

As reported in previous surveys[49], in 2016/2017 the average number of days on which alcohol was consumed in the past week by adult drinkers generally increased with age (from between 2.0 and 2.2 days for those aged 16-44 to 3.6 days for those aged 75 and over). This was true for both men and women.

In 2016/2017, 12% of adult drinkers drank alcohol on more than five days in the past week with a significantly higher percentage of male drinkers (14%) than female drinkers (10%) doing so. Drinking on more than five days in the last week was significantly associated with age, rising from 3-6% among those aged 16-44 to 31% among those aged 75 years or over. A similar pattern was observed for both male and female drinkers.   **Table 4.6**

4.6 PROBLEM DRINKING IN 2016/2017 (COMBINED)

4.6.1 Trends in problem drinking since 2012

Drinking at low levels of risk or abstinence has remained relatively stable between 2012 and 2017 (fluctuating between 74%-78% among men and between 87%-90% among women).

Hazardous, harmful or possibly dependent drinking behaviour (AUDIT scores of 8 or more) among adults has remained at a similar level since 2013, fluctuating between 17% and 18% (17% in 2017). No discernible pattern was apparent for men or women; percentage values among men ranged between 22% and 26% since 2012 (25% in 2017) whilst among women the levels ranged between 10% and 13% (10% in 2017).

Prevalence of hazardous drinking (AUDIT score of 8-15) among adults has remained stable since 2012, fluctuating between 15% and 16% (16% in 2017). Similar patterns were found for men and women. Harmful drinking and possible alcohol dependence prevalence (AUDIT scores of 16 or more) have also remained stable for both men (between 3% and 4%) and women (between 1% and 2%) from 2012 to 2017.

Table 4.7

4.6.2 Problem drinking in 2016/2017 combined, by age

In 2016/2017, among all adults, 83% drank at a low level of risk or were abstinent (AUDIT score of 0-7), 16% drank at hazardous levels (AUDIT score of 8-15), 1% drank at harmful levels (AUDIT score of 16-19) and 1% had a possible alcohol dependency (AUDIT score of 20 or more) combined.

According to their AUDIT scores, men were significantly more likely than women to drink at hazardous levels (21% compared with 11% respectively), or to have possible alcohol dependency (2% compared with 1% respectively). Men were significantly less likely to drink at a low risk level or be abstinent than women (76% compared with 88% respectively).

As in previous years, AUDIT scores varied significantly by age in 2016/2017. The prevalence of drinking at low levels of risk or abstinence increased with age from 66% for adults aged 16-24 to 97% for those aged 75 and over; prevalence of hazardous drinking decreased by age from 30% among those aged 16-24 to 3% among those aged 75 and over.

Although prevalence of hazardous and harmful drinking (AUDIT score of 8 or more) declined with age for both men and women, men were more likely to continue to drink at a hazardous/harmful or possibly dependent level up to age 75 and over than women (8% of men aged 75 and over compared with less than 0.5% of women aged 75 and over).

Figure 4E, Table 4.8

Figure 4E
AUDIT scores for all adults, 2017, by age

Legend:
- Harmful drinking or alcohol dependence (16+)
- Hazardous drinking (8-15)
- Low risk drinking or abstinence (0-7)
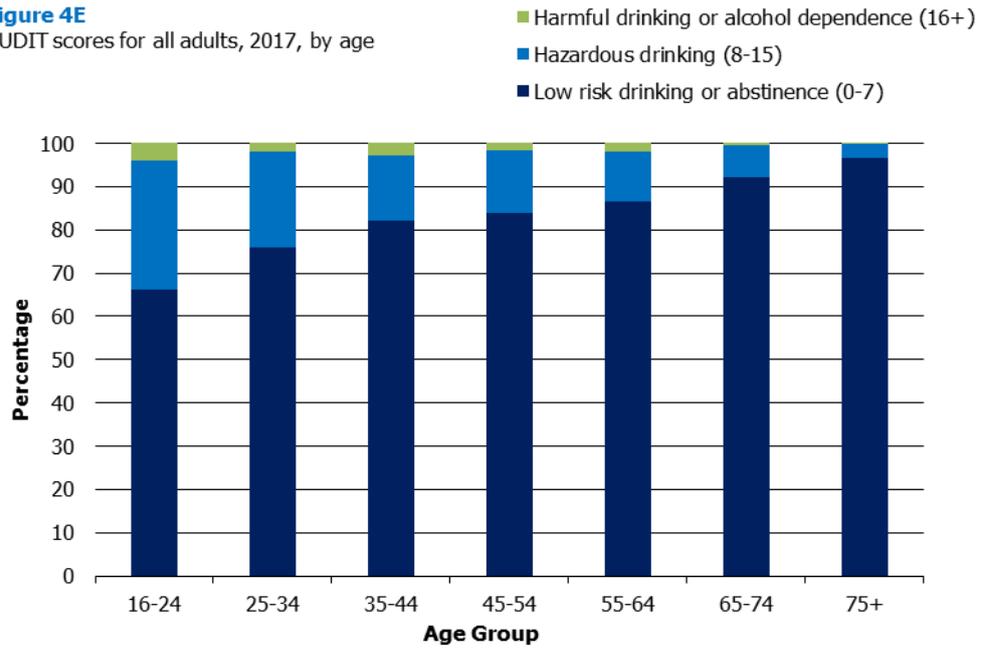
4.6.3 Problem drinking in 2016/2017, by area deprivation

Men living in the most deprived areas were more likely to drink at harmful levels and have possible alcohol dependence (AUDIT score of 16 or more) than those living in the least deprived areas (5% compared with 2% respectively). There was not a significant difference by deprivation for women. **Table 4.9**

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       special smoking and drinking self-completion questionnaire. Some aged 18 and 19 also completed
       the self-completion if the interviewer felt it was appropriate. For all other adult participants, the
       information was collected as part of the face-to-face interview. The method of estimating
       consumption follows that originally developed for use in the General Household Survey and is also
       used in the Health Survey for England. For six types of alcoholic drink (normal strength
       beer/lager/cider/shandy, strong beer/lager/cider, spirits/liqueurs, fortified wines, wine, and
       alcoholic soft drinks), participants were asked about how often they had drunk each one in the
       past twelve months, and how much they had usually drunk on any one day. The amount given to
       the latter question was converted into units of alcohol, with a unit equal to half a pint of normal
       strength beer/lager/cider/alcoholic soft drink, a single measure of spirits, one glass of wine, or one
       small glass of fortified wine. A half pint of strong beer/lager/cider was equal to 1.5 units. The
       number of units was then multiplied by the frequency to give an estimate of weekly consumption of
       each type of drink. The frequency multipliers were:

Drinking frequency	Multiplying factor
Almost every day	7.0
5 or 6 times a week	5.5
3 or 4 times a week	3.5
Once or twice a week	1.5
Once or twice a month	0.375
One every couple months	0.115
Once or twice a year	0.029

The separate consumption figures for each type of drink were rounded to two decimal places and then added together to give an overall weekly consumption figure.

44 Participants were first asked if they had drunk alcohol in the past seven days. If they had, they were asked on how many days and, if on more than one, whether they had drunk the same amount on each day or more on one day than others. If they had drunk more on one day than others, they were asked how much they drank on that day. If they had drunk the same on several days, they were asked how much they drank on the most recent of those days. If they had drunk on only one day, they were asked how much they had drunk on that day.

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46 AUDIT questionnaire

Questions	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking last year?	No		Yes, but not in the last year		Yes, during the last year

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Table list

Table 4.1 Estimated usual weekly alcohol consumption level, 2003 to 2017

Aged 16 and over   *2003 - 2017*

Alcohol units per week	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Men											
Estimated usual weekly alcohol consumption level[a]											
Non-drinker	8	10	10	12	11	12	12	14	14	13	14
Moderate	45	45	49	48	51	50	53	51	51	53	53
Hazardous / Harmful	47	44	41	39	38	38	34	35	36	35	33
Mean units per week[b]	21.8	20.3	19.7	18.4	17.0	17.5	15.7	15.9	17.2	16.9	16.4
SE of the mean	0.66	0.61	0.84	0.55	0.45	0.67	0.52	0.48	0.69	0.80	0.79
Women											
Estimated usual weekly alcohol consumption level[a]											
Non-drinker	13	13	16	17	17	17	20	18	18	19	19
Moderate	64	67	66	65	65	65	64	65	66	63	65
Hazardous / Harmful	23	20	18	18	18	18	16	17	17	17	16
Mean units per week[b]	10.6	10.1	9.4	9.2	9.1	9.3	8.6	9.0	8.7	8.8	8.6
SE of the mean	0.35	0.38	0.28	0.27	0.27	0.39	0.30	0.39	0.30	0.37	0.34
All adults											
Estimated usual weekly alcohol consumption level[a]											
Non-drinker	11	12	13	15	14	15	16	16	16	16	17
Moderate	55	57	58	57	58	57	59	59	58	58	59
Hazardous / Harmful	34	32	29	28	28	28	25	25	26	26	24
Mean units per week[b]	16.1	15.0	14.5	13.7	13.1	13.3	12.2	12.4	12.9	12.8	12.5
SE of the mean	0.39	0.38	0.47	0.33	0.30	0.40	0.33	0.35	0.39	0.47	0.45

Continued…

Table 4.1 *- Continued*

Alcohol units per week	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):											
Men	*3791*	*3011*	*3572*	*3388*	*3551*	*2253*	*2303*	*2171*	*2350*	*2031*	*1743*
Male drinkers	*3437*	*2673*	*3168*	*2953*	*3131*	*1963*	*2005*	*1844*	*2003*	*1744*	*1472*
Women	*4215*	*3317*	*3906*	*3711*	*3874*	*2464*	*2501*	*2389*	*2564*	*2199*	*1877*
Female drinkers	*3578*	*2831*	*3241*	*3047*	*3164*	*2022*	*1963*	*1951*	*2077*	*1736*	*1486*
All adults	*8006*	*6329*	*7478*	*7098*	*7425*	*4717*	*4805*	*4560*	*4914*	*4230*	*3619*
All drinkers	*7015*	*5504*	*6409*	*6000*	*6294*	*3985*	*3968*	*3795*	*4080*	*3480*	*2958*
Bases (unweighted):											
Men	*3558*	*2796*	*3272*	*3064*	*3239*	*2095*	*2108*	*2028*	*2212*	*1869*	*1576*
Male drinkers	*3218*	*2463*	*2876*	*2654*	*2842*	*1794*	*1815*	*1737*	*1856*	*1587*	*1313*
Women	*4482*	*3578*	*4227*	*4076*	*4220*	*2657*	*2724*	*2564*	*2723*	*2395*	*2066*
Female drinkers	*3791*	*3033*	*3481*	*3297*	*3415*	*2153*	*2144*	*2063*	*2156*	*1889*	*1626*
All adults	*8040*	*6374*	*7499*	*7140*	*7459*	*4752*	*4832*	*4592*	*4935*	*4264*	*3642*
All drinkers	*7009*	*5496*	*6357*	*5951*	*6257*	*3947*	*3959*	*3800*	*4012*	*3476*	*2939*

a Non-drinker: no units per week; Moderate: >0 units and up to 14 units; Hazardous/harmful: more than 14 units. Figures for men / all adults have been revised for 2003 to 2014 in line with these new guidelines
b Those who had consumed alcohol in the past year

Table 4.2 Estimated usual weekly alcohol consumption level, 2017, by age and sex

Aged 16 and over   *2017*

Alcohol units per week	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Estimated usual weekly alcohol consumption level[a]								
Non-drinker	14	8	16	12	14	15	29	14
Moderate	51	61	59	51	48	49	48	53
Hazardous / Harmful	35	31	24	37	39	36	23	33
Mean units per week[b]	15.2	11.9	16.4	19.0	19.5	17.9	13.2	16.4
SE of the mean	1.72	1.11	3.27	2.10	1.74	1.39	1.27	0.79
Women								
Estimated usual weekly alcohol consumption level[a]								
Non-drinker	18	20	13	13	16	24	40	19
Moderate	63	71	72	67	61	62	56	65
Hazardous / Harmful	18	9	15	20	24	14	5	16
Mean units per week[b]	9.7	6.2	8.6	9.7	11.2	7.9	4.8	8.6
SE of the mean	1.45	0.82	0.78	0.72	0.80	0.74	0.64	0.34
All adults								
Estimated usual weekly alcohol consumption level[a]								
Non-drinker	16	14	15	12	15	20	35	17
Moderate	57	66	66	60	54	56	52	59
Hazardous / Harmful	27	20	20	28	31	24	12	24
Mean units per week[b]	12.6	9.2	12.3	14.1	15.3	13	8.6	12.5
SE of the mean	1.19	0.74	1.66	1.09	1.03	0.93	0.78	0.45

Continued…

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Table 4.2 - Continued

Alcohol units per week	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	*223*	*294*	*269*	*313*	*281*	*220*	*142*	*1743*
Male drinkers	*188*	*269*	*215*	*273*	*242*	*187*	*99*	*1472*
Women	*206*	*301*	*283*	*345*	*298*	*242*	*201*	*1877*
Female drinkers	*168*	*239*	*238*	*299*	*245*	*178*	*118*	*1486*
All adults	*429*	*595*	*552*	*658*	*580*	*462*	*343*	*3619*
All drinkers	*357*	*508*	*453*	*572*	*487*	*365*	*218*	*2958*
Bases (unweighted):								
Men	*122*	*219*	*200*	*239*	*326*	*282*	*188*	*1576*
Male drinkers	*100*	*201*	*162*	*207*	*277*	*236*	*130*	*1313*
Women	*139*	*282*	*322*	*365*	*384*	*339*	*235*	*2066*
Female drinkers	*112*	*224*	*267*	*313*	*317*	*255*	*138*	*1626*
All adults	*261*	*501*	*522*	*604*	*710*	*621*	*423*	*3642*
All drinkers	*212*	*425*	*429*	*520*	*594*	*491*	*268*	*2939*

a Non-drinker: no units per week; Moderate: >0 units and up to 14 units; Hazardous / harmful: more than 14 units
b Those who had consumed alcohol in the past year

Table 4.3 Estimated usual weekly alcohol consumption level (age-standardised), 2017, by area deprivation and sex

Aged 16 and over   *2017*

Alcohol units per week	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
Estimated usual weekly alcohol consumption level[a]					
Non-drinker	11	13	14	16	18
Moderate	52	50	55	57	53
Hazardous / Harmful	38	37	31	26	29
Mean units per week (drinkers)[b]	15.9	16.6	16.3	14.8	17.8
SE of the mean	1.05	1.23	1.57	1.77	3.32
Mean units per week (hazardous / harmful drinkers)[c]	30.0	30.9	35.9	36.9	41.5
SE of the mean	1.60	1.89	3.47	4.35	7.42
Women					
Estimated usual weekly alcohol consumption level[a]					
Non-drinker	13	16	21	21	26
Moderate	66	69	63	67	61
Hazardous / Harmful	22	15	16	12	13
Mean units per week (drinkers)[b]	10.0	8.7	8.6	7.5	7.8
SE of the mean	0.67	0.64	0.78	0.86	0.88
Mean units per week (hazardous / harmful drinkers)[c]	25.1	27.8	26.9	[29.4]	[28.9]
SE of the mean	1.37	1.87	1.63	[3.72]	[2.79]

Continued…

Table 4.3 - Continued

Alcohol units per week	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
All adults					
Estimated usual weekly alcohol consumption level[a]					
Non-drinker	12	15	18	19	23
Moderate	59	59	59	62	58
Hazardous / Harmful	30	26	23	19	20
Mean units per week (drinkers)[b]	12.9	12.8	12.5	11.2	12.4
SE of the mean	0.68	0.74	0.99	1.06	1.60
Mean units per week (hazardous / harmful drinkers)[c]	28.2	30.0	32.7	34.5	37.1
SE of the mean	1.19	1.42	2.46	3.24	5.04
Bases (weighted):					
Men	*370*	*371*	*351*	*363*	*288*
Male drinkers	*328*	*317*	*294*	*301*	*233*
Male hazardous / harmful drinkers	*140*	*136*	*110*	*95*	*84*
Women	*398*	*360*	*375*	*372*	*372*
Female drinkers	*341*	*298*	*291*	*285*	*271*
Female hazardous / harmful drinkers	*86*	*54*	*59*	*45*	*47*
All adults	*768*	*731*	*727*	*735*	*659*
All drinkers	*670*	*615*	*585*	*586*	*504*
All hazardous / harmful drinkers	*227*	*190*	*169*	*140*	*131*
Bases (unweighted):					
Men	*308*	*371*	*354*	*310*	*233*
Male drinkers	*273*	*316*	*287*	*252*	*185*
Male hazardous / harmful drinkers	*122*	*128*	*103*	*85*	*76*
Women	*408*	*447*	*456*	*391*	*364*
Female drinkers	*344*	*367*	*353*	*297*	*265*
Female hazardous / harmful drinkers	*92*	*67*	*71*	*43*	*43*
All adults	*716*	*818*	*810*	*701*	*597*
All drinkers	*617*	*683*	*640*	*549*	*450*
All hazardous / harmful drinkers	*214*	*195*	*174*	*128*	*119*

a Non-drinker: no units per week; Moderate: >0 units and up to 14 units; Hazardous / harmful: more than 14 units

b Those who had consumed alcohol in the past year

c Those who drank an average of more than 14 units per week over the past year

Table 4.4 Estimated units consumed on heaviest drinking day, 2003 to 2017

Alcohol units per day	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Men											
Units consumed on heaviest drinking day (HDD)											
Consumed over 4 units on HDD	45	44	44	43	41	42	40	41	41	39	37
Consumed over 8 units on HDD	29	27	26	26	25	25	25	24	26	24	21
Mean units on HDD[a]	9.0	8.9	8.5	9.0	8.3	8.3	8.0	8.5	8.6	8.3	8.0
SE of the mean	0.21	0.25	0.21	0.27	0.20	0.27	0.26	0.27	0.29	0.27	0.31
Women											
Units consumed on heaviest drinking day (HDD)											
Consumed over 3 units on HDD	37	36	34	33	34	30	31	33	32	32	29
Consumed over 6 units on HDD	19	18	17	16	17	15	15	16	14	17	13
Mean units on HDD[a]	6.2	6.0	5.7	5.7	5.8	5.6	5.6	5.8	5.7	6.1	5.3
SE of the mean	0.14	0.21	0.14	0.14	0.12	0.16	0.15	0.23	0.26	0.28	0.18
All adults											
Units consumed on heaviest drinking day (HDD)											
Consumed over 3 / 4 units on HDD	41	40	39	38	37	36	35	37	36	36	33
Consumed over 6 / 8 units on HDD	24	22	21	21	20	20	19	20	20	20	17
Mean units on HDD[a]	7.7	7.6	7.2	7.4	7.1	7.1	6.9	7.2	7.2	7.3	6.7
SE of the mean	0.14	0.17	0.15	0.17	0.13	0.18	0.17	0.19	0.22	0.21	0.19

Continued…

Table 4.4   - Continued

Alcohol units per day	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):											
Men	*3819*	*3015*	*3521*	*3386*	*3549*	*2264*	*2267*	*2137*	*2299*	*2012*	*1698*
Male drinkers	*2742*	*2093*	*2453*	*2259*	*2362*	*1522*	*1474*	*1366*	*1462*	*1286*	*1030*
Women	*4254*	*3320*	*3865*	*3710*	*3860*	*2460*	*2498*	*2379*	*2541*	*2197*	*1870*
Female drinkers	*2453*	*1915*	*2152*	*2022*	*2096*	*1251*	*1248*	*1265*	*1329*	*1117*	*938*
All adults	*8073*	*6335*	*7385*	*7096*	*7409*	*4724*	*4765*	*4517*	*4841*	*4209*	*3568*
All drinkers	*5194*	*4008*	*4605*	*4281*	*4459*	*2773*	*2722*	*2630*	*2791*	*2402*	*1968*
Bases (unweighted):											
Men	*3580*	*2801*	*3244*	*3066*	*3242*	*2104*	*2081*	*2001*	*2170*	*1839*	*1538*
Male drinkers	*2576*	*1922*	*2242*	*2025*	*2150*	*1389*	*1342*	*1290*	*1362*	*1170*	*916*
Women	*4507*	*3579*	*4202*	*4083*	*4217*	*2659*	*2721*	*2552*	*2706*	*2391*	*2060*
Female drinkers	*2596*	*2021*	*2317*	*2168*	*2222*	*1339*	*1329*	*1327*	*1376*	*1198*	*1032*
All adults	*8087*	*6380*	*7446*	*7149*	*7459*	*4763*	*4802*	*4553*	*4876*	*4230*	*3598*
All drinkers	*5172*	*3943*	*4559*	*4193*	*4372*	*2728*	*2671*	*2617*	*2738*	*2368*	*1948*

a Those who had consumed alcohol in the past week

Table 4.5   Number of days on which adult drinkers drank alcohol in the past week, 2003 to 2017

Aged 16 and over and drank alcohol in past week   *2003 - 2017*

% who drank on >5 days / mean number of days drank alcohol in last week[a]	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Men											
Number of days on which drank alcohol in the past week[a]											
Drank on >5 days	20	17	14	15	13	13	12	11	14	15	13
Mean number of days	3.3	3.1	2.9	2.9	2.8	2.8	2.8	2.7	2.8	2.9	2.8
SE of the mean	0.05	0.05	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07
Women											
Number of days on which drank alcohol in the past week[a]											
Drank on >5 days	13	10	9	10	10	10	9	8	8	10	9
Mean number of days	2.7	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.3	2.5	2.4
SE of the mean	0.05	0.05	0.04	0.04	0.05	0.06	0.05	0.05	0.05	0.08	0.06
All adults											
Number of days on which drank alcohol in the past week[a]											
Drank on >5 days	17	14	11	13	12	12	11	10	11	13	11
Mean number of days	3.0	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.7	2.7
SE of the mean	0.04	0.04	0.03	0.04	0.04	0.05	0.04	0.05	0.05	0.06	0.05

Continued…

Table 4.5   *- Continued*

Aged 16 and over and drank alcohol in past week   *2003 - 2017*

% who drank on >5 days / mean number of days drank alcohol in last week[a]	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):											
Men	*2762*	*2160*	*2497*	*2307*	*2406*	*1551*	*1538*	*1437*	*1537*	*1330*	*1090*
Women	*2472*	*1953*	*2199*	*2070*	*2152*	*1283*	*1285*	*1301*	*1370*	*1143*	*965*
All adults	*5234*	*4113*	*4696*	*4377*	*4557*	*2834*	*2823*	*2738*	*2907*	*2473*	*2055*
Bases (unweighted):											
Men	*2590*	*1967*	*2266*	*2057*	*2174*	*1405*	*1392*	*1346*	*1421*	*1214*	*963*
Women	*2609*	*2053*	*2346*	*2200*	*2256*	*1361*	*1354*	*1360*	*1410*	*1222*	*1055*
All adults	*5199*	*4020*	*4612*	*4257*	*4430*	*2766*	*2746*	*2706*	*2831*	*2436*	*2018*

a Of those who drank alcohol in the last week

Table 4.6 Number of days on which adult drinkers drank alcohol in the past week, 2016/2017 combined, by age and sex

Aged 16 and over and drank alcohol in past week   *2016/2017 combined*

% who drank on >5 days / mean number of days drank alcohol in last week[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Number of days on which drank alcohol in the past week[a]								
Drank on >5 days	6	4	7	14	18	27	35	14
Mean number of days	2.3	2.1	2.4	3.0	3.3	3.6	3.9	2.9
SE of the mean	0.18	0.10	0.11	0.11	0.11	0.12	0.18	0.05
Women								
Number of days on which drank alcohol in the past week[a]								
Drank on >5 days	6	1	4	9	12	20	27	10
Mean number of days	2.1	1.8	2.1	2.5	2.9	3.1	3.3	2.5
SE of the mean	0.23	0.08	0.08	0.09	0.09	0.13	0.19	0.05
All adults								
Number of days on which drank alcohol in the past week[a]								
Drank on >5 days	6	3	5	12	15	24	31	12
Mean number of days	2.2	2.0	2.2	2.7	3.1	3.4	3.6	2.7
SE of the mean	0.15	0.08	0.07	0.08	0.08	0.10	0.14	0.04
Bases (weighted):								
Men	*296*	*412*	*343*	*465*	*413*	*321*	*171*	*2421*
Women	*268*	*303*	*325*	*432*	*394*	*248*	*137*	*2108*
All adults	*564*	*715*	*669*	*897*	*807*	*569*	*308*	*4529*
Bases (unweighted):								
Men	*160*	*276*	*272*	*393*	*452*	*408*	*216*	*2177*
Women	*174*	*273*	*360*	*471*	*491*	*353*	*155*	*2277*
All adults	*334*	*549*	*632*	*864*	*943*	*761*	*371*	*4454*

a Of those who drank alcohol in the last week

Table 4.7 AUDIT scores, 2012 to 2017

Aged 16 and over   *2012 - 2017*

AUDIT score	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%
Men						
Low risk drinking or abstinence (0-7)	75	75	77	74	78	75
Hazardous drinking (8-15)	21	21	20	22	19	22
Harmful drinking (16-19)	3	2	2	3	2	1
Possible alcohol dependence (20+)	1	2	1	2	1	2
Score of 8 or more	*25*	*25*	*23*	*26*	*22*	*25*
Score of 16 or more	*4*	*4*	*3*	*4*	*3*	*3*
Women						
Low risk drinking or abstinence (0-7)	87	90	88	89	87	90
Hazardous drinking (8-15)	11	9	10	10	12	9
Harmful drinking (16-19)	1	1	1	1	1	0
Possible alcohol dependence (20+)	1	0	1	1	1	0
Score of 8 or more	*13*	*10*	*12*	*11*	*13*	*10*
Score of 16 or more	*2*	*1*	*2*	*1*	*1*	*1*
All adults						
Low risk drinking or abstinence (0-7)	81	83	82	82	82	83
Hazardous drinking (8-15)	16	15	15	16	16	16
Harmful drinking (16-19)	2	1	2	2	1	1
Possible alcohol dependence (20+)	1	1	1	1	1	1
Score of 8 or more	*19*	*17*	*18*	*18*	*18*	*17*
Score of 16 or more	*3*	*2*	*3*	*3*	*2*	*2*
Bases (weighted):						
Men	*2033*	*2107*	*2004*	*2115*	*1845*	*1516*
Women	*2232*	*2336*	*2202*	*2324*	*2010*	*1649*
All adults	*4265*	*4444*	*4207*	*4439*	*3854*	*3165*
Bases (unweighted):						
Men	*1877*	*1939*	*1854*	*1958*	*1686*	*1359*
Women	*2408*	*2541*	*2377*	*2450*	*2181*	*1816*
All adults	*4285*	*4480*	*4231*	*4408*	*3867*	*3175*

Table 4.8 AUDIT scores, 2016/2017 combined, by age and sex

Aged 16 and over   *2016/2017 combined*

AUDIT score	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Low risk drinking or abstinence (0-7)	62	66	77	78	82	87	92	76
Hazardous drinking (8-15)	33	30	19	20	14	12	7	21
Harmful drinking (16-19)	3	1	2	1	1	1	-	1
Possible alcohol dependence (20+)	2	2	1	2	2	0	1	2
Score of 8 or more	*38*	*34*	*23*	*22*	*18*	*13*	*8*	*24*
Score of 16 or more	*5*	*3*	*4*	*2*	*3*	*1*	*1*	*3*
Women								
Low risk drinking or abstinence (0-7)	71	85	86	89	91	97	100	88
Hazardous drinking (8-15)	26	14	12	10	9	3	0	11
Harmful drinking (16-19)	2	0	1	0	0	0	-	1
Possible alcohol dependence (20+)	1	0	1	1	0	-	-	1
Score of 8 or more	*29*	*15*	*14*	*11*	*9*	*3*	*0*	*12*
Score of 16 or more	*3*	*1*	*2*	*1*	*1*	*0*	*-*	*1*
All adults								
Low risk drinking or abstinence (0-7)	66	76	82	84	87	92	97	83
Hazardous drinking (8-15)	30	22	15	15	12	7	3	16
Harmful drinking (16-19)	2	1	1	1	1	0	-	1
Possible alcohol dependence (20+)	2	1	1	1	1	0	0	1
Score of 8 or more	*34*	*24*	*18*	*16*	*13*	*8*	*3*	*17*
Score of 16 or more	*4*	*2*	*3*	*2*	*2*	*0*	*0*	*2*
Bases (weighted):								
Men	*472*	*566*	*511*	*595*	*547*	*411*	*261*	*3362*
Women	*455*	*592*	*543*	*665*	*562*	*478*	*359*	*3656*
All adults	*927*	*1158*	*1055*	*1260*	*1109*	*889*	*620*	*7018*
Bases (unweighted):								
Men	*272*	*389*	*411*	*502*	*612*	*530*	*329*	*3045*
Women	*321*	*555*	*597*	*715*	*712*	*675*	*422*	*3997*
All adults	*593*	*944*	*1008*	*1217*	*1324*	*1205*	*751*	*7042*

Table 4.9 AUDIT scores (age-standardised), 2016/2017 combined, by area deprivation and sex

Aged 16 and over   *2016/2017 combined*

AUDIT score	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
Low risk drinking or abstinence (0-7)	79	76	75	77	75
Hazardous drinking (8-15)	19	22	22	20	19
Harmful drinking (16-19)	1	1	2	1	2
Possible alcohol dependence (20+)	1	1	1	2	3
Score of 8 or more	*21*	*24*	*25*	*23*	*25*
Score of 16 or more	*2*	*2*	*3*	*3*	*5*
Women					
Low risk drinking or abstinence (0-7)	89	88	88	87	88
Hazardous drinking (8-15)	9	11	11	12	11
Harmful drinking (16-19)	1	0	0	0	1
Possible alcohol dependence (20+)	1	0	0	1	0
Score of 8 or more	*11*	*12*	*12*	*13*	*12*
Score of 16 or more	*2*	*1*	*1*	*1*	*1*
All adults					
Low risk drinking or abstinence (0-7)	84	82	82	82	82
Hazardous drinking (8-15)	14	17	16	16	15
Harmful drinking (16-19)	1	1	1	1	1
Possible alcohol dependence (20+)	1	1	0	1	2
Score of 8 or more	*16*	*18*	*18*	*18*	*18*
Score of 16 or more	*2*	*1*	*2*	*2*	*3*
Bases (weighted):					
Men	*740*	*682*	*681*	*650*	*606*
Women	*785*	*681*	*747*	*711*	*733*
All adults	*1526*	*1363*	*1427*	*1361*	*1339*
Bases (unweighted):					
Men	*658*	*703*	*674*	*547*	*463*
Women	*825*	*869*	*903*	*731*	*669*
All adults	*1483*	*1572*	*1577*	*1278*	*1132*

Chapter 5

Smoking

SUMMARY
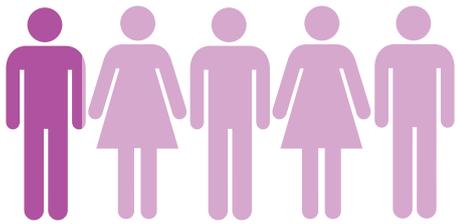
18% of adults smoked in 2017, down from 21% in 2016 and 28% in 2003

- Smoking prevalence was highest among adults aged 25-34 (24%) and lowest among those aged 75 and over (6%) in 2017.

16% of women reported they currently smoke, down from 28% in 2003

Women smoked on average... **11.4** cigarettes per day in 2017 down from 14.7 in 2003

20% of men reported they currently smoke, down from 29% in 2003

Men smoked on average... **13.2** cigarettes per day in 2017 down from 15.9 in 2003

- The percentage of adults who had never smoked regularly or at all increased from 50% in 2003 to 56% in 2017; the figure for ex-regular smoking increased from 22% to 26%.
- Younger adult smokers (aged 16-44) smoked fewer cigarettes per day on average (between 9.6 and 11.4 cigarettes) than those aged 45 and over (between 13.8 and 14.3 cigarettes).

Prevalence of smoking varied by area deprivation level

27% in the most deprived areas

9% in the least deprived areas
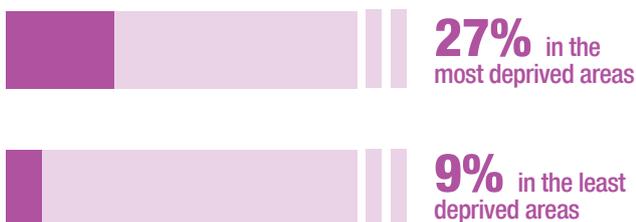
There has been a significant decrease in the proportion of children who are exposed to second-hand smoke in their own home

12% in 2012   **6%** in 2017
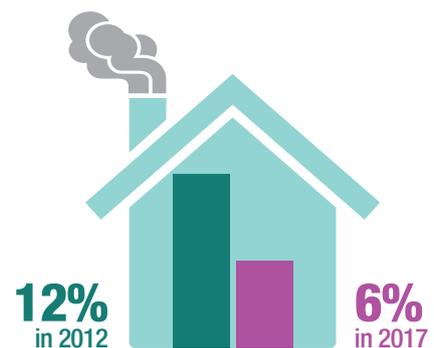
- There was a clear deprivation gradient in the numbers of cigarettes smoked (13.4 in the most deprived areas compared to 8.6 in the least deprived areas).

The gap between smoking prevalence in different areas of deprivation has narrowed but rates remain around 3 times higher in the most deprived areas

2003	
Most	45%
Least	17%

2017	
Most	27%
Least	9%

Difference in 2003: **28 percentage points**
Difference in 2017: **18 percentage points**
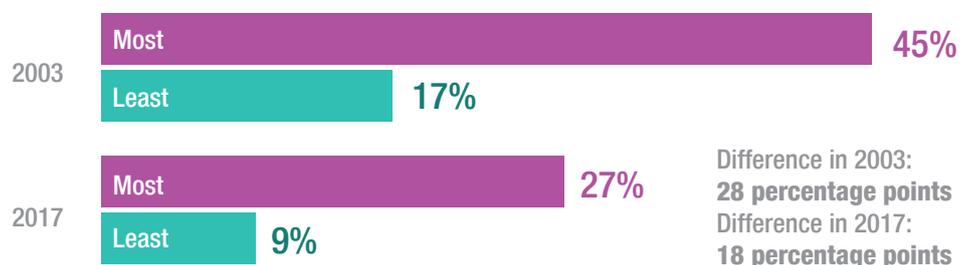
SUMMARY

The proportion of non-smoking adults exposed to second-hand smoke (based on detectable salivary cotinine), has fallen:

85%
2003

24%
2016/17

- Current cigarette smoking prevalence corrected for cotinine levels was 31% for men and 22% for women in 2016/2017.
- 50% of adult non-smokers living in the most deprived areas had detectable salivary cotinine (suggesting exposure to second hand smoke), compared with 13% of those living in the least deprived areas.

- -

- In 2017, 48% of cotinine-validated, self-reported non-smoking adults said they were not exposed to smoke in any of the places they were asked about (at their own / other's home, at work, in cars / vans, outside buildings, or in public places).

Younger age groups were less likely than older to live in homes with no restriction on smoking

2-4%
aged 16-44

7-9%
aged 45 and over
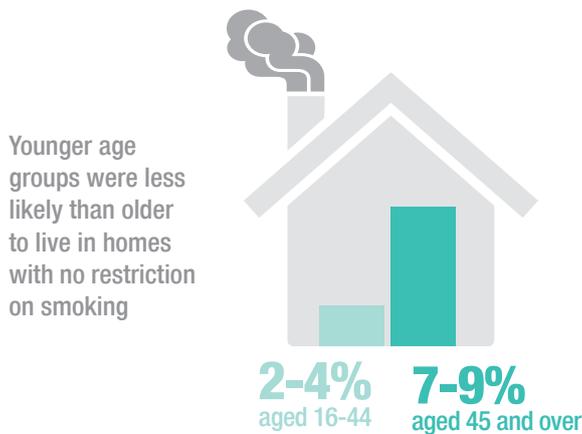
Those in the least deprived areas were most likely to live in homes where people cannot smoke indoors or outdoors

Area	
5th (least deprived)	**29%**
4th	**21%**
3rd	**17%**
2nd	**13%**
1st (most deprived)	**12%**

- In 2017, current e-cigarettes use among adults was 7%, the same level as in 2015 and 2016 and a significant increase from 5% since 2014.
- The proportion of adults that had ever used e-cigarettes increased from 15% in 2014 to 19% in 2017.
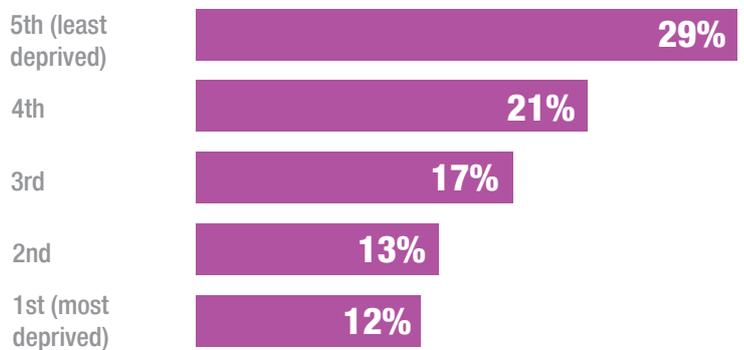
In 2017, levels of e-cigarette usage was highest in the middle age groups

5%
aged 16-24

8-11%
aged 25-64

1-6%
aged 65+
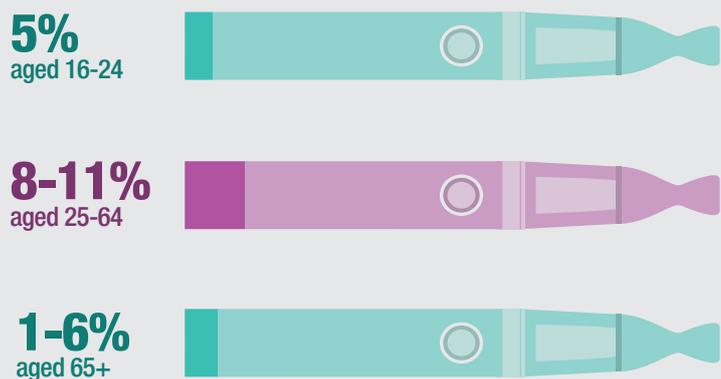
5 SMOKING

Linsay Gray and Alastair H Leyland

5.1 INTRODUCTION

Nationally[1] and globally[2], tobacco use is the leading cause of premature mortality and preventable poor health. Tobacco use is associated with stillbirths and infant deaths, childhood respiratory diseases, and communicable as well as non-communicable diseases in adulthood[3]. Each year tobacco use costs over half a trillion dollars worldwide and kills around seven million people[4]. More than six million of the deaths are caused by direct tobacco use while more than 890,000 are the consequence of non-smokers being exposed to second-hand smoke[5]. In Scotland alone, tobacco use is associated with around 10,000 deaths each year (around a fifth of all deaths)[6].

5.1.1 Policy background

Tobacco control policies have led to significant declines in adult smoking levels in Scotland in recent decades[7]. One of the Scottish Government's National Outcomes is the overall strategic objective for health: We are healthy and active[8]. This is supported by a number of National Indicators that are relevant to smoking[9] which are monitored using data from the Scottish Health Survey (SHeS). In addition to the new Health Risk Behaviour indicator which includes current smokers, there are more general related indicators including healthy life expectancy and premature mortality.

In 2013 the Scottish Government set out its ambition to create a 'tobacco-free generation' (defined as 'a smoking prevalence among the adult population of 5% or lower') by the year 2034.

Since 2013 a number of key actions have been set for local authorities and partners including full implementation of smoke-free policies for local authority grounds. Working with COSLA, NHS Health Scotland published guidance in January 2018 to facilitate such action[10]. The NHS Local Delivery Plan (LDP) Standards require NHS Boards to sustain and embed successful smoking quits at twelve weeks post quit, in the 40% most deprived SIMD areas (60% in the Island Boards)[11]. Smoking rates in these SIMD areas are significantly higher than in more affluent SIMD areas. The targeting of these areas through LDP Standards has been recognised by organisations such as Cancer Research UK as having a positive effect in health equalities[12]. Smoking cessation interventions, including pharmacotherapy, are among the most cost-effective health care interventions available[13].

In 2018, the Scottish Government published its 'Tobacco Control Action Plan'[14] which sets out a five year plan of interventions and policies to help reduce the use of and associated harms from using tobacco in Scotland. The action plan continues the Scottish Government's focus on achieving the 'tobacco-free generation' ambition. The actions include raising awareness through campaigns, encouraging healthier behaviour

in schools, universities, workplaces and healthcare settings, improving cessation services and regulations on smoking in prisons, the advertisement of e-cigarettes and restrictions on heated tobacco products. The Scottish Prison Service has set the target for all prisons in Scotland to be smoke-free by the end of 2018[15].

The Health (Tobacco, Nicotine etc. and Care) (Scotland) Act 2016 was commenced on 1 April 2017. The Act includes provisions to regulate:

- the introduction of a minimum age of 18 for the sale of Nicotine Vapour Products (NVPs) – including electronic cigarettes.
- a ban on the purchase of NVPs on behalf of an under 18 – 'proxy purchase'.
- the introduction of mandatory registration for the sale of NVPs.
- bans on certain forms of domestic advertising and promotion of NVPs.
- the introduction of an age verification policy for sales of tobacco and NVPs by under 18s ('Challenge 25').
- a prohibition on the sale of NVPs from vending machines.
- a ban on unauthorised sales of tobacco and NVPs by under 18s.
- the introduction of statutory smoke-free perimeters around buildings on NHS hospital sites.

Regulation on most of these provisions came into force in 2017.

The most recent primary legislation on smoking passed by the Scottish Parliament is the Smoking Prohibition (Children in Motor Vehicles) (Scotland) Act 2016 which deems as an offence smoking in cars in a public place in the presence of children[16].

All across the UK new regulations came into force on 21 May 2017 making it an offence to sell cigarettes in any pack containing less than 20 cigarettes, and ensuring all cigarettes are sold in standardised brand-neutral packs.

One set of these new regulations also restricted the strength, availability and access to electronic cigarettes – banning cross-border advertising and promotion on, TV, radio, online, by e-mail and in print media. Further restrictions on advertising and promoting electronic cigarettes in Scotland are planned for 2019.

5.1.2 Reporting on smoking in the Scottish Health Survey (SHeS)

Reliable data on smoking behaviour, cessation, Nicotine replacement therapy (NRT) use and exposure to second-hand smoke are vital to effective monitoring of trends relevant to the various targets in place. This chapter presents prevalence of adult cigarette smoking and e-cigarette use. Figures for smoking prevalence based on self-report are provided alongside prevalence rates using saliva cotinine adjustment. Trends in cigarette smoking prevalence by deprivation are also shown. Exposure to second-hand smoke among adults and children is also

examined. For adults second-hand smoke exposure was identified through the analysis of cotinine in saliva samples and for children via self-reported information.

The area deprivation data are presented in Scottish Index of Multiple Deprivation (SIMD) quintiles. Readers should refer to the Glossary at the end of this Volume for a detailed description of SIMD.

The area deprivation trend data have been age-standardised using 2016 mid-year household population estimates applied to each year 2008 to 2017 separately. This enables comparisons across years to be made without estimates being affected by changes to the age composition of the population. However figures may differ slightly from previously published figures using different mid-year population estimates. The closest SIMD rating was used for each year of the data: 2017 data uses the 2016 ranking (as does 2016) whereas the 2012 data uses the 2012 ranking (as does 2010-2015) and the 2008 and 2009 data uses the 2009 ranking.

Supplementary tables are also available on the Scottish Government SHeS website[17].

5.1.3 Comparability with other UK statistics

The Health Survey for England, Health Survey for Northern Ireland and the National Survey for Wales provide estimates of smoking prevalence in the other home nations within the UK. The surveys are conducted separately and have different sampling methodologies, so smoking prevalence estimates across the surveys are only partially comparable[18]. Smoking prevalence estimates from the UK-wide Integrated Household Survey for Scotland, Wales, England and Northern Ireland have been deemed to be fully comparable[19].

5.1.4 Adolescent smoking in Scotland

Smoking rates for 13 and 15 year olds are available from The Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS). This survey is conducted on a biennial basis, targeting secondary school pupils in local authority and independent schools[20].

5.2 METHODS AND DEFINITIONS

5.2.1 Methods of collecting data on smoking behaviour

Adults aged 20 and over were asked about their smoking behaviour during the face to face interview. For those aged 16 and 17, information was collected in a self-completion questionnaire offering more privacy and reducing the likelihood of concealing behaviour in front of other household members. At the interviewer's discretion those aged 18 and 19 could answer the questions either face to face or via the self-completion booklet.

5.2.2 Questions on smoking behaviour

Questions on smoking have been included in SHeS since 1995. Some small changes were made to the questions in 2008 and 2012. These are outlined in the relevant annual reports[21,22].

The current questions in the survey focus on:

- current smoking status
- frequency and pattern of current smoking
- the number of cigarettes smoked by current smokers
- ex-smokers' previous smoking history
- exposure to second-hand smoke
- past smoking behaviour
- quit attempts and desire to give up smoking
- medical advice on giving up smoking
- NRT use
- e-cigarette use (including as part of a quit attempt)

While the self-completion questions were largely similar to those asked in the face to face interview, the self-completion questionnaire did exclude questions on: past smoking behaviour, desire to give up smoking and medical advice to stop smoking.

5.2.3 Questions on e-cigarette use

From 2014, SHeS has gathered information on the use of e-cigarettes among the Scottish adult population, in response to their increased availability and high profile. The questions ask whether participants have ever used an e-cigarette as well as whether they are currently using an e-cigarette.

5.2.4 Methods of collecting data on exposure to second-hand smoke

Participants on SHeS were asked whether they are regularly exposed to other people's tobacco smoke from a list of pre-defined spaces including:

- At own home
- At work
- In other people's homes
- In cars, vans etc
- Outside of buildings (e.g. pubs, shops, hospitals)
- In other public places

They were then asked whether this bothered them at all.

In addition to the self-reported measure a subsample of participants were asked to provide a saliva sample which was analysed for cotinine. This analysis identified non-smokers who were exposed to a level of cotinine that indicated that they were exposed to second-hand smoke.

5.2.5 Definitions

Cigarette smoking status

Information on cigar and pipe use is collected in the survey but as prevalence is low these are not considered in the definition of current smoking. Smoking status categories reported here are:

- current cigarette smoker
- ex-regular cigarette smoker
- never regular cigarette smoker
- never smoked cigarettes at all

Cotinine adjusted smoking status

The saliva cotinine adjustment adjusts original self-reported cigarette smoking levels by including those with cotinine levels in their saliva above 12ng/ml; this indicates that the individual is using nicotine either from tobacco, e-cigarettes or NRT. For self-reported non-smokers this therefore indicates exposure beyond what would be expected from contact with second-hand cigarette smoke and hence suggests misreporting of smoking behaviour in the main interview.

Those who stated that they used either e-cigarettes or NRT products but did not currently smoke were excluded from the calculation of smoking prevalence estimates in Table 5.5 (showing figures both adjusted for saliva cotinine and unadjusted). This was because it was not possible to tell whether any raised cotinine levels among this group were due to e-cigarettes and NRT products alone, or additionally to unreported smoking.

Exposure to second-hand smoke

Exposure to second-hand smoke for children is measured in two ways in the survey:

- whether there is someone who regularly smokes inside the accommodation where the child lives, and
- parents' and older children's (aged 13-15) reports of whether children are exposed to smoke at home.

In addition exposure to second-hand smoke for adults is also measured in two ways:

- Self-reported information about whether they have been exposed to second-hand smoke in a number of places including in their own home, someone else's home, work or outside of buildings
- Analysis of cotinine levels in saliva (see above).

5.3 CIGARETTE SMOKING STATUS

5.3.1 Trends in cigarette smoking status since 2003

Current smoking prevalence for adults fell significantly from 28% in 2003 to 21% in 2013; subsequently, the figures had remained relatively stable at 21-22% until 2016 before dropping significantly again to 18% in 2017 (see Figure 5A). This fall is in line with the Adult Smoking Habits in the UK for 2017 conducted by Office of National Statistics which also suggests a substantial recent drop in smoking in Scotland[23]. Similar patterns were found for women and men whereby smoking prevalence had fallen between 2016 and 2017 (23% to 20% for men and 20% to 16% for women) however this reduction was only significant among women.

Figure 5A
Current cigarette smoking prevalence among adults aged 16+, 2003-2017, by sex
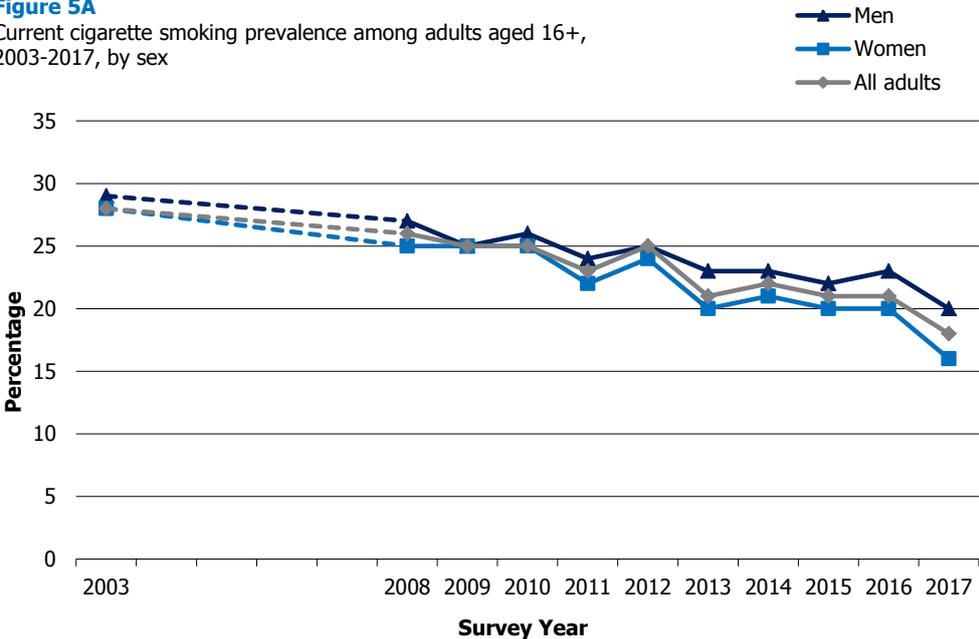
The percentage of adults who had never smoked regularly or had never smoked at all increased from 50% in 2003 to 55% in 2011. There has been no significant change in the time period since, with the proportion of adults who had never smoked ranging from 54-56% between 2012 and 2017. The percentage of all adults reporting that they were ex-regular smokers increased overall between 2003 (22%) and 2017 (26%). The trends in those reporting that they had never smoked or were ex-regular smokers were similar for men and women.

There has been a significant drop over time in the mean number of cigarettes smoked per day by current adult smokers from 15.3 in 2003 to 12.3 in 2017. A similar pattern was found for both men and women, as can be seen in Figure 5B (from 15.9 in 2003 to 13.2 in 2017 for men and from 14.7 in 2003 to 11.4 in 2017 for women).

Figures 5A and 5B, Table 5.1

Mean number of cigarettes smoked per day among current smoking adults, 2003 to 2017, by sex

Legend:
- Men
- Women
- All adults

Mean no. of cigarettes (y-axis: 0.0 to 18.0)

Survey Year (x-axis: 2003, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017)
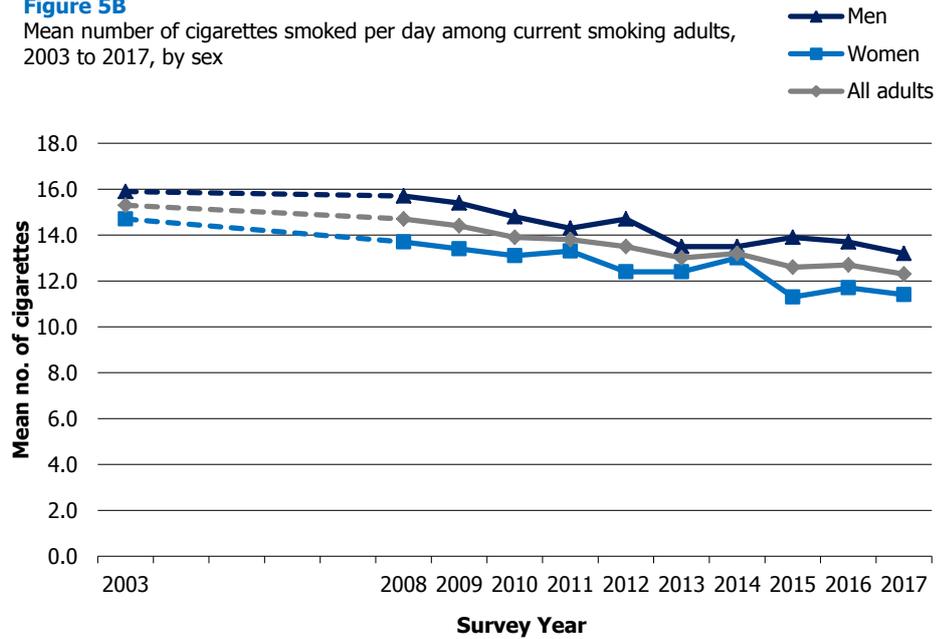
5.3.2 Cigarette smoking status in 2017, by age and sex

Overall, 18% of adults were current cigarette smokers in 2017, 26% reported that they were ex-regular smokers and 56% said they had never smoked regularly or at all.

Men were more likely than women to identify as current smokers (20% and 16% respectively). Men were also significantly more likely than women to report being an ex-regular cigarette smoker (28% of men compared with 24% of women). Correspondingly, men were significantly less likely than women to have reported never smoking or never being a regular smoker (52% and 60% respectively).

There were significant differences in smoking prevalence by age group in 2017, as seen in previous years[24]. Smoking prevalence was highest among adults aged 25-64 (19-24%, 24% among those aged 25-34), lower among those aged 16-24 (17%) and those aged 65-74 (14%), and lowest among those aged 75 and over (6%). Similar patterns for men and women were observed for smoking prevalence by age.

As in previous years[25], the percentage of people in 2017 who reported that they were ex-regular smokers was smallest among the youngest age group (7% for those aged 16-24) and largest among the older adults (34-37% for those aged 65 and over). Correspondingly, those in the youngest age group were most likely to report never smoking regularly or at all (76% for those aged 16-24 compared with 49-60% of those aged 25 and over). These patterns held generally for both men and women, although, in the oldest age group, a far lower percentage of women were ex-regular smokers than men (23% compared with 50%). Similarly, a far higher percentage of women than men were never regular cigarette smokers or never smoked at all in the oldest age group (72% compared with 42%).

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The mean number of cigarettes smoked per day was higher for male smokers (13.2 cigarettes) than for female smokers (11.4 cigarettes). For all adults and women, the highest mean number of cigarettes smoked per day was among the 45-54 age group (14.3 and 13.4 cigarettes, respectively); for men, the highest mean was among those aged 55-64 (16.6 cigarettes).

Of all adult smokers, the younger age groups (aged 16-44) smoked fewer cigarettes per day on average (between 9.6 and 11.4 cigarettes) than those aged 45 -74 (between 13.8 and 14.3 cigarettes) in 2017.

Table 5.2

5.3.3 Cigarette smoking status (age-standardised) since 2003, by area deprivation and sex

Adults living in more deprived areas were more likely to smoke than those in less deprived areas in 2017. Smoking prevalence was 27% among those in the most deprived areas with step-decreases across the intermediate quintiles to 9% among those in the least deprived areas. The gradient was similar for men (30% in the most deprived areas compared with 10% in the least deprived areas) and women (25% in the most deprived areas compared with 9% in the least deprived areas).

In 2017, there was a clear gradient by area deprivation in the numbers of cigarettes smoked with a mean of 13.4 cigarettes smoked per day among smokers in the most deprived area and 8.6 cigarettes smoked among those in the least deprived area. The gradient was more pronounced among male smokers, with an average of 15.0 cigarettes smoked daily per current smoker living in the most deprived areas compared with 9.5 cigarettes smoked among those living in the least deprived areas. The pattern for women was less clear, with 12.0 cigarettes smoked daily per current smoker in the most deprived area and 7.7 in the least deprived areas and the highest prevalence among the middle quintile (12.3 cigarettes).

Taking the time period 2003 to 2017 as a whole, the deprivation gradients in current smoking prevalence and numbers of cigarettes smoked were significant overall for all adults, as well as separately for men and women; these gradients were consistent across the time period. The gap between smoking prevalence in the most deprived and least deprived areas has narrowed, from 28 percentage points in 2003 (45% in most deprived and 17% in least deprived) to 18 percentage points in 2017 (27% in most deprived and 9% in least deprived); however rates remain around 3 times higher in the most deprived areas.

Table 5.3

5.4 EXPOSURE TO SECOND HAND SMOKE

5.4.1 Children's exposure to second-hand smoke since 2012

In 2017, 10% of children were living in a home in which someone regularly smoked indoors; the figure was the same for boys and girls. There have been significant falls between 2012 and 2017 in the percentage of children living in accommodation in which someone regularly smoked inside (19% in 2012, 16% in 2013 and 2014, 12% in 2015 and 11% in 2016), with similar patterns for both boys and girls.

A lower percentage of children (6%; 5% for boys and 6% for girls) were reported to have been exposed to second-hand smoke in their home in 2017 than in 2012 (12% for both boys and girls; see Figure 5C).

Figure 5C
Percentage of children exposed to second-hand smoke in their own home, 2012 to 2017, by sex
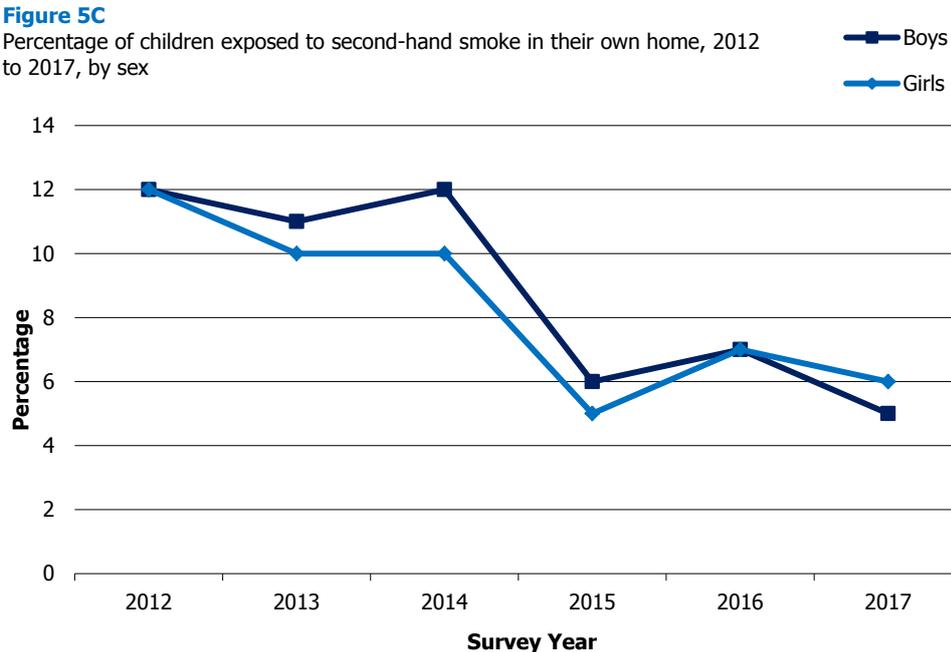
The data indicate that the target to reduce the percentage of children exposed to smoke at home to 6% by 2020 was met in 2015 and 2017 (the 1% point increase in 2016 was non-significant). These figures (and the others in this section) will continue to be examined in future years to assess adherence to the target. **Figure 5C, Table 5.4**

5.5 COTININE-ADJUSTED CIGARETTE SMOKING STATUS

5.5.1 Cotinine-adjusted smoking status, 2016/2017 combined, by age and sex

Just over a fifth (22%) of adults self-reported as current cigarette smokers in 2016/2017. When corrected for cotinine levels, current cigarette smoking prevalence increased for all adults to 26% (24% to 31% for men and 19% to 22% for women) for those years. The gap of five percentage points for adults (six percentage points for men and three percentage points for women) between self-reported smoking

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status and cotinine-adjusted smoking prevalence is higher than previously reported SHeS findings (gaps of three, four and two percentage points respectively in 2014/2015)[26].

The difference between self-reported smoking status and the cotinine-adjusted smoking prevalence for adults aged 16 and over did not vary significantly with age. **Table 5.5**

5.6 EXPOSURE TO SECOND HAND SMOKE AMONG NON-SMOKERS

5.6.1 Saliva cotinine levels among non-smokers since 2003

Adult non-smokers' geometric mean cotinine levels reduced significantly from 0.40 ng/ml in 2003 to 0.11 ng/ml in 2008/2009. A further small, but significant decrease had occurred since, with non-smokers' mean cotinine levels reaching 0.08 ng/ml in 2016/2017. There were no differences between men and women in geometric mean cotinine trend or levels in 2016/2017.

The percentage of non-smokers aged 16 and over with detectable salivary cotinine fell dramatically from 85% in 2003 to 24% in 2016/2017 combined. The largest fall was between 2003 and 2008/2009 combined, a drop of 47 percentage points; the percentage remained level in 2010/2011 combined and subsequently fell again by 13 percentage points to 25% in 2014/2015 combined. Levels and patterns were similar for men and women at each time point after 2003.

Table 5.6

5.6.2 Saliva cotinine levels among non-smokers in 2016/2017 combined, by age and sex

Adult non-smokers' geometric mean cotinine levels were slightly higher for those aged 16-44 (0.09 ng/ml) compared with those aged 45 and older (0.07 ng/ml) in 2016/2017 combined; this was the case for both men and women.

The percentage of adult non-smokers with detectable salivary cotinine was higher among younger adults than older (29% of those aged 16-44 compared with 17% of those aged 65 and older). This pattern was reflected in men, where detectable salivary cotinine decreased with age (34% among those aged 16-24 to 17% among those aged 65 and over). For women, detectable cotinine remained stable among those aged 16-64 (25%), only decreasing to 17% in those aged 65 and above.

Table 5.7

5.6.3 Saliva cotinine levels among cotinine-validated self-reported non-smokers in 2014-2017 combined (age-standardised), by area deprivation and sex

The age-standardised geometric mean saliva cotinine level for non-smokers living in the most deprived area quintile was more than double the level for those living in the least deprived quintile (0.14 ng/ml

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compared with 0.06 ng/ml). This pattern was true for both male and female non-smokers.

The age-standardised percentage of adult non-smokers with detectable salivary cotinine living in the most deprived area, at 50%, was more than three times that of non-smokers living in the least deprived area (13%). A similar pattern was found among both men and women.

Table 5.8

5.6.4 Places self-reported cotinine-validated non-smokers are exposed to second hand smoke in 2014-2017 combined, by age and sex

Nearly half of cotinine-validated self-reported non-smoking adults with a detectable saliva cotinine level (48%) reported not being exposed to smoke in any of the places they were asked about (at their own / other's home, at work, in cars / vans, outside buildings, or in public places). Patterns in exposure to second-hand smoke were similar for non-smoking men and women.

Nearly a quarter (23%) of non-smoking adults with detectable cotinine levels were exposed to second-hand smoke in their own home and 18% were exposed in someone else's home. These figures were similar for non-smoking men and women (24% and 21% in their own home and 15% and 20% in someone else's home, respectively).

Of all non-smoking adults with detectable cotinine levels, 6% reported exposure at work and a similar proportion (8%) reported exposure in cars / vans. Of the public places asked about, reported exposure was greatest outside buildings (e.g. pubs, shops, hospitals) with one in five (20%) reporting this. Similar patterns were found for men and women.

There were some variations in non-smokers' exposure to second-hand smoke by age in 2014-2017 combined, with exposure generally greater among younger non-smokers with detectable cotinine levels. Of those aged 16-44, 40% were not exposed in any of the listed places compared with 61% of those aged 64 and over; these percentages were similar for men and women.

Age-related differences in exposure to second-hand smoke among non-smokers with detectable cotinine levels were apparent among most of the specific locations with 9% aged 16-44 exposed to second-hand smoke while at work compared with 1% of those aged 64 and over. Such differences in exposure to second-hand smoke were also seen in other people's homes (22% of those aged 16-44 compared with 10% of those aged 64 and over); outside buildings (e.g. pubs, shops, hospitals: 27% and 11%, respectively), in other public places (18% and 2%, respectively) and in cars / vans (11% and 2%, respectively). Exposure to second-hand smoke in the non-smoking respondent's own home was an exception, with percentages of 22-23% across the three age groupings.

Table 5.9

5.7 HOUSEHOLD SMOKING RULES

5.7.1 Household smoking rules in 2017, by age and sex

In 2017, nearly two thirds (64%) of adults lived in households in which smoking was only permitted in outdoor areas. For 12%, smoking was permitted indoors but only in certain areas or rooms; while 5% of adults lived in a household with no restrictions placed on smoking indoors. For the remaining 19%, smoking was not allowed indoors or outdoors. The figures were similar for men and women.

Household smoking rules varied somewhat by age. For instance, those aged 16-44 were least likely to live in homes with no restrictions on smoking (2-4%% compared with 7-9% for other age groups) in 2017. Correspondingly, those in the 16-44 age group were also most likely to live in homes where smoking was not permitted indoors or outdoors (20-25% compared with 14-18% for other age groups). Those aged 16 to 24 were most likely to live in homes where people can only smoke in certain areas or rooms (18% compared with 8-14% for other age groups) in 2017. These patterns were broadly similar for men and women.   **Table 5.10**

5.7.2 Household smoking rules (age-standardised) in 2017, by area deprivation and sex

Household smoking rules were associated significantly with deprivation in 2017. Those in the least deprived two quintiles were least likely to live in homes with no restrictions on smoking (2% for both compared with 13% for the most deprived quintile). Correspondingly, people in the least two deprived quintiles were also most likely to live in homes where smoking was not permitted indoors or outdoors (21-29% compared with 12-17% for other quintiles).

Those in the least deprived quintile were least likely to live in homes where people can only smoke in certain areas or rooms (age-standardised figure of 5% compared with 8-19% for other quintiles). Those in the most deprived quintile were least likely to live in homes where people can only smoke in outdoor areas (e.g. gardens/balconies; 56% compared with 63-68% for other quintiles).   **Figure 5D, Table 5.11**

Smoking rules in households for all adults aged 16 and over, by deprivation

Legend:
- Anywhere inside (grey)
- In certain areas inside (green)
- No indoor or outdoor areas (blue)
- Only outdoor areas (dark blue)

Y-axis: Percentage (0 to 100)

X-axis: Area Deprivation — 5th (Least deprived), 4th, 3rd, 2nd, 1st (Most deprived)
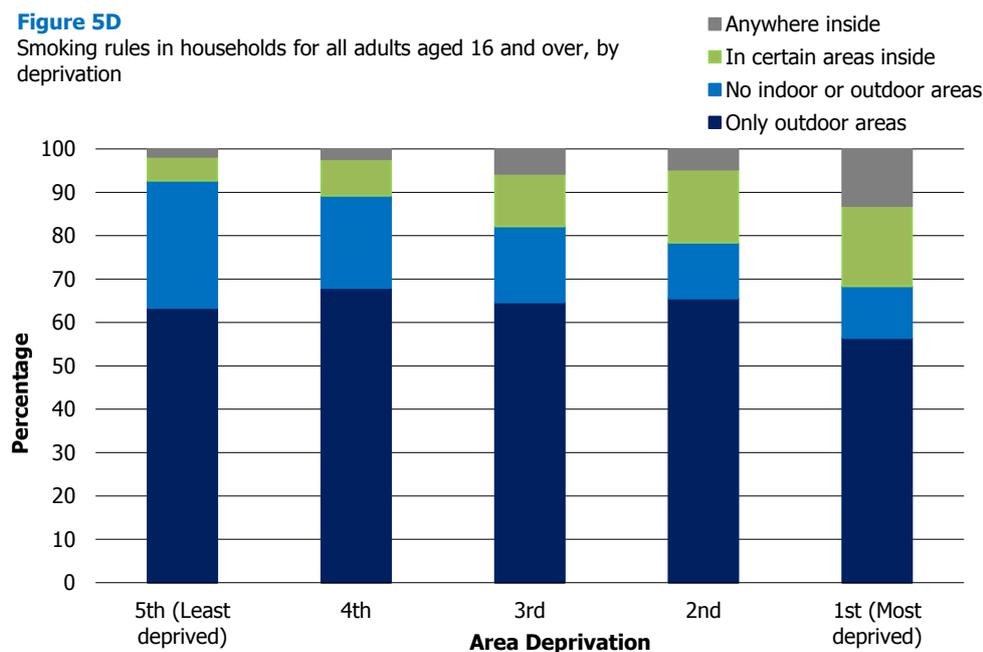
5.8 TRENDS IN E-CIGARETTE USE SINCE 2014, BY AGE AND SEX

In 2017, current e-cigarettes use among adults was 7%. A separate 11% had previously used e-cigarettes (with a total of 19% ever using them). Four fifths (81%) had never used e-cigarettes.

The proportion of current e-cigarette users had not changed from 2015, but was significantly higher than in 2014 (5% in 2014 compared with 7% in 2015, 2016 and 2017). The proportion of people that had previously used e-cigarettes has fluctuated between 10-12% since 2014 (10% in 2014 and 11% in 2017). Fewer adults reported never having used e-cigarettes in 2017 (81%) than in 2014 (85%).

Men and women were equally likely to be current users of e-cigarettes (7% for both men and women) in 2017. However, men were more likely to have previously used e-cigarettes than women (13% compared with 10%) and women were more likely than men to have never used e-cigarettes (83% compared with 80%).

As in previous years[27], e-cigarette use in 2017 varied significantly with age. The prevalence of e-cigarette use in 2017 was highest among the middle age groups (8-11% among those aged 25-64) and lower for the youngest (5% among those aged 16-24) and older adults (1-6% for those aged 65 and over). A similar age-related pattern was seen for both men and women.

Combined past and current usage – ever use – was also associated with younger age in 2017, with lower use among older adults. Of those aged 16-54, 20-26% had ever used e-cigarettes compared with 18% of those aged 54-65, 11% of those aged 65-74 and 2% of those aged 75 and over. For adults aged 45-74, around half of those who had ever used e-cigarettes (11-20%) were still using them (6-11%). Around a fifth of adults aged 16-24 who had ever used e-

cigarettes were currently using them in 2017 (5% were current users compared with 23% that reported having ever used e-cigarettes).

Age-related patterns in e-cigarette use have not changed over time. **Table 5.12**

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Table list

Table 5.1 Cigarette smoking status, 2003 to 2017

Aged 16 and over   *2003 - 2017*

Cigarette smoking status	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Men											
Current cigarette smoker[a]	29	27	25	26	24	25	23	23	22	23	20
Ex-regular cigarette smoker	24	24	24	24	23	23	25	23	27	25	28
Never regular cigarette smoker / never smoked at all	47	49	51	50	52	52	51	54	51	52	52
Mean per current smoker per day	15.9	15.7	15.4	14.8	14.3	14.7	13.5	13.5	13.9	13.7	13.2
Standard error of the mean	0.33	0.46	0.41	0.43	0.35	0.48	0.49	0.49	0.45	0.67	0.54
Women											
Current cigarette smoker[a]	28	25	25	25	22	24	20	21	20	20	16
Ex-regular cigarette smoker	20	22	20	21	20	21	23	23	23	23	24
Never regular cigarette smoker / never smoked at all	53	53	55	54	57	55	57	56	57	58	60
Mean per current smoker per day	14.7	13.7	13.4	13.1	13.3	12.4	12.4	13.0	11.3	11.7	11.4
Standard error of the mean	0.27	0.31	0.27	0.27	0.30	0.40	0.40	0.40	0.37	0.38	0.41
All adults											
Current cigarette smoker[a]	28	26	25	25	23	25	21	22	21	21	18
Ex-regular cigarette smoker	22	23	22	23	22	22	24	23	25	24	26
Never regular cigarette smoker / never smoked at all	50	51	53	52	55	54	54	55	54	55	56
Mean per current smoker per day	15.3	14.7	14.4	13.9	13.8	13.5	13.0	13.2	12.6	12.7	12.3
Standard error of the mean	0.24	0.28	0.26	0.26	0.26	0.34	0.34	0.34	0.31	0.39	0.36

Continued…

Table 5.1 - Continued

Cigarette smoking status	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):											
Men	*3819*	*3066*	*3560*	*3422*	*3581*	*2292*	*2330*	*2207*	*2374*	*2054*	*1767*
Male smokers	*1039*	*776*	*874*	*858*	*835*	*564*	*516*	*482*	*499*	*439*	*348*
Women	*4267*	*3348*	*3905*	*3750*	*3906*	*2489*	*2534*	*2416*	*2580*	*2227*	*1895*
Female smokers	*1159*	*819*	*953*	*913*	*866*	*582*	*495*	*505*	*505*	*436*	*295*
All adults	*8086*	*6413*	*7465*	*7173*	*7487*	*4780*	*4864*	*4623*	*4954*	*4281*	*3662*
All smokers	*2198*	*1595*	*1827*	*1771*	*1700*	*1146*	*1011*	*987*	*1004*	*874*	*643*
Bases (unweighted):											
Men	*3582*	*2829*	*3265*	*3092*	*3263*	*2119*	*2131*	*2057*	*2228*	*1882*	*1589*
Male smokers	*923*	*654*	*770*	*777*	*745*	*484*	*484*	*433*	*444*	*371*	*298*
Women	*4514*	*3600*	*4227*	*4109*	*4243*	*2677*	*2746*	*2585*	*2740*	*2416*	*2083*
Female smokers	*1203*	*856*	*1018*	*1007*	*939*	*588*	*546*	*519*	*508*	*434*	*333*
All adults	*8096*	*6429*	*7492*	*7201*	*7506*	*4796*	*4877*	*4642*	*4968*	*4298*	*3672*
All smokers	*2126*	*1510*	*1788*	*1784*	*1684*	*1072*	*1030*	*952*	*952*	*805*	*631*

a Current cigarette smoker excludes those who reported only smoking cigars or pipes

Table 5.2 Cigarette smoking status, 2017, by age and sex

Cigarette smoking status	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Current cigarette smoker[a]	18	28	25	22	20	14	8	20
Ex-regular cigarette smoker	8	18	27	31	29	43	50	28
Never regular cigarette smoker / never smoked at all	74	54	48	47	50	44	42	52
Mean per current smoker per day	*	11.2	[10.9]	15.1	16.6	[16.2]	*	13.2
Standard error of the mean	*	0.95	[0.95]	1.36	1.29	[1.72]	*	0.54
Women								
Current cigarette smoker[a]	16	19	17	15	22	14	5	16
Ex-regular cigarette smoker	6	19	24	30	30	32	23	24
Never regular cigarette smoker / never smoked at all	78	61	59	55	48	54	72	60
Mean per current smoker per day	*	9.3	12.2	13.4	12.0	[11.7]	*	11.4
Standard error of the mean	*	0.91	1.32	0.97	0.79	[1.20]	*	0.41
All adults								
Current cigarette smoker[a]	17	24	21	19	21	14	6	18
Ex-regular cigarette smoker	7	18	25	30	30	37	34	26
Never regular cigarette smoker / never smoked at all	76	58	54	51	49	49	60	56
Mean per current smoker per day	9.6	10.4	11.4	14.3	14.1	13.8	*	12.3
Standard error of the mean	0.88	0.68	0.79	0.92	0.72	1.09	*	0.36

Continued…

Table 5.2 - Continued

Cigarette smoking status	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	237	294	270	321	281	221	143	1767
Male smokers	42	82	62	69	52	30	11	348
Women	218	306	285	344	298	243	201	1895
Female smokers	34	56	45	52	63	34	11	295
All adults	456	600	554	665	579	464	344	3662
All smokers	76	138	107	121	115	64	22	643
Bases (unweighted):								
Men	130	219	201	242	325	283	189	1589
Male smokers	24	60	46	57	60	38	13	298
Women	148	287	324	364	384	341	235	2083
Female smokers	28	53	54	59	83	44	12	333
All adults	278	506	525	606	709	624	424	3672
All smokers	52	113	100	116	143	82	25	631

a Current cigarette smoker excludes those who reported only smoking cigars or pipes

Table 5.3 Cigarette smoking status (age-standardised), 2003 to 2017, by area deprivation and sex

Aged 16 and over   *2003 - 2017*

Cigarette smoking status	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Men											
Current cigarette smoker											
1st (most deprived)	46	38	38	39	43	40	42	39	39	35	30
2nd	33	32	32	31	27	32	25	28	25	30	28
3rd	26	28	29	23	24	24	26	19	23	21	20
4th	23	19	17	20	18	19	19	15	15	16	15
5th (least deprived)	19	16	14	16	10	13	11	14	11	11	10
Mean per current smoker per day											
1st (most deprived)	17.3	17.6	17.1	16.6	15.7	16.1	14.1	14.8	14.3	14.2	15.0
2nd	16.2	16.8	16.1	15.0	14.6	14.8	14.8	13.8	13.8	13.8	13.5
3rd	16.6	15.9	15.2	14.9	14.5	16.2	13.1	14.1	15.0	13.0	12.3
4th	16.0	15.3	13.8	13.7	12.3	12.3	14.1	12.4	13.0	13.3	13.4
5th (least deprived)	12.8	10.2	13.1	10.7	12.8	12.7	[9.9]	[10.2]	[13.0]	[13.6]	[9.5]
SE of the mean											
1st (most deprived)	0.55	0.89	0.64	0.73	0.61	1.03	0.93	0.89	0.82	0.94	1.13
2nd	0.76	0.84	0.82	0.76	0.69	0.84	0.77	0.88	1.03	1.33	0.97
3rd	0.75	0.94	0.95	1.53	0.79	1.11	0.93	0.85	1.02	1.09	0.94
4th	0.75	1.13	0.82	1.12	0.78	1.00	1.36	1.13	1.15	1.94	1.20
5th (least deprived)	0.92	1.25	1.52	0.83	1.17	1.23	[1.65]	[1.49]	[1.17]	[2.47]	[1.34]

Continued…

Table 5.3 - *Continued*

Cigarette smoking status	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Women											
Current cigarette smoker											
1st (most deprived)	45	39	39	39	38	41	33	35	32	30	25
2nd	34	28	30	30	26	29	23	29	25	25	19
3rd	25	25	27	24	22	22	20	17	20	18	17
4th	20	16	17	16	16	18	15	15	14	10	10
5th (least deprived)	16	14	11	11	10	11	9	11	10	12	9
Mean per current smoker per day											
1st (most deprived)	16.5	15.6	14.8	15.2	15.1	14.3	13.3	14.7	12.9	11.8	12.0
2nd	15.1	13.4	14.1	13.3	13.5	12.8	14.5	13.8	12.2	12.6	11.5
3rd	14.9	12.6	12.9	12.5	12.8	11.3	12.2	13.1	10.8	12.1	12.3
4th	12.9	12.6	11.5	10.4	10.7	11.0	10.3	11.4	10.5	10.4	12.1
5th (least deprived)	11.5	12.5	11.8	10.6	12.3	9.3	[9.1]	[9.2]	[6.0]	9.9	[7.7]
SE of the mean											
1st (most deprived)	0.45	0.58	0.51	0.45	0.55	0.68	0.63	0.75	0.68	0.67	0.83
2nd	0.55	0.58	0.55	0.50	0.53	0.74	1.02	0.77	0.68	0.86	0.86
3rd	0.60	0.55	0.58	0.60	0.64	0.72	0.76	0.72	0.84	0.69	0.91
4th	0.62	0.80	0.55	0.75	0.75	1.11	0.69	0.83	0.83	1.17	0.94
5th (least deprived)	1.00	0.89	0.90	0.79	0.93	1.10	[0.99]	[1.21]	[0.85]	0.98	[0.96]

Continued…

Table 5.3 - Continued

Cigarette smoking status	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
All adults											
Current cigarette smoker											
1st (most deprived)	45	39	38	39	40	41	37	37	35	32	27
2nd	34	30	31	31	26	30	24	29	25	28	23
3rd	26	27	28	23	23	23	23	18	21	20	18
4th	21	18	17	18	17	19	17	15	14	13	13
5th (least deprived)	17	15	12	14	10	12	10	12	11	12	9
Mean per current smoker per day											
1st (most deprived)	16.9	16.5	15.8	15.8	15.4	15.1	13.7	14.7	13.6	12.9	13.4
2nd	15.6	15.1	15.1	14.1	14.0	13.8	14.7	13.8	12.9	13.2	12.7
3rd	15.7	14.2	14.0	13.6	13.6	13.7	12.7	13.6	12.9	12.6	12.3
4th	14.5	14.0	12.6	12.2	11.5	11.7	12.3	11.9	11.7	12.1	12.9
5th (least deprived)	12.2	11.4	12.5	10.7	12.6	11.2	9.6	9.8	9.7	11.6	8.6
SE of the mean											
1st (most deprived)	0.41	0.55	0.44	0.40	0.43	0.61	0.62	0.61	0.55	0.60	0.67
2nd	0.49	0.51	0.52	0.44	0.48	0.60	0.64	0.65	0.60	0.88	0.76
3rd	0.51	0.57	0.56	0.71	0.52	0.74	0.61	0.58	0.68	0.68	0.66
4th	0.51	0.76	0.53	0.76	0.56	0.79	0.83	0.72	0.82	1.31	0.90
5th (least deprived)	0.83	0.74	1.00	0.63	0.83	0.80	1.06	1.03	0.90	1.24	0.88

Table 5.3 - Continued

Cigarette smoking status	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases[b] (weighted):											
Men											
1st (most deprived)	696	572	616	698	694	386	384	407	434	406	292
2nd	746	644	726	688	660	467	466	428	480	382	367
3rd	753	579	665	674	750	479	488	415	437	442	356
4th	814	719	778	708	802	482	462	465	565	386	379
5th (least deprived)	811	550	778	657	676	480	531	493	458	437	374
Women											
1st (most deprived)	841	668	777	795	755	473	481	439	500	497	375
2nd	846	690	775	785	730	494	501	493	516	427	374
3rd	834	643	735	726	879	514	532	461	503	447	379
4th	864	721	785	758	823	483	521	534	587	381	368
5th (least deprived)	882	622	835	688	720	525	499	489	473	474	398
All adults											
1st (most deprived)	1537	1241	1392	1493	1449	859	866	846	935	903	667
2nd	1592	1334	1501	1473	1390	961	966	921	996	809	742
3rd	1587	1222	1400	1400	1629	993	1020	876	940	890	735
4th	1678	1440	1563	1467	1625	965	983	999	1153	767	747
5th (least deprived)	1693	1172	1613	1345	1396	1004	1031	982	930	911	771

Table 5.3 - Continued

Cigarette smoking status	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases[b] (unweighted):											
Men											
1st (most deprived)	597	464	564	679	615	300	328	334	382	291	236
2nd	691	570	607	604	572	387	441	395	439	323	310
3rd	796	608	690	614	715	499	508	478	475	428	358
4th	790	717	761	684	805	494	451	446	543	421	374
5th (least deprived)	708	468	643	510	556	439	403	404	389	419	311
Women											
1st (most deprived)	827	651	829	964	801	426	456	443	486	420	367
2nd	885	711	781	814	755	499	554	535	535	436	394
3rd	971	761	879	796	963	615	666	555	589	546	459
4th	970	873	926	871	1002	592	602	572	658	502	455
5th (least deprived)	861	601	812	662	722	545	468	480	472	512	408
All adults											
1st (most deprived)	1424	1115	1393	1643	1416	726	784	777	868	711	603
2nd	1576	1281	1388	1418	1327	886	995	930	974	759	704
3rd	1767	1369	1569	1410	1678	1114	1174	1033	1064	974	817
4th	1760	1590	1687	1555	1807	1086	1053	1018	1201	923	829
5th (least deprived)	1569	1069	1455	1172	1278	984	871	884	861	931	719

a Current cigarette smoker excludes those who reported only smoking cigars or pipes

b Bases shown are for all adults. Bases for mean number of cigarettes per current smoker can be estimated from table 5.1

Table 5.4 Children's exposure to second-hand smoke, 2012 to 2017

Exposure to second-hand smoke in own home	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%
Boys						
Whether anyone smokes in accommodation	19	18	17	12	12	10
Reported exposure to second-hand smoke in own home	12	11	12	6	7	5
Girls						
Whether anyone smokes in accommodation	18	15	16	11	9	10
Reported exposure to second-hand smoke in own home	12	10	10	5	7	6
All children						
Whether anyone smokes in accommodation	19	16	16	12	11	10
Reported exposure to second-hand smoke in own home	12	11	11	6	7	6
Bases (weighted):						
Boys	*914*	*940*	*852*	*725*	*798*	*819*
Girls	*873*	*899*	*816*	*695*	*763*	*784*
All children	*1787*	*1839*	*1668*	*1420*	*1561*	*1603*
Bases (unweighted):						
Boys	*879*	*948*	*842*	*735*	*771*	*819*
Girls	*908*	*891*	*826*	*685*	*790*	*784*
All children	*1787*	*1839*	*1668*	*1420*	*1561*	*1603*

Table 5.5 Smoking prevalence estimates without and with saliva cotinine adjustment, 2016/2017 combined, by age and sex

Aged 16 and over with valid saliva cotinine measurement   *2016/2017 combined*

Smoking prevalence	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Unadjusted self-reported: smoke cigarettes	28	28	28	28	23	22	8	24
Adjusted estimate, adding self-reported non-smokers with saliva cotinine of 12ng/ml or over[a]	40	38	32	29	31	23	13	31
Difference[b]	12	10	5	2	8	1	6	6
Women								
Unadjusted self-reported: smoke cigarettes	18	19	21	25	24	17	4	19
Adjusted estimate, adding self-reported non-smokers with saliva cotinine of 12ng/ml or over[a]	21	22	24	28	28	20	6	22
Difference[b]	3	3	3	3	5	3	1	3
All adults								
Unadjusted self-reported: smoke cigarettes	23	23	24	26	23	19	6	22
Adjusted estimate, adding self-reported non-smokers with saliva cotinine of 12ng/ml or over[a]	31	30	28	29	30	21	9	26
Difference[b]	8	7	4	2	6	2	3	5

Continued…

Table 5.5 - Continued

Aged 16 and over with valid saliva cotinine measurement   *2016/2017 combined*

Smoking prevalence	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	123	146	125	154	140	112	74	874
Men (cotinine adjusted)	103	123	108	136	123	93	56	742
Women	106	147	140	167	146	118	105	928
Women (cotinine adjusted)	96	113	114	141	130	101	83	778
All adults	229	293	264	321	285	230	178	1802
All adults (cotinine adjusted)	199	236	222	277	253	194	138	1519
Bases (unweighted):								
Men	59	112	103	123	148	147	91	783
Men (cotinine adjusted)	50	92	89	108	128	120	71	658
Women	82	152	151	171	185	173	117	1031
Women (cotinine adjusted)	74	116	126	146	164	148	93	867
All adults	141	264	254	294	333	320	208	1814
All adults (cotinine adjusted)	124	208	215	254	292	268	164	1525

a Excludes self-reported non-smokers who report current use of e-cigarettes, as this also affects cotinine levels

b Because of rounding, the actual differences shown may be different from the apparent difference between the two percentages

Table 5.6 Self-reported cotinine validated non-smokers exposure to second-hand smoke, 2003 to 2016/2017 combined

Self-reported non-smokers aged 16 and over with valid saliva cotinine measurement[a]   *2003 - 2016/2017 combined*

Saliva cotinine level (ng/ml)	2003	2008/ 2009 combined	2010/ 2011 combined	2012/ 2013 combined	2014/ 2015 combined	2016/ 2017 combined
	%	%	%	%	%	%
Men						
Geometric mean saliva cotinine[b]	0.44	0.11	0.11	0.09	0.09	0.08
Confidence interval	(0.40-0.47)	(0.10-0.13)	(0.10-0.13)	(0.08-0.10)	(0.08-0.11)	(0.07-0.09)
Exposed to cotinine[c]	86	39	38	26	28	25
Women						
Geometric mean saliva cotinine[b]	0.37	0.10	0.11	0.08	0.08	0.08
Confidence interval	(0.34-0.40)	(0.09-0.11)	(0.10-0.12)	(0.07-0.08)	(0.07-0.09)	(0.07-0.09)
Exposed to cotinine[c]	84	37	37	23	25	23
All adults						
Geometric mean saliva cotinine[b]	0.40	0.11	0.11	0.08	0.09	0.08
Confidence interval	(0.38-0.43)	(0.10-0.12)	(0.10-0.12)	(0.08-0.09)	(0.08-0.09)	(0.07-0.09)
Exposed to cotinine[c]	85	38	38	25	26	24
Bases (weighted):						
Men	*1513*	*681*	*642*	*708*	*700*	*527*
Women	*1583*	*694*	*700*	*755*	*755*	*626*
All adults	*3096*	*1462*	*1342*	*1463*	*1455*	*1153*
Bases (unweighted):						
Men	*1472*	*632*	*598*	*659*	*636*	*487*
Women	*1746*	*767*	*781*	*824*	*841*	*706*
All adults	*3218*	*1493*	*1379*	*1483*	*1477*	*1193*

a To be included within this category, participants had to be both self-reported non-smokers and have a saliva cotinine level lower than 12ng/ml.

b Geometric means have been presented for non-smokers as their cotinine data have a very skewed and exponential distribution. A geometric mean is an average calculated by multiplying the values of the cases in the sample and taking the nth root, where n is the number of cases. As 95% confidence intervals for the geometric means are more complicated to calculate than for arithmetic means, these have been presented around the estimates rather than standard errors

c Non-smokers with a detectable level of cotinine in their saliva (> 0.1ng/ml).

Table 5.7 Self-reported cotinine validated non-smokers exposure to second-hand smoke, 2016/2017 combined, by age and sex

Self-reported non-smokers aged 16 and over with valid saliva cotinine measurement[a]   *2016/2017 combined*

Saliva cotinine level (ng/ml)	Age			Total
	16-44	45-64	65+	
	%	%	%	%
Men				
Geometric mean saliva cotinine[b]	0.09	0.07	0.07	0.08
Confidence interval	(0.08-0.12)	(0.06-0.09)	(0.06-0.09)	(0.07-0.09)
Exposed to cotinine[c]	34	20	17	25
Women				
Geometric mean saliva cotinine[b]	0.08	0.08	0.07	0.08
Confidence interval	(0.07-0.10)	(0.07-0.09)	(0.06-0.08)	(0.07-0.09)
Exposed to cotinine[c]	25	25	17	23
All adults				
Geometric mean saliva cotinine[b]	0.09	0.07	0.07	0.08
Confidence interval	(0.08-0.10)	(0.07-0.08)	(0.06-0.08)	(0.07-0.09)
Exposed to cotinine[c]	29	23	17	24
Bases (weighted):				
Men	*217*	*187*	*123*	*527*
Women	*260*	*207*	*160*	*626*
All adults	*477*	*394*	*282*	*1153*
Bases (unweighted):				
Men	*165*	*164*	*158*	*487*
Women	*252*	*243*	*211*	*706*
All adults	*417*	*407*	*369*	*1193*

a To be included within this category, participants had to be both self-reported non-smokers and have a saliva cotinine level lower than 12ng/ml.
b Geometric means have been presented for non-smokers as their cotinine data have a very skewed and exponential distribution. A geometric mean is an average calculated by multiplying the values of the cases in the sample and taking the nth root, where n is the number of cases. As 95% confidence intervals for the geometric means are more complicated to calculate than for arithmetic means, these have been presented around the estimates rather than standard errors
c Non-smokers with a detectable level of cotinine in their saliva (> 0.1ng/ml).

Table 5.8 Self-reported cotinine validated non-smokers exposure to second-hand smoke, 2014 to 2017 combined, by area deprivation and sex

Self-reported non-smokers aged 16 and over with valid saliva cotinine measurement[a]   *2014-2017 combined*

Saliva cotinine level (ng/ml)	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
Geometric mean saliva cotinine[b]	0.07	0.08	0.08	0.10	0.16
Confidence interval	(0.06-0.07)	(0.07-0.09)	(0.07-0.09)	(0.08-0.12)	(0.11-0.24)
Exposed to cotinine[c]	13	23	22	35	53
Women					
Geometric mean saliva cotinine[b]	0.06	0.07	0.07	0.09	0.13
Confidence interval	(0.06-0.07)	(0.06-0.08)	(0.06-0.07)	(0.08-0.11)	(0.11-0.16)
Exposed to cotinine[c]	13	18	17	31	48
All adults					
Geometric mean saliva cotinine[b]	0.06	0.07	0.07	0.09	0.14
Confidence interval	(0.06-0.07)	(0.07-0.08)	(0.07-0.08)	(0.08-0.11)	(0.12-0.18)
Exposed to cotinine[c]	13	21	20	33	50
Bases (weighted):					
Men	*296*	*263*	*259*	*239*	*168*
Women	*303*	*285*	*314*	*266*	*210*
All adults	*599*	*548*	*573*	*505*	*378*
Bases (unweighted):					
Men	*249*	*278*	*271*	*189*	*136*
Women	*325*	*366*	*382*	*265*	*209*
All adults	*574*	*644*	*653*	*454*	*345*

a To be included within this category, participants had to be both self-reported non-smokers and have a saliva cotinine level lower than 12ng/ml.

b Geometric means have been presented for non-smokers as their cotinine data have a very skewed and exponential distribution. A geometric mean is an average calculated by multiplying the values of the cases in the sample and taking the nth root, where n is the number of cases. As 95% confidence intervals for the geometric means are more complicated to calculate than for arithmetic means, these have been presented around the estimates rather than standard errors

c Non-smokers with a detectable level of cotinine in their saliva (> 0.1ng/ml).

Table 5.9 Places self-reported cotinine validated non-smokers with detectable cotinine levels exposed to second-hand smoker, 2014 to 2017 combined, by age and sex

Self-reported non-smokers aged 16 and over with detectable saliva cotinine level[a]   *2014 – 2017 combined*

Where exposed to smoke	Age			Total
	16-44	45-64	65+	
	%	%	%	%
Men				
In own home	25	26	21	24
At work	10	8	2	8
In other people's home	19	12	6	15
In cars/vans	13	6	2	9
Outside buildings	27	8	16	20
In other public places	18	11	1	13
None of these	40	55	61	47
Women				
In own home	18	22	24	21
At work	8	4	-	5
In other people's home	27	17	13	20
In cars/vans	10	5	3	6
Outside buildings	28	16	7	19
In other public places	18	10	3	12
None of these	41	49	61	49
All adults				
In own home	22	23	22	23
At work	9	5	1	6
In other people's home	22	15	10	18
In cars/vans	11	5	2	8
Outside buildings	27	13	11	20
In other public places	18	10	2	12
None of these	40	52	61	48
Bases (weighted):				
Men	*191*	*85*	*56*	*332*
Women	*143*	*109*	*80*	*331*
All adults	*334*	*194*	*136*	*664*
Bases (unweighted):				
Men	*116*	*71*	*66*	*253*
Women	*124*	*108*	*99*	*331*
All adults	*240*	*179*	*165*	*584*

a To be included within this category, participants had to be both self-reported non-smokers and have a saliva cotinine level between 0.1 and 12ng/ml.

Table 5.10 Smoking rules in household, 2017, by age and sex

Aged 16 and over   *2017*

Smoking rules in this house/flat	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
People can smoke anywhere inside this house/flat	2	3	5	9	9	9	7	6
People can only smoke in certain areas or rooms inside this house/flat	22	12	8	12	15	11	14	13
People can only smoke in outdoor areas (e.g. gardens/balconies)	57	57	67	62	62	63	68	62
People cannot smoke indoors or in outdoor areas of this house/flat	19	28	20	17	14	17	12	19
Women								
People can smoke anywhere inside this house/flat	4	2	3	4	9	4	9	5
People can only smoke in certain areas or rooms inside this house/flat	14	7	8	14	14	11	9	11
People can only smoke in outdoor areas (e.g. gardens/balconies)	59	69	70	64	63	69	63	65
People cannot smoke indoors or in outdoor areas of this house/flat	22	22	20	19	15	16	20	19
All adults								
People can smoke anywhere inside this house/flat	3	2	4	7	9	7	8	5
People can only smoke in certain areas or rooms inside this house/flat	18	10	8	13	14	11	11	12
People can only smoke in outdoor areas (e.g. gardens/balconies)	58	63	68	63	62	66	65	64
People cannot smoke indoors or in outdoor areas of this house/flat	21	25	20	18	14	16	16	19

Continued…

Table 5.10 - Continued

Aged 16 and over   *2017*

Smoking rules in this house/flat	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	*242*	*294*	*271*	*323*	*282*	*221*	*144*	*1778*
Women	*237*	*306*	*285*	*346*	*298*	*244*	*202*	*1917*
All adults	*480*	*600*	*556*	*669*	*580*	*465*	*346*	*3695*
Bases (unweighted):								
Men	*133*	*219*	*202*	*244*	*327*	*283*	*189*	*1597*
Women	*159*	*287*	*324*	*366*	*383*	*342*	*235*	*2096*
All adults	*292*	*506*	*526*	*610*	*710*	*625*	*424*	*3693*

Table 5.11 Smoking rules in household (age-standardised), 2017, by area deprivation and sex

Smoking rules in this house/flat	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
People can smoke anywhere inside this house/flat	2	2	5	6	16
People can only smoke in certain areas or rooms inside this house/flat	7	10	13	20	19
People can only smoke in outdoor areas (e.g. gardens/balconies)	61	66	64	62	55
People cannot smoke indoors or in outdoor areas of this house/flat	30	22	18	13	9
Women					
People can smoke anywhere inside this house/flat	2	2	6	4	11
People can only smoke in certain areas or rooms inside this house/flat	5	7	12	14	18
People can only smoke in outdoor areas (e.g. gardens/balconies)	65	70	65	69	57
People cannot smoke indoors or in outdoor areas of this house/flat	29	21	17	13	14
All adults					
People can smoke anywhere inside this house/flat	2	2	6	5	13
People can only smoke in certain areas or rooms inside this house/flat	5	8	12	17	19
People can only smoke in outdoor areas (e.g. gardens/balconies)	63	68	65	66	56
People cannot smoke indoors or in outdoor areas of this house/flat	29	21	17	13	12

Continued…

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Table 5.11 - *Continued*

Smoking rules in this house/flat	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
Bases (weighted):					
Men	*378*	*380*	*358*	*370*	*292*
Women	*401*	*371*	*388*	*379*	*377*
All adults	*779*	*751*	*747*	*749*	*669*
Bases (unweighted):					
Men	*313*	*375*	*360*	*313*	*236*
Women	*409*	*456*	*465*	*397*	*369*
All adults	*722*	*831*	*825*	*710*	*605*

Table 5.12 E-cigarette use, 2014 to 2017, by age and sex

Aged 16 and over *2014 - 2017*

E-cigarette use	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
2014								
Currently using	5	3	7	5	7	2	1	5
Ever previously used[a]	17	17	9	11	8	3	2	10
Never used	78	80	84	84	85	94	96	85
Ever used[b]	*22*	*20*	*16*	*16*	*15*	*6*	*4*	*15*
2015								
Currently using	6	9	6	9	8	3	2	6
Ever previously used[a]	22	20	13	10	8	4	2	12
Never used	72	71	81	82	85	93	96	82
Ever used[b]	*28*	*29*	*19*	*18*	*15*	*7*	*4*	*18*
2016[c]								
Currently using	3	11	9	9	9	4	1	7
Ever previously used[a]	21	19	17	13	11	5	1	13
Never used	77	70	74	78	80	91	98	79
Ever used[b]	*23*	*30*	*26*	*22*	*20*	*9*	*2*	*21*
2017								
Currently using	5	10	9	11	7	5	1	7
Ever previously used[a]	20	21	17	10	11	4	1	13
Never used	76	69	74	79	82	91	99	80
Ever used[b]	*24*	*31*	*26*	*21*	*18*	*9*	*1*	*20*
Women								
2014								
Currently using	3	5	7	9	6	3	1	5
Ever previously used[a]	14	12	12	9	9	5	2	9
Never used	83	83	81	82	85	92	97	85
Ever used[b]	*17*	*17*	*19*	*18*	*15*	*8*	*3*	*15*
2015								
Currently using	2	7	9	10	9	5	2	7
Ever previously used[a]	15	16	11	9	8	6	2	10
Never used	83	77	80	82	83	88	96	83
Ever used[b]	*17*	*23*	*20*	*18*	*17*	*12*	*4*	*17*

Continued…

Table 5.12 - Continued

E-cigarette use	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
2016[c]								
Currently using	5	8	7	10	8	5	2	7
Ever previously used[a]	16	12	14	12	9	5	3	10
Never used	79	80	79	78	82	90	95	83
Ever used[b]	*21*	*20*	*21*	*22*	*18*	*10*	*5*	*17*
2017								
Currently using	5	7	8	11	9	6	1	7
Ever previously used[a]	16	15	13	8	9	6	1	10
Never used	79	78	79	81	82	88	98	83
Ever used[b]	*21*	*22*	*21*	*19*	*18*	*12*	*2*	*17*
All adults								
2014								
Currently using	4	4	7	7	6	3	1	5
Ever previously used[a]	16	14	11	10	8	4	2	10
Never used	80	81	82	83	85	93	97	85
Ever used[b]	*20*	*19*	*18*	*17*	*15*	*7*	*3*	*15*
2015								
Currently using	4	8	7	9	8	4	2	7
Ever previously used[a]	19	18	12	9	8	5	2	11
Never used	78	74	81	82	84	90	96	83
Ever used[b]	*22*	*26*	*19*	*18*	*16*	*10*	*4*	*17*
2016[c]								
Currently using	4	10	8	10	9	4	1	7
Ever previously used[a]	18	16	15	13	10	5	2	12
Never used	78	75	77	78	81	91	96	81
Ever used[b]	*22*	*25*	*23*	*22*	*19*	*9*	*4*	*19*
2017								
Currently using	5	9	8	11	8	6	1	7
Ever previously used[a]	18	18	15	9	10	5	1	11
Never used	77	74	77	80	82	89	98	81
Ever used[b]	*23*	*26*	*23*	*20*	*18*	*11*	*2*	*19*

Table 5.12 - *Continued*

| E-cigarette use	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men 2014	*292*	*356*	*357*	*416*	*347*	*264*	*173*	*2205*
Men 2015	*326*	*381*	*370*	*445*	*375*	*288*	*190*	*2376*
Men 2016	*277*	*334*	*320*	*378*	*325*	*255*	*167*	*2057*
Men 2017	*232*	*294*	*270*	*321*	*281*	*221*	*143*	*1762*
Women 2014	*305*	*375*	*379*	*441*	*365*	*294*	*253*	*2412*
Women 2015	*319*	*405*	*397*	*471*	*394*	*321*	*273*	*2580*
Women 2016	*273*	*348*	*338*	*407*	*340*	*281*	*236*	*2225*
Women 2017	*222*	*306*	*285*	*345*	*298*	*243*	*201*	*1899*
All adults 2014	*597*	*731*	*736*	*857*	*712*	*558*	*426*	*4617*
All adults 2015	*645*	*786*	*767*	*916*	*770*	*609*	*463*	*4956*
All adults 2016	*550*	*682*	*658*	*786*	*665*	*536*	*403*	*4281*
All adults 2017	*453*	*600*	*554*	*666*	*580*	*464*	*344*	*3661*
Bases (unweighted):								
Men 2014	*192*	*250*	*306*	*361*	*358*	*361*	*227*	*2055*
Men 2015	*186*	*239*	*312*	*404*	*410*	*399*	*280*	*2230*
Men 2016	*164*	*211*	*265*	*340*	*359*	*337*	*208*	*1884*
Men 2017	*129*	*219*	*201*	*242*	*326*	*283*	*189*	*1589*
Women 2014	*224*	*337*	*421*	*431*	*437*	*419*	*313*	*2582*
Women 2015	*203*	*348*	*392*	*486*	*489*	*461*	*361*	*2740*
Women 2016	*191*	*322*	*347*	*440*	*429*	*400*	*284*	*2413*
Women 2017	*150*	*287*	*324*	*365*	*384*	*341*	*235*	*2086*
All adults 2014	*416*	*587*	*727*	*792*	*795*	*780*	*540*	*4637*
All adults 2015	*389*	*587*	*704*	*890*	*899*	*860*	*641*	*4970*
All adults 2016	*355*	*533*	*612*	*780*	*788*	*737*	*492*	*4297*
All adults 2017	*279*	*506*	*525*	*607*	*710*	*624*	*424*	*3675*

a Excludes those who are currently using

b Includes those who are currently using

c The wording was amended slightly in 2016 to include 'vaping devices'

Chapter 6

Diet
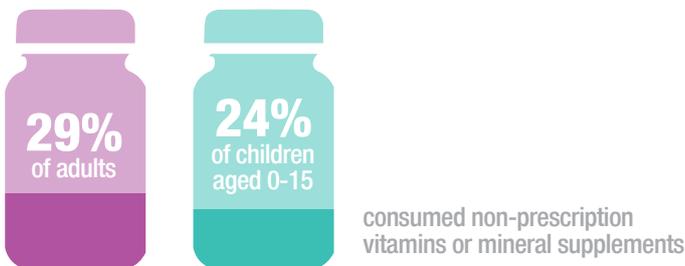
SUMMARY

24% of adults
met the 5-a-day recommendation, the highest proportion since 2003

10% did not consume any fruit or veg on previous day
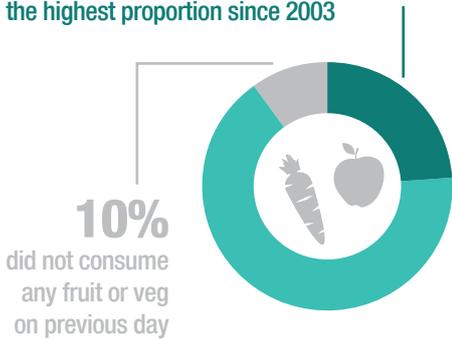
Both adults and children have increased the number of portions of fruit and vegetables they eat a day

Adults

3.3 portions, among the highest levels since 2003

Children

2.9 portions, the highest since 2008
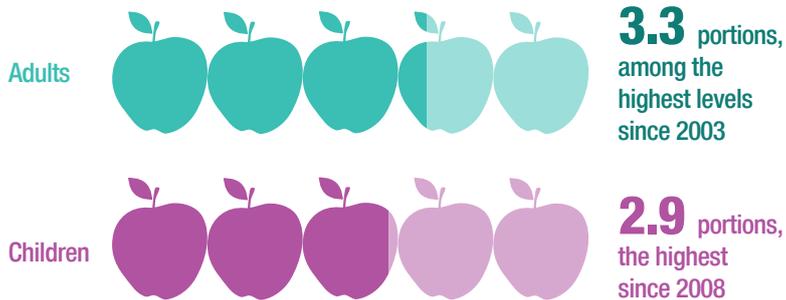
- In 2017, as in previous years, mean fruit and vegetable consumption per day was higher among women (3.5 portions) than men (3.2 portions).

29% of adults

24% of children aged 0-15

consumed non-prescription vitamins or mineral supplements

Women were more likely than men to take vitamins or mineral supplements

24%   **35%**
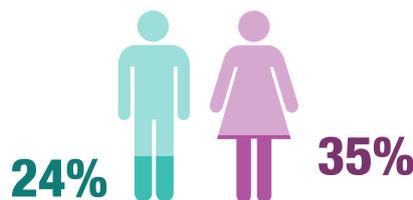
- One in five adults (19%) and children (20%) consumed a supplement containing vitamin D.
- Supplements containing folic acid were consumed by 7% of women (aged 16-49) in 2017.
- Around one in four people (24-25%) living in the two most deprived quintile areas reported current consumption of any form of supplement compared with around one in three (30-34%) of those living in the three least deprived quintile areas.
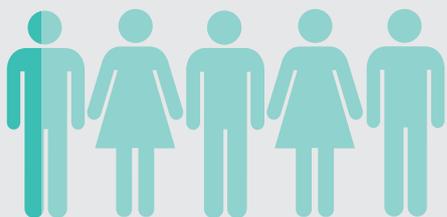
8% of adults experienced food insecurity in 2017 (as defined by being worried during the past 12 months that they would run out of food due to lack of money or resources)

The household types most likely to have worried during the previous 12 months that they would run out of food due to a lack of money or resources were:

Single parents
21%

Adults aged 16-64 living alone
20%

- Worrying about running out of food was more common among those living in the most deprived areas (18% compared with 3% living in the least deprived areas).
- Households with one or two adults, at least one of whom is aged 65 or over, with no children were the least likely to report worrying about running out of food (1-2%).

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6 DIET

Joe Rose

6.1 INTRODUCTION

Poor diet is a factor in one in five deaths around the world, and is the second highest risk factor for early death after smoking[1]. In 2015 it was estimated that diets low in fruit and vegetables or high in sugar, processed foods or sodium directly accounted for 37% of all deaths and just over a quarter of the total global disease burden[2]. Estimates from international comparisons have suggested that around a third of cases of cancer[3] and cardiovascular disease[4] worldwide could be prevented by changes in diet, both through improvements in nutritional content and overall reductions in body mass[5].

Links between diet, in particular the role of saturated fat and fruit and vegetable intake and non-communicable diseases such as cancer, cardiovascular disease and Type 2 diabetes are well established[6,7]. More recent research has broadened understanding of the role of fruit and vegetable intake in reducing the risk of non-communicable diseases. Studies have shown that vegetable consumption is more important than fruit consumption in reducing the risk of certain types of breast cancer[8], stroke[9], and diabetes[10], while fruit consumption has been found to be more strongly associated with reducing the risk of coronary heart disease in women[6] and oesophagal and stomach cancers[11].

Other aspects of diet, including the potentially positive effects of fibre and wholegrains[12], oily fish intake[13,14] and antioxidant vitamins[15] have been studied in relation to cancer, cardiovascular disease and cognitive decline in later life. Folates have been shown to have a role in the prevention of neural tube defects[16]; vitamin D and calcium are determinants of bone health[17]; salt intake is linked to the development of hypertension[18]; and the consumption of red or processed meat is linked to bowel cancer[19,20]. Sugar is well established as a major cause of tooth decay[21] and free sugars (or added sugars) have been linked to the development of obesity and Type 2 diabetes[22]. In children and young people aged 11-18, sugary drinks have been identified as the key contributor to total sugar intake[23].

It is difficult to determine with certainty the full economic burden of poor diet[24]. However the economic impact on the NHS is apparent. Treatment of cardiovascular disease (including hypertension), cancer, Type 2 diabetes and tooth decay represent significant costs to the health service. The most recent evidence on the economic costs of risk factors for chronic disease suggests that unhealthy diet had an economic burden of £5.8 billion in 2006-07; a greater burden on the NHS than smoking, alcohol consumption, overweight and obesity or physical inactivity[25].

This chapter includes information on food insecurity for the first time. A widely accepted definition of food insecurity is: 'the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so'[26]. Evidence from the US and Canada suggests that food insecurity is a dimension of poverty that has specific consequences for diet and health and wellbeing. Household food insecurity is

associated with inadequate intakes of certain nutrients and fruits and vegetables[27]. Food insecurity can lead to the adoption of risk-averse food purchasing habits, where households prioritise purchasing foods that will not go to waste and that are most filling; often this means a reliance on cheap foods that are nutrient-poor but calorie-rich. Research has shown that food insecurity is associated with a range of negative health outcomes across the life cycle. For children, these include low birth weight and some birth defects, compromised development, cognitive problems, anxiety and depression, poorer health and higher odds of chronic conditions[28]. Studies have shown that adults living in food insecure households have poorer mental health, poorer health and are more likely to suffer from chronic conditions such as diabetes, hypertension and mood and anxiety disorders[28]. Food insecurity also makes it difficult to manage existing chronic conditions such as diabetes[29].

6.1.1 Policy background

In Scotland there is wide recognition at national policy level that high consumption of foods high in fat, sugar and salt has wide-ranging consequences for the health of the nation[30].

The **Scottish Dietary Goals** were **revised in 2016**[31] and include:

- The World Health Organisation 5-a-day recommendation for adults (to consume at least five varied 80g portions of fruit and vegetables per day).
- To reduce salt intake from around 9g to 6g per day for adults.
- To reduce average calorie intake by 120 kcal per day and average intake of red meat to 70g per day.
- To provide advice on limiting fat and sugar intake and increasing consumption of fibre and oil-rich fish.
- To reduce the average intake of free sugars to 5% of total dietary energy.
- To increase intake of dietary fibre to 30g per day for adults.
- To maintain intakes of starchy carbohydrates at 50% of total dietary energy.

Existing UK healthy eating advice was also updated as the **Eatwell Guide** in 2016 to illustrate the proportions and types of foods from major food groups which would make up a healthy diet[32]. Following recommendations from the Scientific Advisory Committee on Nutrition (SACN), Scottish Government advice on vitamin D for all age groups has also been updated[33]. The Scottish Government is currently funding a number of programmes aimed at encouraging people to make healthier choices in the way they shop, cook and eat, through its **Eat Better Feel Better** campaign[34]. The **Programme for Government 2017-18** also sets out the Scottish Government's intention to progress measures limiting the marketing of products high in fat, sugar and salt[35].

In October 2017 the Government undertook a public consultation on its plans to transform the wider food environment to improve diet and promote healthy weight among the Scottish population as detailed in **A**

Healthier Future – action and ambitions on diet, activity and healthy weight[36] responses were published in April 2018[37].

Following this, in July 2018, the Scottish Government published **A Healthier Future: Scotland's Diet and Healthy Weight Delivery Plan**[38]. The delivery plan includes an ambition to halve child obesity by 2030 and includes actions aimed at ensuring:

- Children have the best start in life – they eat well and have a healthy weight.
- The food environment supports healthy choices.
- People have access to effective weight management services.
- Leaders across all sectors promote healthy weight and diet.
- Diet related inequalities are reduced.

To encourage manufacturers to reduce the sugar content of their drinks, in 2016 the UK Government proposed a **soft drinks industry levy**[39] to be paid across the UK by producers and importers of soft drinks that contain added sugar. Legislation was published in January 2018, and the levy came into effect on 6th April 2018[40]. Since it was first announced, over 50% of manufacturers have reduced the sugar content of their drinks, the equivalent of 45 million kg of sugar every year[41].

In March 2017, Public Health England (PHE) published guidelines for its **Sugar reduction programme**[42], which has a voluntary target to reduce by 20% by 2020 the level of sugar in the categories that contribute most to the intakes of children up to 18 years. Overall, there was a 2% reduction in the first year (against a target of 5%).

PHE's calorie reduction programme[43] was published in March 2018. It challenges the food industry to achieve a 20% reduction in calories by 2024 in product categories that contribute significantly to children's calorie intakes (up to the age of 18 years) and where there is scope for substantial reformulation and/or portion size reduction. It does not cover foods included in the sugar reduction programme.

On food insecurity, a short-Life Independent Working Group on Food Poverty was established in 2015 to make recommendations to the Scottish Government on actions to tackle food insecurity in Scotland. The group recommended a range of measures focused on increasing incomes and developing sustainable, empowering, inclusive community food models[44]. In particular, the Group recommended that: 'The Scottish Government should introduce and fund a robust system to measure food insecurity in Scotland, alongside wider measures of poverty'[45].

6.1.2 Reporting on diet in the Scottish Health Survey (SHeS)

This chapter provides information on fruit and vegetable consumption among adults and children from 2003 to 2017. Figures on consumption of vitamin or mineral supplements for adults and children as well as food insecurity for adults are also provided for 2017.

The area deprivation data are presented in Scottish Index of Multiple Deprivation (SIMD) quintiles. Where appropriate, to ensure that comparisons are not confounded by different age profiles within categories, data have been age-standardised. Readers should refer to the Glossary at the end of this Volume for a detailed description of SIMD and age-standardisation.

Supplementary tables on diet are also published on the Scottish Health Survey website[46].

6.2   METHODS AND DEFINITIONS

6.2.1   Measuring fruit and vegetable consumption

The module of questions on fruit and vegetable consumption was designed with the aim of providing sufficient detail to monitor population-level adherence to the 5-a-day recommendation. These questions have been asked of all adults (aged 16 and over) participating in the survey since 2003 and of children aged 2 to 15 since 2008.

The module includes questions on consumption of the following food types in the 24 hours to midnight preceding the interview:

- vegetables (fresh, frozen or canned);
- salads;
- pulses;
- vegetables in composites (e.g. vegetable chilli);
- fruit (fresh, frozen or canned);
- dried fruit;
- fruit in composites (e.g. apple pie);
- fresh fruit juice.

A portion is defined as the conventional 80g of a fruit or vegetable. Since 80g is difficult to visualise, survey respondents were asked to describe the amount of each fruit or vegetable they consumed using more everyday terms, such as tablespoons, cereal bowls and slices. These everyday measures were then converted to 80g portions prior to analysis. Examples are given in the questionnaire to aid the recall process, for instance, tablespoons of vegetables, cereal bowls full of salad, pieces of medium sized fruit (e.g. apples) or handfuls of small fruits (e.g. raspberries). In spite of this, there may be some variation between participants' interpretation of how much they consumed. The following table shows the definitions of the portion sizes used for each food item included in the survey:

Food item	Portion size
Vegetables (fresh, frozen or canned)	3 tablespoons
Pulses (dried)	3 tablespoons
Salad	1 cereal bowlful
Vegetables in composites, such as vegetable chilli	3 tablespoons
Very large fruit, such as melon	1 average slice
Large fruit, such as grapefruit	Half a fruit
Medium fruit, such as apples	1 fruit
Small fruit, such as plums	2 fruits
Very small fruit, such as blackberries	2 average handfuls
Dried fruit	1 tablespoon
Fruit in composites, such as stewed fruit in apple pie	3 tablespoons
Frozen fruit/canned fruit	3 tablespoons
Fruit juice	1 small glass (150 ml)

Since the 5-a-day recommendation stresses both volume and variety, the number of portions of fruit juice, pulses and dried fruit is capped so that no more than one portion of each can contribute to the total number of portions consumed. Interviewers record full or half portions, but nothing smaller.

6.2.2 Food Insecurity

In 2017 questions on food insecurity were included in the survey for the first time. The three questions are drawn from the Food Insecurity Experience Scale (developed by the UN). In keeping with the administration procedure for the whole scale, the questions are filtered in the survey (with the second and third questions only being asked if the previous is answered 'yes'). The questions are:

During the last 12 months, was there a time when:

You were worried you would run out of food because of a lack of money or other resources?

You ate less that you thought you should because of a lack of money or other resources?

Your household ran out of food because of lack of money of other resources?

Due to their sensitivity, these questions are asked in the adult and young adult self-complete questionnaires.

6.2.3 Measuring vitamin and mineral supplement use

The following question, designed to measure self-administered supplement use, is included in the core interview, for all adults and children from 2015:

At present, are you taking any vitamins, fish oils, iron supplements, calcium, other minerals or anything else to supplement your diet or improve your health, other than those prescribed by your doctor?

For those who answered positively, this was followed by a new question:

Are you currently taking vitamin D supplements, including as part of a multi-vitamin supplement?

Women aged between 16 and 49 were also asked about their use of folic acid with the question:

At present, are you taking any folic acid supplements such as Solgar folic acid, Pregnacare tablets, Sanatogen Pronatal, or Healthy Start, to supplement your diet or improve your health?

6.3 FRUIT AND VEGETABLE CONSUMPTION

6.3.1 Trends in adult fruit and vegetable consumption since 2003

Adults consumed a mean of 3.3 portions of fruit and vegetables per day in 2017; 1.7 portions per day short of the recommended 5 per day. This level of adult fruit and vegetable consumption is in the upper range of the time series with average consumption among adults having ranged between 3.0-3.3 portions per day since 2003.

In 2017, around one quarter (24%) of adults consumed the recommended five portions of fruit and vegetables on the previous day. This is the highest proportion of adults to meet the 5-a-day recommendation since the trend data started in 2003 (fluctuating between 20-23% between 2003 and 2016) and represents a significant increase on 2016 (20%). A similar pattern was found for both men and women.

One in ten (10%) adults ate no fruit or vegetables on the previous day in 2017. This represents a slight non-significant decrease from 2016 (12%), but is consistent with the fluctuating proportions (9-12%) seen during the time series which has remained relatively stable since 2003.
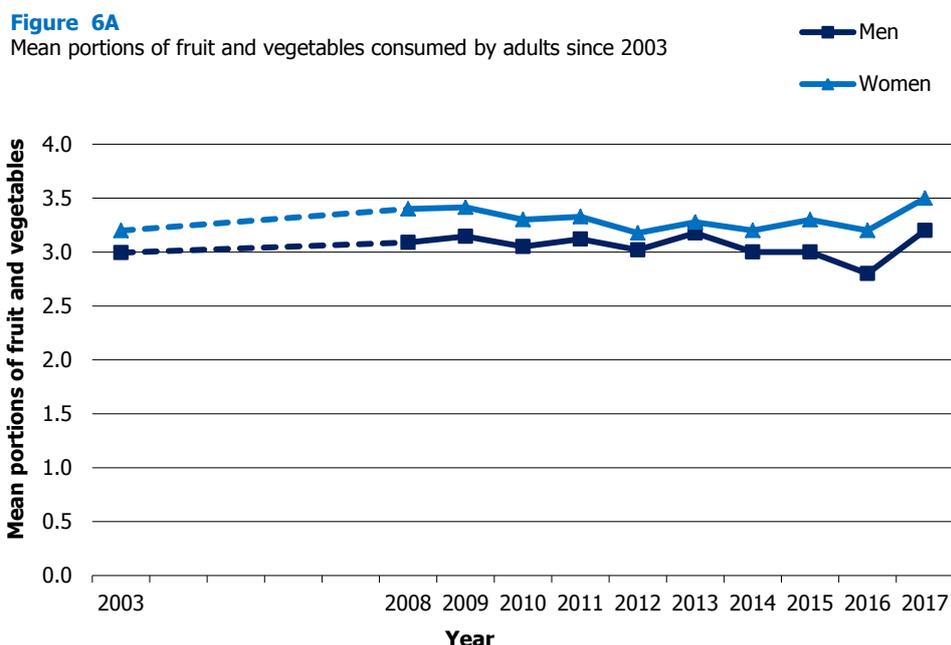
In 2017 mean fruit and vegetable consumption was higher among women than men. Women consumed an average of 3.5 portions per day compared with 3.2 portions per day for men. This pattern is consistent with previous years in the trend series. Since 2003 women have consistently consumed a greater mean level of fruit and vegetable portions (between 0.1 and 0.4 portions a day higher than among men, see Figure 6A).

In 2017, the proportion of men who ate at least five portions of fruit and vegetables on the previous day was significantly lower than the proportion of women who did so (22% and 26% respectively).

In 2017, 11% of men ate no fruit or vegetables on the previous day, compared with 9% of women. These figures are consistent with the proportions seen across the time series for women (7-9%) and suggest

a return to the stable trend seen in men between 2003 and 2014 (10-12%). **Figure 6A, Table 6.1**

Figure 6A
Mean portions of fruit and vegetables consumed by adults since 2003

6.3.2 Adult fruit and vegetable consumption in 2017, by age and sex

Unlike in previous survey years, in 2017 there was no significant difference in the mean portions of fruit and vegetable consumption by age among adults. In previous years adults aged 16-24 consumed fewer portions of fruit and vegetables compared with other age groups, however in 2017 the mean portions of fruit and vegetables for this age group was similar to that for other age groups (3.2 among those aged 16-24 and ranging between 3.3-3.5 among all other age groups).

There was also no correlation between age and the likelihood of consuming at least five portions of fruit and vegetables on the previous day for adults in 2017. Similarly the proportions consuming no fruit or vegetables did not vary significantly by age. Similar patterns by age for fruit and vegetable consumption were found for both men and women.
Table 6.2

6.3.3 Trends in child fruit and vegetable consumption since 2008

In 2017 mean daily fruit and vegetable consumption on the previous day among children aged 2-15 was measured at 2.9 portions. This was the highest mean level since the beginning of the time series, with levels having fluctuated between a mean of 2.7 and 2.8 portions on the previous day since 2008.

The mean consumption of fruit and vegetable portions per day was similar for girls (2.9 portions) and boys (2.8 portions) in 2017. The pattern over time was similar for boys and girls. In previous survey years, among boys the mean number of fruit and vegetables consumed

per day fluctuated between 2.5 and 2.7 and among girls it fluctuated between 2.7 and 2.9.

The proportion of those aged 2-15 who ate the recommended five portions of fruit and vegetables on the previous day has remained relatively stable over time; sitting at 15% in 2017, having fluctuated between 12% and 15% in previous survey years.

In 2017, 1 in 10 (10%) of those aged 2-15 ate no fruit or vegetables on the previous day. This continues a steady trend observed since 2008, with levels remaining between 9% and 11% apart from in 2015 when the level dropped to 7%. **Table 6.3**

6.4 CONSUMPTION OF VITAMIN AND MINERAL SUPPLEMENTS

6.4.1 Adult and child consumption of vitamin and mineral supplements in 2017, by age and sex

In 2017, 29% of adults consumed non-prescribed vitamin or mineral supplements to improve their health with 19% of people consuming a supplement containing vitamin D.

A significantly higher proportion of women (35%) reported taking a vitamin or mineral supplement in 2017, compared with men (24%). Women were also significantly more likely than men to take supplements containing vitamin D (23% compared with 14%).

Vitamin or mineral supplement consumption varied by age but with no clear pattern. Prevalence was highest among those aged 65-74 (37%) and lowest among those aged 16-24 (22%). There was no association between vitamin D consumption and age.

Nearly one in four (24%) children aged 0-15 years took non-prescribed vitamin or mineral supplements in 2017. One in five (20%) consumed a supplement containing vitamin D.

There was no statistically significant difference by sex for vitamin and mineral supplement use among children in 2017.

Supplements containing folic acid were consumed by 7% of women aged 16-49 (this question was restricted to this age group) in 2017 with those aged 25-34 most likely to consume folic acid (14%). **Table 6.4**

6.4.2 Adult consumption of vitamin and mineral supplements (age-standardised) in 2017, by area deprivation

In 2017, those living in the least deprived areas were more likely to consume vitamin or mineral supplements than those in the most deprived areas (34% in the least deprived quintile decreasing to 24% in the most deprived quintile). This association was evident for both men and women, see Figure 6B.

The findings also show a link between area deprivation and vitamin D consumption. A significantly smaller proportion (15%) of those living in the two most deprived quintiles were taking a supplement containing vitamin D, compared with 18-23% of those in the other three quintiles.

Figure 6B, Table 6.5

Figure 6B
Adult consumption of any vitamins or mineral supplements (age-standardised), 2017, by area deprivation and sex

■Men
■Women
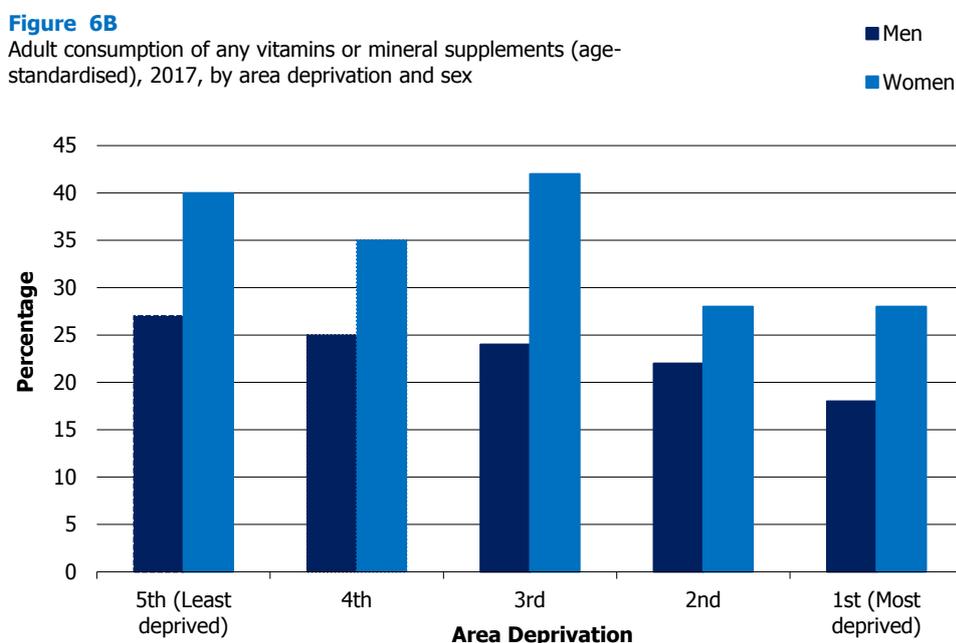
6.5 FOOD INSECURITY

6.5.1 Adult food insecurity in 2017, by age and sex

In 2017, 8% of adults said that, at some point in the previous 12 months, they were worried they would run out of food due to a lack of money or resources. Overall 7% of people ate less than they should due to lack of money or other resources and 4% had run out of food due to lack of money or resources in the previous 12 months. It should be noted that the estimates for prevalence of people eating less than they should due to lack of money or resources or running out of food for this reason are population estimates however as the questions were only asked of those that were worried about running out of food this may slightly underestimate prevalence.

Worrying about running out of food, due to a lack of money or resources, in the previous 12 months was significantly associated with age. Food insecurity was more prevalent amongst younger people with 13% of those aged 16-44 stating that they had worried about running out of food, due to a lack of money or resources, in the previous 12 months, compared with 7% among those aged 45-64 and 1% among those aged 65 and over. Similar patterns were found for both men and women.

Eating less due to a lack of money or resources in the last 12 months was also significantly associated with age. The proportion of people

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eating less was greater among younger age groups with 11% of those aged 16-44 eating less compared with 1% among those aged 65 and over. This pattern was similar for both men and women.

Running out of food was also significantly associated with age. Those aged 16-44 were most likely to have run out of food in the last 12 months (6%) and those aged 65 and over were least likely (<0.5%). A similar pattern was observed for men and women separately. **Table 6.6**

6.5.2 Adult food insecurity in 2017, by household type

One in five (20%) adults aged 16-64 who lived alone (single adults), and around one in five (21%) single parent adults reported that they worried about running out of food, due to a lack of money or resources, in the previous 12 months. These groups were more likely than other types of household, to state this.

Around one in ten of those in households with at least two adults (large family, small adult and small family) said that they had worried about running out of food, due to a lack of money or resources, in the previous 12 months (11%, 9% and 8% respectively). Among those living in large adult households (comprising 3 or more adults and no children) 6% had worried about running out of food in the previous 12 months.

Household types without children and of an older age demographic were the least likely to report worrying about running out of food. Among single older adult households (comprising of one adult aged 65 and over with no children) 2% reported worrying about running out of food in the previous 12 months and 1% of older smaller families (comprising one adult under 65 and one adult over 65 or two adults aged 65 and over with no children) reported this. The pattern in worrying about running out of food by household type was similar for both men and women, although it should be noted that the base sizes for male single parent households were too small to report.

Single adult households and single parent households were also the most likely to report eating less than they should or running out of food in the last 12 months. 18% of single adult and single parent households ate less than they should (compared with 1-10% prevalence among other household types) and 14% of single adult households and 10% of single parent households reported running out of food (compared with 0-5% prevalence among other household types). **Table 6.7**

6.5.3 Adult food insecurity (age-standardised) in 2017, by area deprivation

There was a significant association between area deprivation and food insecurity in 2017. Nearly one in five (18%) people living in the most deprived areas reported having been worried about running out of food due to a lack of money or resources in the previous 12 months. This compares with 3% of those living in the least deprived areas. The pattern was similar for men (3% to 19%) and women (4% to 17%).

Similarly, the proportion that reported to have eaten less than they should due to a lack of money or resources significantly increased with area deprivation. In the least deprived areas, 3% of adults ate less compared with 15% in the most deprived areas. This pattern was reflected in both men (3% to 15%) and women (3% to 14%).

Among those in the least deprived areas, 1% had run out of food in the last 12 months. This increased to 10% of people in the most deprived areas. This pattern was similar for both men (1% to 11%) and women (1% to 9%). **Figure 6C, Table 6.8**

Figure 6C
Adult food insecurity (age-standardised), 2017, by area deprivation and sex

Legend:
- Worried run out of food
- Ate less
- Run out of food
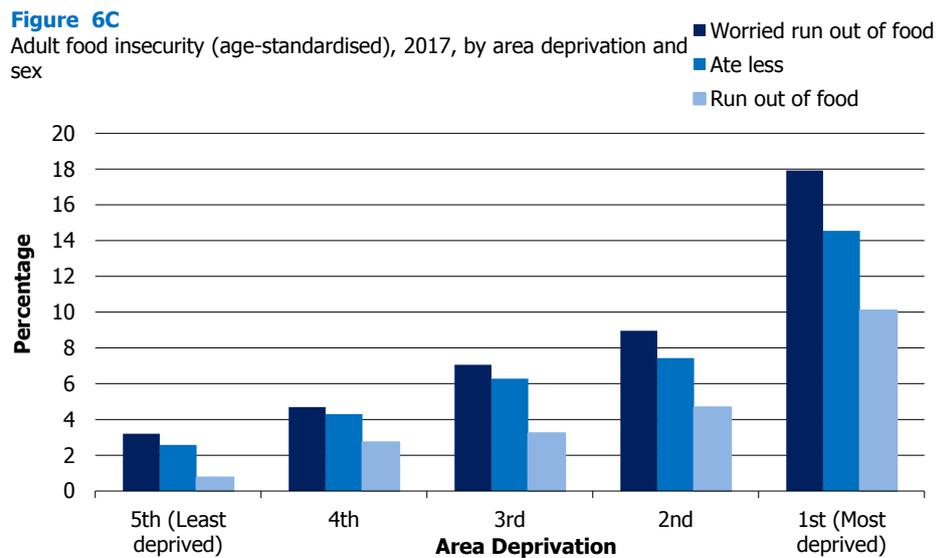
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Table list

Table 6.1 Adult fruit and vegetable consumption, 2003 to 2017

Portions per day	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Men											
None	11	10	11	12	10	11	11	12	13	14	11
5 portions or more	20	20	22	20	20	19	22	20	19	17	22
Mean	3.0	3.1	3.1	3.1	3.1	3.0	3.2	3.0	3.0	2.8	3.2
Standard error of the mean	0.06	0.07	0.05	0.06	0.05	0.08	0.07	0.07	0.07	0.07	0.09
Median	2.7	2.7	2.8	2.7	2.7	2.7	3.0	2.5	2.5	2.3	3.0
Women											
None	8	7	7	9	8	9	8	9	9	9	9
5 portions or more	22	24	25	23	23	21	22	20	22	22	26
Mean	3.2	3.4	3.4	3.3	3.3	3.2	3.3	3.2	3.3	3.2	3.5
Standard error of the mean	0.05	0.06	0.05	0.05	0.05	0.05	0.06	0.07	0.07	0.07	0.07
Median	3.0	3.0	3.0	3.0	3.0	2.8	3.0	3.0	3.0	2.7	3.2
All adults											
None	9	9	9	10	9	10	9	10	11	12	10
5 portions or more	21	22	23	22	22	20	22	20	21	20	24
Mean	3.1	3.3	3.3	3.2	3.2	3.1	3.2	3.1	3.1	3.0	3.3
Standard error of the mean	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06
Median	2.7	3.0	3.0	3.0	3.0	2.7	3.0	2.7	2.7	2.7	3.0

Table 6.1 - Continued

Portions per day	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):											
Men	*3834*	*3087*	*3594*	*3465*	*3606*	*2309*	*2343*	*2234*	*2395*	*2073*	*1776*
Women	*4281*	*3375*	*3926*	*3775*	*3931*	*2502*	*2547*	*2420*	*2597*	*2244*	*1919*
All adults	*8115*	*6462*	*7520*	*7239*	*7537*	*4811*	*4890*	*4654*	*4992*	*4316*	*3696*
Bases (unweighted):											
Men	*3590*	*2840*	*3283*	*3112*	*3275*	*2126*	*2138*	*2066*	*2244*	*1892*	*1597*
Women	*4526*	*3621*	*4241*	*4127*	*4260*	*2686*	*2754*	*2589*	*2750*	*2427*	*2099*
All adults	*8116*	*6461*	*7524*	*7239*	*7535*	*4812*	*4892*	*4655*	*4994*	*4319*	*3696*

Table 6.2 Adult fruit and vegetable consumption, 2017, by age and sex

Aged 16 and over   *2017*

Portions per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
None	10	12	14	12	11	5	11	11
Less than 1 portion	4	3	4	5	3	5	4	4
1 portion or more but less than 2	23	21	16	18	16	19	14	18
2 portions or more but less than 3	12	19	15	16	16	15	22	16
3 portions or more but less than 4	20	16	19	15	20	16	13	17
4 portions or more but less than 5	8	10	9	12	13	15	18	12
5 portions or more	23	19	24	22	20	26	18	22
Mean	3.2	3.1	3.3	3.2	3.1	3.4	3.1	3.2
Standard error of the mean	0.33	0.21	0.22	0.17	0.16	0.13	0.18	0.09
Median	3.0	2.5	3.0	2.7	3.0	3.0	2.8	3.0
Women								
None	15	8	8	10	8	6	6	9
Less than 1 portion	5	4	6	3	4	3	4	4
1 portion or more but less than 2	20	18	13	13	13	14	13	15
2 portions or more but less than 3	16	16	15	18	16	17	21	17
3 portions or more but less than 4	10	15	17	15	17	22	19	16
4 portions or more but less than 5	11	11	15	13	13	14	15	13
5 portions or more	23	28	27	28	27	23	23	26
Mean	3.2	3.5	3.7	3.6	3.6	3.4	3.4	3.5
Standard error of the mean	0.24	0.16	0.16	0.16	0.14	0.13	0.15	0.07
Median	2.5	3.3	3.3	3.0	3.5	3.2	3.2	3.2

Table 6.2 - *Continued*

Portions per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
None	12	10	11	11	10	6	8	10
Less than 1 portion	5	4	5	4	4	4	4	4
1 portion or more but less than 2	22	20	14	16	15	16	14	17
2 portions or more but less than 3	14	17	15	17	16	16	21	16
3 portions or more but less than 4	15	16	18	15	18	19	16	17
4 portions or more but less than 5	9	10	12	12	13	15	16	12
5 portions or more	23	24	25	25	24	24	21	24
Mean	3.2	3.3	3.5	3.4	3.4	3.4	3.3	3.3
Standard error of the mean	0.21	0.14	0.14	0.12	0.12	0.10	0.13	0.06
Median	2.7	3.0	3.0	3.0	3.0	3.2	3.0	3.0
Bases (weighted):								
Men	*242*	*294*	*270*	*323*	*282*	*221*	*144*	*1776*
Women	*237*	*306*	*285*	*346*	*298*	*244*	*203*	*1919*
All adults	*480*	*600*	*554*	*669*	*580*	*465*	*347*	*3696*
Bases (unweighted):								
Men	*133*	*219*	*201*	*244*	*327*	*283*	*190*	*1597*
Women	*159*	*287*	*324*	*366*	*384*	*342*	*237*	*2099*
All adults	*292*	*506*	*525*	*610*	*711*	*625*	*427*	*3696*

Table 6.3 Child fruit and vegetable consumption, 2008 to 2017

Portions per day	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%
Boys										
None	11	9	11	10	12	11	10	9	10	10
5 portions or more	14	14	12	13	12	13	13	12	11	15
Mean	2.7	2.7	2.6	2.7	2.5	2.7	2.7	2.7	2.7	2.8
Standard error of the mean	0.09	0.06	0.09	0.08	0.09	0.09	0.11	0.09	0.08	0.11
Median	2.3	2.4	2.3	2.5	2.2	2.3	2.3	2.3	2.3	2.5
Girls										
None	8	9	10	9	9	10	9	5	8	9
5 portions or more	13	16	13	12	14	13	14	13	15	16
Mean	2.9	2.9	2.7	2.8	2.9	2.8	2.8	2.8	2.9	2.9
Standard error of the mean	0.09	0.08	0.08	0.08	0.09	0.09	0.10	0.10	0.09	0.10
Median	2.7	2.7	2.5	2.5	2.7	2.7	2.7	2.5	2.7	2.7
All children										
None	10	9	11	9	11	10	10	7	9	10
5 portions or more	13	15	12	13	13	13	14	12	13	15
Mean	2.8	2.8	2.6	2.7	2.7	2.7	2.8	2.7	2.8	2.9
Standard error of the mean	0.07	0.05	0.07	0.06	0.07	0.07	0.08	0.07	0.07	0.08
Median	2.5	2.5	2.3	2.5	2.5	2.5	2.3	2.5	2.5	2.7

Table 6.3 - Continued

Portions per day	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):										
Boys	*791*	*1153*	*792*	*881*	*800*	*830*	*742*	*626*	*689*	*714*
Girls	*736*	*1108*	*759*	*835*	*759*	*787*	*720*	*627*	*674*	*688*
All children	*1527*	*2261*	*1551*	*1716*	*1559*	*1616*	*1461*	*1253*	*1363*	*1403*
Bases (unweighted):										
Boys	*764*	*1153*	*821*	*855*	*761*	*819*	*729*	*634*	*665*	*706*
Girls	*752*	*1100*	*708*	*833*	*784*	*761*	*730*	*612*	*680*	*669*
All children	*1516*	*2253*	*1529*	*1688*	*1545*	*1580*	*1459*	*1246*	*1345*	*1375*

Table 6.4 Consumption of vitamin or mineral supplements, adults and children, 2017, by age and sex

All ages   *2017*

Consumption of vitamin or mineral supplements	Age								Total 16+
	0-15	16-24	25-34	35-44	45-54[a]	55-64	65-74	75+	
	%	%	%	%	%	%	%	%	%
Male									
Taking any supplement	25	18	26	22	19	26	32	24	24
Taking supplement containing vitamin D	21	10	15	14	15	15	18	11	14
No supplements taken	75	82	74	78	81	74	68	76	76
Female									
Taking any supplement	23	27	39	35	32	35	42	34	35
Taking supplement containing vitamin D	20	20	30	26	20	23	24	19	23
Taking supplement containing folic acid[b]	n/a	2	14	5	2	n/a	n/a	n/a	7
No supplements taken	77	73	61	65	68	65	58	66	65
All									
Taking any supplement	24	22	32	28	26	31	37	30	29
Taking supplement containing vitamin D	20	15	23	20	18	19	21	16	19
No supplements taken	76	78	68	72	74	69	63	70	71

Table 6.4 - Continued

Consumption of vitamin or mineral supplements	Age								Total
	0-15	16-24	25-34	35-44	45-54[a]	55-64	65-74	75+	
Bases (weighted):									
Males	*819*	*242*	*294*	*270*	*323*	*282*	*221*	*144*	*1776*
Females	*784*	*237*	*306*	*285*	*346*	*298*	*244*	*203*	*1919*
Females aged 16-49		*237*	*306*	*284*	*169*				*996*
All	*1603*	*480*	*600*	*554*	*669*	*580*	*465*	*347*	*3696*
Bases (unweighted):									
Males	*819*	*133*	*219*	*201*	*244*	*327*	*283*	*190*	*1597*
Females	*784*	*159*	*287*	*324*	*366*	*384*	*342*	*237*	*2099*
Females aged 16-49		*159*	*287*	*323*	*171*				*940*
All	*1603*	*292*	*506*	*525*	*610*	*711*	*625*	*427*	*3696*

a Folic acid data only collected from women aged 16-49 so the figure included here is for women aged 45-49

b Asked of women aged 16-49. Total is for that age group only

Table 6.5 Adult consumption of vitamin or mineral supplements (age-standardised), 2017, by area deprivation and sex

Aged 16 and over *2017*

Consumption of vitamin or mineral supplements	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
Taking any supplement	27	25	24	22	18
Taking supplement containing vitamin D	17	13	16	13	11
No supplements taken	73	75	76	78	82
Women					
Taking any supplement	40	35	42	28	28
Taking supplement containing vitamin D	30	22	29	18	18
No supplements taken	60	65	58	72	72
All adults					
Taking any supplement	34	30	33	25	24
Taking supplement containing vitamin D	23	18	23	15	15
No supplements taken	66	70	67	75	76
Bases (weighted):					
Men	*376*	*380*	*358*	*370*	*292*
Women	*403*	*371*	*389*	*379*	*377*
All adults	*779*	*751*	*747*	*749*	*669*
Bases (unweighted):					
Men	*312*	*375*	*361*	*313*	*236*
Women	*411*	*456*	*466*	*397*	*369*
All adults	*723*	*831*	*827*	*710*	*605*

Table 6.6 Adult food insecurity, 2017, by age and sex

Aged 16 and over   *2017*

Food insecurity[a]	Age			Total
	16-44	45-64	65+	
	%	%	%	%
Men				
Worried run out of food	13	6	1	8
Ate less	11	5	0	7
Ran out of food	6	4	0	4
Women				
Worried run out of food	13	7	1	8
Ate less	10	6	1	7
Ran out of food	6	4	1	4
All adults				
Worried run out of food	13	7	1	8
Ate less	11	6	1	7
Ran out of food	6	4	0	4
Bases (weighted):				
Men	*705*	*533*	*308*	*1546*
Women	*724*	*562*	*377*	*1663*
All adults	*1429*	*1095*	*685*	*3209*
Bases (unweighted):				
Men	*487*	*500*	*398*	*1385*
Women	*681*	*659*	*496*	*1836*
All adults	*1168*	*1159*	*894*	*3221*

a In the last 12 months… because of a lack of money or other resources

Table 6.7 Adult food insecurity, 2017, by household type

Food insecurity[a]	Single adults	Single parent	Single older	Small family	Older smaller family	Large adult	Small adult	Large family
	%	%	%	%	%	%	%	%
Men								
Worried run out of food	21	*	3	8	1	4	9	12
Ate less	20	*	1	7	1	2	8	10
Ran out of food	17	*	1	4	0	1	4	3
Women								
Worried run out of food	18	23	1	8	1	7	9	10
Ate less	15	21	1	7	0	5	7	9
Ran out of food	11	12	0	4	0	3	4	6
All adults								
Worried run out of food	20	21	2	8	1	6	9	11
Ate less	18	18	1	7	1	4	8	10
Ran out of food	14	10	1	4	0	2	4	5
Bases (weighted):								
Men	*205*	*8*	*70*	*218*	*235*	*273*	*439*	*99*
Women	*160*	*59*	*162*	*274*	*250*	*233*	*400*	*126*
All adults	*365*	*68*	*231*	*491*	*485*	*506*	*838*	*225*
Bases (unweighted):								
Men	*216*	*9*	*96*	*186*	*292*	*158*	*349*	*79*
Women	*200*	*79*	*212*	*293*	*327*	*189*	*410*	*126*
All adults	*416*	*88*	*308*	*479*	*619*	*347*	*759*	*205*

a In the last 12 months… because of a lack of money or other resources

Table 6.8   Adult food insecurity (age-standardised), 2017, by area deprivation and sex

Aged 16 and over   *2017*

Food insecurity[a]	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
Worried run out of food	3	6	6	9	19
Ate less	3	5	5	8	15
Ran out of food	1	3	3	5	11
Women					
Worried run out of food	4	4	8	9	17
Ate less	3	3	7	7	14
Ran out of food	1	2	3	4	9
All adults					
Worried run out of food	3	5	7	9	18
Ate less	3	4	6	7	15
Ran out of food	1	3	3	5	10
Bases (weighted):					
Men	*346*	*327*	*316*	*303*	*253*
Women	*356*	*326*	*350*	*318*	*311*
All adults	*702*	*653*	*666*	*621*	*564*
Bases (unweighted):					
Men	*288*	*326*	*306*	*259*	*206*
Women	*368*	*404*	*419*	*337*	*308*
All adults	*656*	*730*	*725*	*596*	*514*

a In the last 12 months… because of a lack of money or other resources

Chapter 7

Physical Activity

SUMMARY
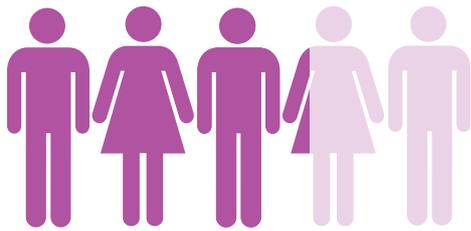
Two thirds of adults
(65%) met the guidelines for Moderate or Vigorous Physical Activity (MVPA) in 2017, a slight increase since 2012 (62%)

- Adherence to the guidelines tended to decline with age, from just over three-quarters of those aged 16-44 (76-78%) to just over a quarter of those aged 75 and above (28%).
- Older adults were more likely than younger to have very low levels of activity (equivalent to less than half an hour a week of moderate exercise); half of all adults aged 75 and above (50%) compared to one in nine of those aged 16-44 (10-12%) had very low levels of activity.

Men continued to be more likely than women to meet the MVPA guidelines

71% **60%**
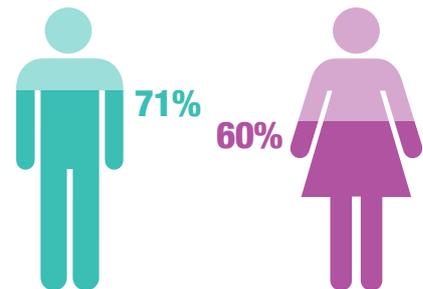
- Adherence to the MVPA guidelines was more common among adults in less deprived areas, declining from 72% in the least deprived quintile to 56% in the most deprived quintile.
- Men spent around one and a half times as long as women doing any form of moderate to vigorous physical activity each week, an average of 15.1 hours for men compared to 9.9 hours for women.

Physical activity levels for children aged 5-15 did not vary significantly by deprivation, but participation in sport for children aged 2-15 in the previous week did

1st (most deprived)	52%
2nd	59%
3rd	67%
4th	75%
5th (least deprived)	82%

67% of children aged 2-15 had participated in sport in the last week, with similar rates for boys and girls

66% **67%**
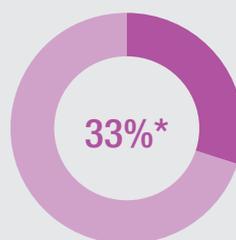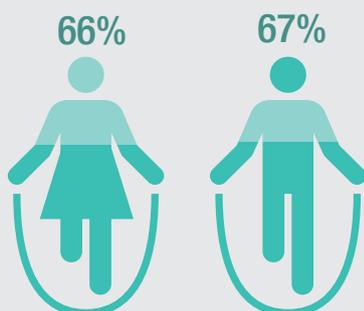
33%*
of children aged 5-15 met the guideline of at least 60 minutes physical activity on each day of the previous week (*this is a new measure of physical activity)

- The proportion of children meeting the physical activity guidelines declined with age, from 45% of those aged 5-7 to 38% of those aged 8-10 to 28% of those aged 11-12 to 18% of those aged 13-15.
- Participation in sport was lowest for teenage girls (45% of those aged 13-15) and for pre-school boys (48% of those aged 2-4).

7 PHYSICAL ACTIVITY

Lucy Dean

7.1 INTRODUCTION

There is widespread consensus around the evidence base for the health, economic and social benefits of physical activity with strong scientific evidence that sufficient, regular physical activity is beneficial for the health of body and mind. Physical activity improves the health of the heart; skeletal muscles; bones; blood; immune system and nervous system. Physical activity also improves psychological wellbeing; self-perception and self-esteem; and mood and sleep quality[1],[2].

Furthermore, there is clear evidence that physical activity reduces the risk of over twenty five chronic health conditions, including coronary heart disease, stroke, type 2 diabetes, cancer, obesity, mental health problems and musculoskeletal problems, and has secondary prevention benefits for many others[3],[4].

We also know that physical *inactivity* shortens life expectancy. The most recent global estimate is that inactivity is responsible for 9% of premature deaths, or 5.3m of the 57 million deaths that occurred worldwide in 2008[5]. Physical inactivity is estimated to kill around 2,500 Scots each year and cause direct costs to the NHS of around £91m per year[6]. Research suggests that high levels of moderate intensity physical activity (ie, about 60–75 min per day) seem to eliminate the increased risk of death associated with high levels of physical inactivity[7].

The UK Chief Medical Officers' guidelines on recommended amounts of physical activity for adults were issued in 2011[8]. Broadly, in adults, there is a dose-response relationship between physical activity and health, meaning greater benefits occur with greater participation. The largest reductions in disease risk occur at the lower end of the spectrum, implying the greatest benefits from a population health perspective arise from moving from inactivity to some level of activity. The available evidence to date on levels of activity suggests that any is better than none, some is good, and more is better[9],[10].

It is important to distinguish between different domains in which physical activity occur in order to assess potential benefits. Recent evidence suggests that while leisure time physical activities and transport-related physical activities (such as cycling) are associated with better mental health outcomes, other types such as household physical actvitiy had no relationship with mental health or ill-health and work-related physical actvitiy was associated with poorer mental health[11].

Table 7A UK CMO physical activity guidelines (2011)

Age group	Guidelines
Early years – children under 5 years	o Physical activity should be encouraged from birth, particularly through floor-based play and water-based activities in safe environments. o Children capable of walking unaided should be physically active daily for at least 180 minutes (3 hours), spread throughout the day. o Minimise amount of time spent being sedentary (being restrained or sitting) for extended periods (except time spent sleeping).
Children and young people aged 5 to 18	o Should engage in moderate to vigorous activity for at least 60 minutes and up to several hours every day. o Vigorous activities, including those that strengthen muscles and bones, should be carried out on at least 3 days a week. o Extended periods of sedentary activities should be limited. o Should be active daily.
Adults aged 19-64	o Should engage in at least moderate activity for a minimum of 150 minutes a week (accumulated in bouts of at least 10 minutes) - for example by being active for 30 minutes on five days a week. o Alternatively, 75 minutes of vigorous activity spread across the week will confer similar benefits to 150 minutes of moderate activity (or a combination of moderate and vigorous activity). o Activities that strengthen muscles should be carried out on at least two days a week. o Extended periods of sedentary activities should be limited.
Adults aged 65 and over	o In addition to the guidance for adults aged 19-64, older adults are advised that any amount of physical activity is better than none, and more activity provides greater health benefits. o Older adults at risk of falls should incorporate activities to improve balance and coordination on at least two days a week.

7.1.1 Policy Background

In common with many developed societies, Scotland faces increasing challenges to public health arising from lifestyle behaviours, wider social-cultural factors that prevent positive health choices being made and a modern environment that impacts on the health and wellbeing of individuals, families and communities.

We know that the drivers of good health are for the most part in our homes, schools and communities and that improving public health means creating the conditions where people have the hope and purpose to think better choices are available to them. That means looking to the deep-rooted causes of social and economic inequality which result in children born into Scotland's most deprived communities being likely to live for 20 fewer years in good health. It also means recognising that improving public health will require concerted effort across the whole of society.

The Scottish Government and COSLA have jointly published the **Public Health Priorities for Scotland** (2018)[12], aimed at focussing action across the public sector and voluntary sector and in communities. The priorities are the first milestone in a wider reform of public health. Physical activity, in conjunction with eating well and maintaining a healthy weight, forms one of those priorities.

Following publication of the public health priorities, the Scottish Government has set out the actions that the Scottish Government and their partners are undertaking to encourage and support people in Scotland to be more active, more often in the **Active Scotland Delivery Plan** (2018)[13]. This is part of a suite of strategies and action plans across the public health portfolio and builds upon the ambitions for a more active Scotland as set out by the Scottish Government in the **Active Scotland Outcomes Framework**[14], published in 2014, with progress being reported across a range of indicators[15]

The Delivery Plan sets out the Scottish Government's vision for a Scotland where people are more active, more often. This means physical activity becoming a routine part of everyone's daily life, whether that is through walking or cycling to work, school, or to the shops, through gardening or dance, through active play or formal sport, or through any activities which result in Scots sitting less and moving more.

The plan also sets out the Scottish Government's ambition to reduce physical inactivity in Scotland in line with the World Health Organization's (WHO) goal to achieve a relative 15% reduction worldwide by 2030[16], as set out in the WHO Global Action plan on Physical Activity 'More Active People for a Healthier World[17], published in 2018.

7.1.2 Reporting on physical activity in the Scottish Health Survey

Physical activity continues to be a priority for the Scottish Government and is recognised as a key aspect of to the new NPF outcome that 'we are healthy and active'. SHeS is the source for monitoring the percentage of adults meeting the physical activity recommendations which is one of the indicators used to gauge progress on the overall outcome[18].

Adult adherence to the guidelines on moderate / vigorous physical activity (MVPA) is presented in this chapter along with sport participation levels. Levels of child physical activity, both including and excluding school-based activities, and in child participation in sports and exercise are also presented.

The area deprivation data for physical activity are presented in Scottish index of Multiple Deprivation (SIMD) quintiles. To ensure that the comparisons presented are not confounded by the different age profiles of the quintiles, the data have been age-standardised. Readers should

refer to the Glossary at the end of this Volume for a detailed description of SIMD and age-standardisation.

Supplementary tables on physical activity are available on the survey website[19].

7.2 METHODS AND DEFINITIONS

7.2.1 Adult physical activity questionnaire

The SHeS questionnaire[20] asks about four main types of physical activity:

- Home-based activities (housework, gardening, building work and DIY)
- Walking
- Sports and exercise
- Activity at work.

Information is collected on the:

- time spent being active
- intensity of the activities undertaken
- frequency with which activities are performed.

7.2.2 Adherence to adult physical activity guidelines

Monitoring adherence to the revised guidelines (discussed in Section 7.1) required several changes to be made to the SHeS physical activity questions in 2012. Details of the amendments made to the module, and fuller details of the information collected about physical activity, are outlined in the 2012 SHeS annual report[21].

The current activity guidelines advise adults to accumulate 150 minutes of moderate activity or 75 minutes of vigorous activity per week or an equivalent combination of both, in bouts of 10 minutes or more. These guidelines are referred to throughout this chapter as the MVPA guidelines (Moderate or Vigorous Physical Activity). To help assess adherence to this guideline, the intensity level of activities mentioned by participants was estimated. Activities of low intensity, and activities of less than 10 minutes duration, were not included in the assessment. This allowed the calculation of a measure of whether each SHeS participant adhered to the guideline, referred to in the text and tables as "adult summary activity levels". A more detailed discussion of this calculation is provided in the 2012 report[22].

Table 7B Adult summary activity levels[a]

Meets MVPA guidelines	Reported 150 mins/week of moderate physical activity, 75 mins vigorous physical activity, or an equivalent combination of these.
Some activity	Reported 60-149 mins/week of moderate physical activity, 30-74 mins/week vigorous physical activity, or an equivalent combination of these.
Low activity	Reported 30-59 mins/week of moderate physical activity, 15-29 mins/week vigorous physical activity or an equivalent combination of these.
Very low activity	Reported less than 30 mins/week of moderate physical activity, less than 15 mins/week vigorous physical activity, or an equivalent combination of these.

[a] Only bouts of 10 minutes or more were included towards the 150 minutes per week guideline

To avoid overcomplicating the text, where descriptions are provided of the summary activity levels, they tend to refer only to moderate physical activity, although the calculations were based on moderate or vigorous activity as described above.

In 2017 data is reported on the level of participation in the last four weeks in physical actvitiy within four distinct domains:

- Heavy housework
- Gardening/DIY/heavy building work (or heavy manual work)
- Sports and exercise
- Walking
- Total (of all of the above)

For each of these domains the mean number of days in which adults have participated in the last four weeks is provided along with the mean number of hours spent doing each type of actvitiy at a time. These are compared for men and women and different age groups. This data was last reported on in the survey in 2011 although caution should be taken when comparing the results due to the revisions made to the physical activity module in 2012.

7.2.3 Child physical activity questionnaire

The questions on child physical activity are slightly less detailed than those for adults[23]. No information on intensity is collected (with the exception of asking those aged 13-15 about their walking pace). The questions cover:

- Sports and exercise
- Active play including housework and gardening
- Walking

The questions were changed in the survey in 2017 to ask children which days (Monday to Sunday) in the previous week they participated in each different type of physical activity (as outlined above) and the

amount of time they spent doing that particular activity on each of the specific days mentioned. In previous years children were asked to provide information on the *average* duration of sports and exercise activities for a *typical* weekday and *typical* weekend day. They were not asked to differentiate between different weekday or weekend days or to provide a specific duration for each separate day. This wording did not reflect childrens' physical activity guidelines which state that children should be active for at least 60 minutes every day. The two different methods of wording the questions provide very different estimates of children's physical activity. The questions were changed this year to provide an element of comparability with the Health Survey for England in which children are asked to provide the information based on every day in the last week[24] (every 3 years).

Due to this revision in 2017 it is not possible to compare the data on the proportion of children in Scotland meeting the recommended minimum of 60 minutes moderate to vigorous physical actvitiy per day on average over the course of the last week to previous year's data from the SHeS. Whilst the new questions provide greater detail, it should be borne in mind that recall to this level of detail is likely to have some impact on the estimates. Issues around recall are also likely to have had some impact on the average day estimates from previous years when respondents were asked to provide an average time rather than the specific time on each day.

The questions about physical activity at school were also amended in 2017. Children at school were also asked about which days they were active at school and also the length of time they were active on each specific day. These questions followed a similar format to the non school time described above and therefore differ significantly from the previous method for collecting this data.

7.2.4   Adherence to child physical activity guidelines

For the purposes of calculating physical activity levels, it was assumed that all reported activities were of at least moderate intensity. Data on each of the different activities have been summarised to provide an overall measure of child physical activity. This summary measure takes into both the time spent participating in physical activity on each day in the last week. Each child's level of physical activity was assigned to one of three categories:

Table 7C Child summary activity levels

Meets guideline	Active on all 7 days for at least 60 minutes each day
Some activity	Active on all 7 days for between 30 and 59 minutes each day
Low activity	Active on all 7 days in last week or for an average of less than 30 minutes a day

7.3 ADULT PHYSICAL ACTIVITY LEVELS

7.3.1 Summary activity levels since 2012

In 2017, amost two-thirds (65%) of adults met the guidelines for moderate or vigorous physical activity (MVPA) of at least 150 minutes of moderate physical activity, 75 minutes vigorous physical activity, or an equivalent combination of the two, per week. Additionally, 11% reported some physical activity, 4% reported low levels, and 20% reported very low levels. As shown in Figure 7A, the proportion of all adults meeting the guidelines was slightly higher than in 2012 (62%), although it has not changed significantly since 2013.

As in previous years, men were significantly more likely than women in 2017 to meet the guidelines on physical activity (71% compared with 60%).

Figure 7A, Table 7.1
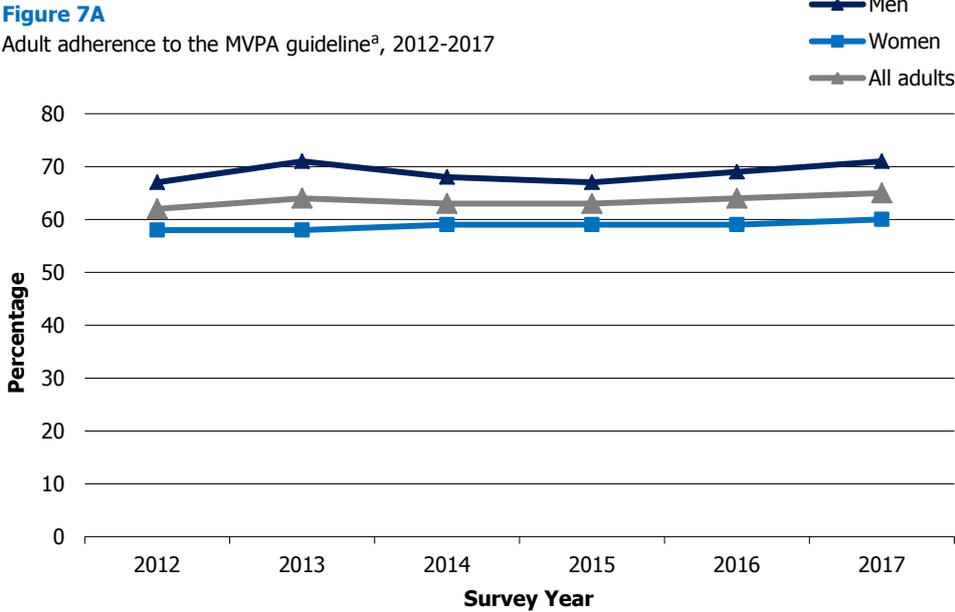
Figure 7A
Adult adherence to the MVPA guideline[a], 2012-2017

Legend: Men, Women, All adults

[a] Meets moderate/vigorous physical activity guideline of 150 minutes of moderate, 75 minutes vigorous, or combination of both each week.

7.3.2 Summary adult physical activity levels, 2017, by age and sex

Physical activity levels among adults were significantly associated with age, with younger groups more likely than older age groups to meet the MVPA guidelines. Adherence to the guidelines was highest among those aged 16-44 (76-78%) and declined from 68% among those aged 45-54 to 28% among adults aged 75 and over. The pattern by age was similar for men and women.

The decline in activity levels by age among both men and women corresponded to increasing levels of very low activity (less than half an hour a week of moderate activity or the equivalent level of vigorous activity) as age increased. The proportion with very low activity levels

increased from a range of 10-12% among the three youngest age groups (16-44) to 50% among adults aged 75 and over.

Physical actvity levels were higher for men than women across all age groups, as illustrated by Figure 7B. The greatest difference between men and women's adherence to the MVPA guidelines was in the youngest and oldest age groups: 89% of men aged 16-24 met the guidelines compared with 67% of women (22 percentage points difference) and 36% of men aged 75 and over met the guidelines compared with 22% of women (14 percentage points difference). Differences in the level of adherence to the guidelines between men and women were much smaller between the ages of 35 and 74 (5-7 percentage points). **Figure 7B, Table 7.2**

Figure 7B

Adult adherence to the MVPA[a] guideline, 2017, by age and sex
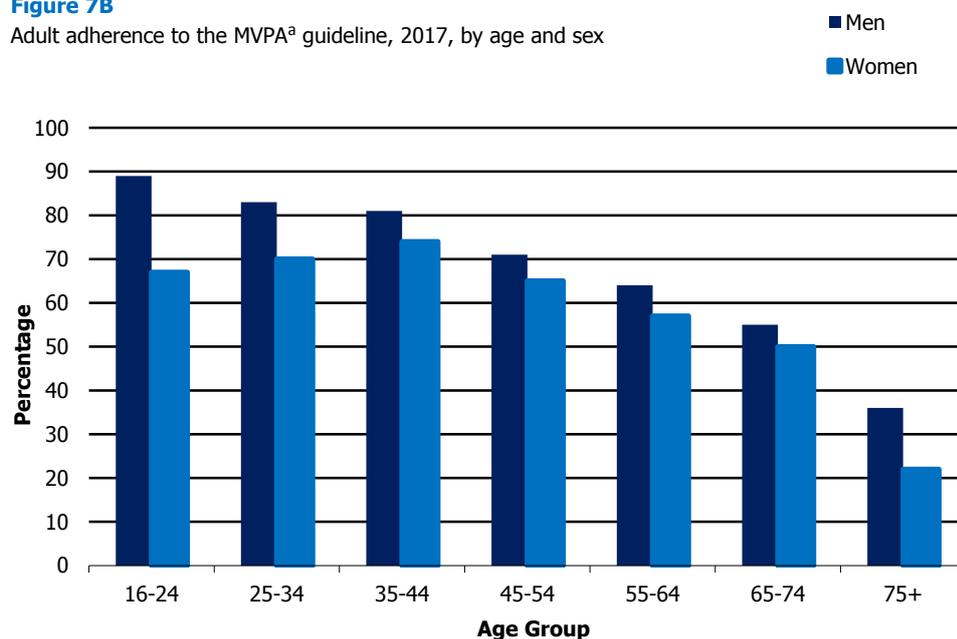
[a] Meets moderate/vigorous physical activity guideline of 150 minutes of moderate, 75 minutes vigorous, or combination of both each week

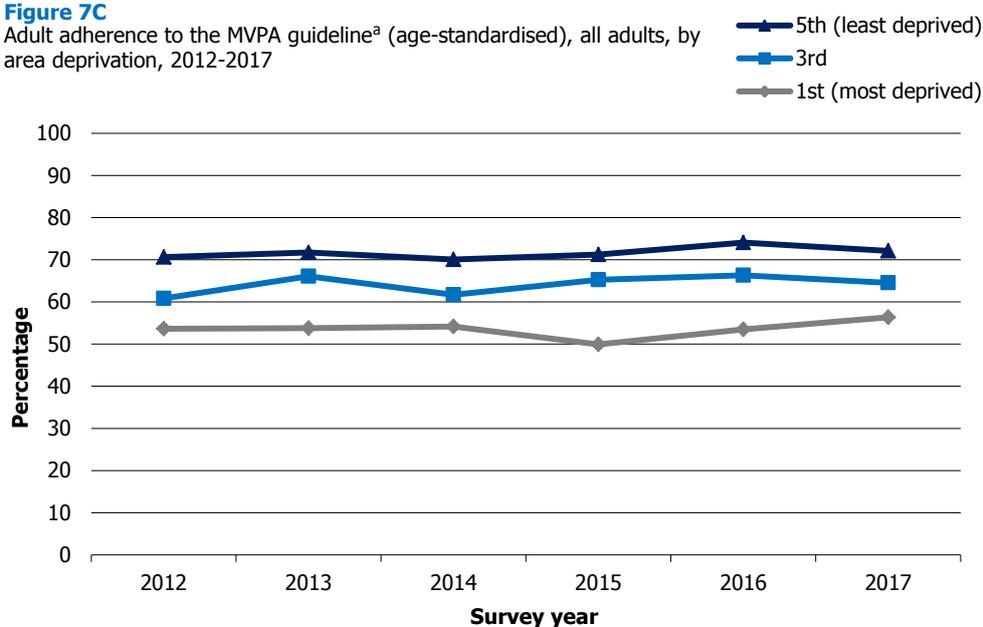### 7.3.3 Summary adult physical activity levels (age-standardised) since 2012, by area deprivation and sex

Adult physical activity levels were significantly associated with area deprivation. The age-standardised prevalence of adherence to the MVPA guidelines was highest among adults in the least deprived areas at 72%, and steadily declined with increasing deprivation to 56% among adults in the most deprived areas. As shown in Figure 7C, this pattern has been evident since 2012, with the proportion adhering to the guidelines declining as the area deprivation level increases.

The pattern is similar for both men and women. For men, the age-standardised prevalence of adherence to the MVPA guidelines declined from 77% in the least deprived areas to 63% in the most deprived areas in 2017. Among women, the age-standardised prevalence of adherence to the MVPA guidelines declined from 67% to 51%.

Similar to the pattern observed for age, the decline in adherence to the MVPA guidelines as deprivation increased largely corresponded to the increasing levels of very low activity. The percentage of those with very low activity levels increased from 14% in the least deprived areas to 29% in the most deprived areas in 2017. This pattern was evident for both sexes and has been observed every year since 2012.

Figure 7C, Table 7.3

Figure 7C
Adult adherence to the MVPA guideline[a] (age-standardised), all adults, by area deprivation, 2012-2017

[a] Meets moderate/vigorous physical activity guideline of 150 minutes of moderate, 75 minutes vigorous, or combination of both each week

7.3.4 Detailed adult physical activity levels, 2017, by domain and sex

Table 7.4 presents three different measures of participation for each of the four types of activity outside of work covered in the interview (heavy housework; heavy manual work, gardening and DIY; brisk walking; sports and exercise), as well as for participation in any type of physical activity, by age and sex. It summarises:

- the total proportion of adults participating in the activity type for at least 10 minutes at a time in the four weeks prior to the survey;
- the mean number of days in the previous four weeks on which they participated in this type of activity, and
- the mean number of hours per week they spent participating in this type of activity.
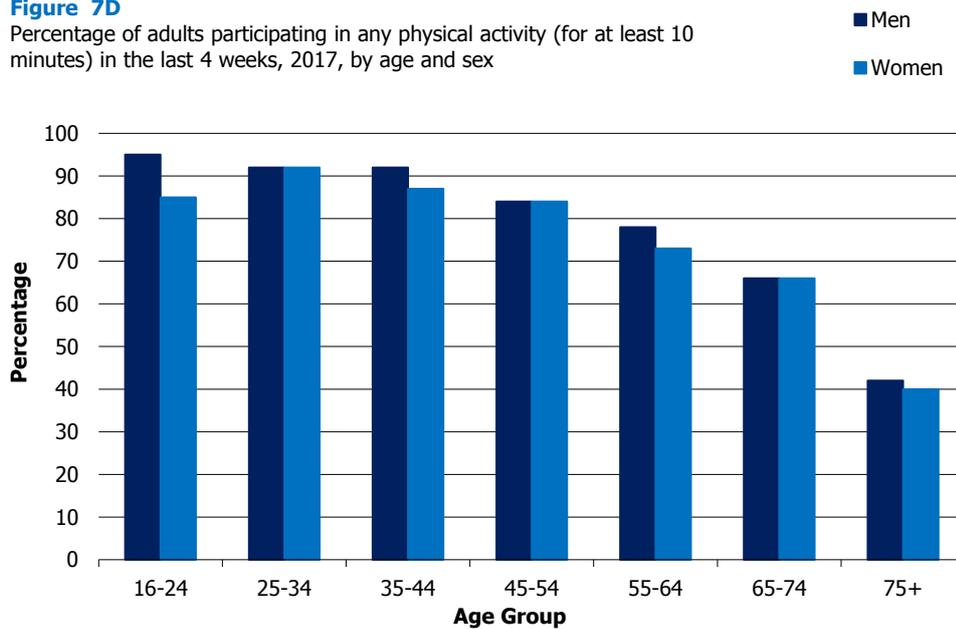
Any activity

In 2017, 79% of adults (82% of men and 77% of women) participated in at least one 10 minute session of physical activity (intensity described above) during the four weeks prior to the survey. The average number of days on which any activity was conducted during that four week period (including those who did no activity) was 13.9 (15.3 for men and 12.7 for women). Adults were active for an average of 12.4 hours per

week with men spending more time being active than women (15.1 compared with 9.9 hours).

For both men and women, levels of participation were higher among those aged 16-54 than among the older age groups. Among men participation was at its peak between the ages of 16-44 (92-95%) and then declined with each successive age category to its lowest point of 42% among those aged 75 and over. Among women the levels of participation in any activity were highest among those aged 25-34 (92%), declining with age to 40% among those aged 75 and over.

Figure 7D

Percentage of adults participating in any physical activity (for at least 10 minutes) in the last 4 weeks, 2017, by age and sex

■ Men
■ Women

A similar pattern of age and sex differences was evident for the mean number of days in the last four weeks that men and women had participated in any physical activity. The greatest differences between men and women were between the ages of 16-34; men aged 16-34 reported participating in any physical activity on an average of around 20 days of the last 28 (19.6-20.3), while women of the same age reported participating in physical activity on an average of 16 days (15.7-16.2). The mean number of days participated in physical activites were similar between men and women across the other age groups.

The average number of hours spent doing any physical activity per week was higher for men across all age groups compared with women by a factor of around 1.5 (with the exception of those aged 55-64). Men aged 16-54 averaged between 17.0 and 19.9 hours of physical activity a week, compared with between 11.3 and 12.7 hours per week for women of a similar age. Men aged 75 and above averaged 4.0 hours a week, compared with 2.4 for women of the same age.

Mean number of hours of physical activity per week, 2017, by age and sex
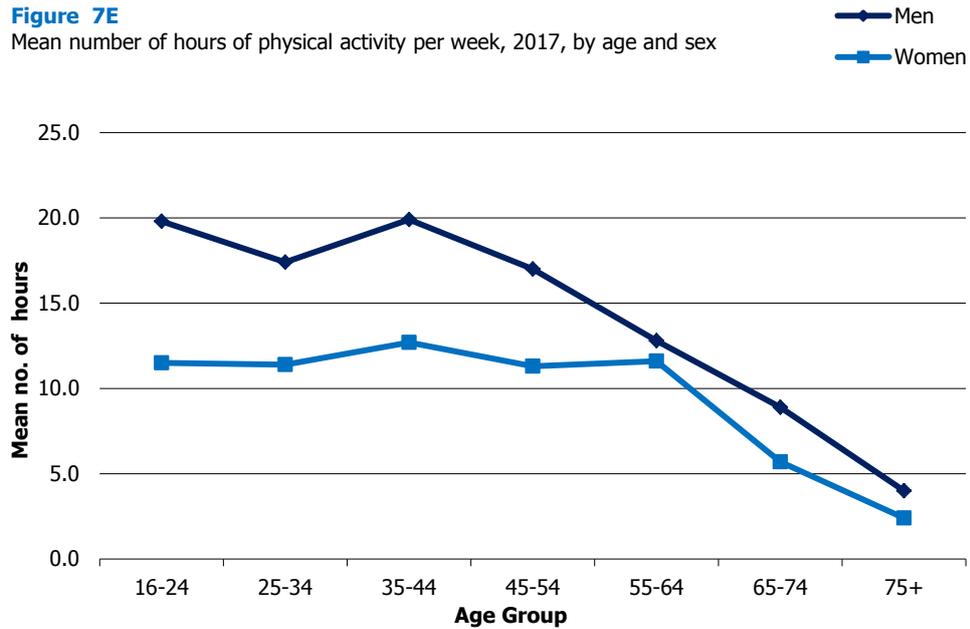
Heavy housework

Housework was the most common form of activity: 53% of all adults did at least one session of 10 or more minutes heavy housework in the preceding four weeks, compared with 44% who did at least one brisk walk of 10 minutes or more and 43% who participated in sport or exercise for 10 minutes or more. However, people spent much less time on average on housework than on these other activities. Adults, including those that did not do any housework, spent an average of one (1.0) hour a week on heavy housework, compared with three (3.0) hours walking and just under four (3.7) hours sport or exercise.

Participation in heavy housework varied significantly by age and sex. As reported in previous years, the proportion of women that participated in any heavy housework in the last four weeks was significantly higher than the proportion of men: 58% compared with 48%. A greater proportion of women performed at least some heavy housework during the four week period than did a brisk walk of at least 10 minutes or did any form of sport or exercise, and this was true for all age groups except the youngest. Among men, walking and sport or exercise were equally common as heavy housework (although partipation in sport or exercise was much more prevalent among the youngest age group and less so in the older ones).

Women spent nearly twice as much time as men doing heavy housework (an average of 1.3 hours a week, compared with 0.7 hours for men) and participated on a greater number of days (an average of 3.2 in the last four weeks compared with 2.1). In all age groups except the oldest (those aged 75 and over) women spent longer on housework on average than men.

All of the housework participation measures showed a bell-shaped pattern when compared across the age groups. For both men and women these measures peaked between the ages of 25-54 and decreased with age thereafter. Participation among these age groups was between 59% and 65%, on a mean of between 2.9 and 3.4 days during that period. The lowest level of participation was 30% among those aged 75 and over, having participated in heavy housework on a mean of 1.6 days in the last four weeks. Adults aged 35-54 spent the greatest number of hours, on average, doing heavy housework in the last four weeks (1.4) and those aged 75 and over spent the least (0.5), followed by those aged 16-24 (0.6).

Heavy manual work, gardening or DIY

Participation in heavy manual work, gardening or DIY was by far the least common actvitiy for both sexes, with only one in seven adults (14%) having done this in the previous four weeks. As in previous years, men were significantly more likely to have participated in this type of activity (21% compared with 8%). This difference was also evident in the other measures. On average, in the last four weeks men participated on 1.2 days for 0.9 hours per week. The comparative figures for women were 0.3 days and 0.2 hours.

Participation in gardening, DIY or heavy manual / building work in the last four weeks was higher for men than for women across all age groups with the largest difference among those aged 35-44: 31% of men compared with 8% of women (23 percentage points). Men aged 35-74 reported an average of between 1.1 and 1.4 hours a week of such manual work, compared with 0.5 hours or less for the younger and older age groups. The mean number of hours per week did not exceed 0.3 for women in any age group.

Walking

Less than half of all adults (44%) reported performing any brisk or fast pace walking for at least 10 minutes in the last four weeks[25]. In 2017, a significantly higher proportion of men than women did any brisk or fast paced walking in the last four weeks (48% and 41% respectively) and spent a greater number of days on average participating in such an activity (9.3 compared with 7.8). Men also spent a significantly greater number of hours walking per week on average compared with women (3.4 and 2.7).

Levels of participation in walking were highest among the youngest age group (59% having done any brisk walking in the last four weeks) declining to 34% of those aged 55-64. Among those aged 65-74, 42% did at least one walk either at a brisk pace or that exerted them, as did 27% of those aged 75 or above.

A similar pattern could be seen for the average number of days over a four week period adults participated in walking, with the highest figures for those aged 16-24 (11.5), declining to 6.9 for those aged 55-64. Those aged 65-74 walked on an average of 7.3 days out of 28,

and those aged 75 or above walked on an average of 4.6. The pattern for the number of hours spent walking was much flatter, with the average for all age groups, except the oldest, between 2.7 and 3.7 hours per week.

Sports and exercise

Less than half of adults (43%) had taken part in any sport or exercise in the previous four weeks (46% of men and 41% of women). Men had participated on more days on average in the last four weeks than women (6.9 versus 4.4 days), and for a greater number of hours per week (4.7 versus 2.8 hours).

For both sexes, all measures of participation were highest in the youngest age group. Men aged 16-24 participated in sport or exercise on an average of 11.6 days out of the previous 28, with three-quarters (75%) undertaking any such activity during the period. On average men of this age participated for 7.6 hours per week. The corresponding figures for women aged 16-24 were 7.2 days out of the previous 28, with 60% undertaking any sport or exercise, and an average of 4.7 hours per week. There was a general decline in participation with increasing age for both men and women in terms of overall levels, number of days and number of hours after the 35-44 age group.

7.4   CHILD PHYSICAL ACTIVITY LEVELS

In 2017, the survey questions on children's physical activity were changed to ask about the length of time spent on each type of physical activity on each day of the previous week. This was to enable calculation of whether children met the physical activity recommendation of a minimum of 60 minutes **on each day** of the previous week. Prior to 2017, the questions asked on how many days in the past week each type of activity was undertaken and the **average** time per day. Due to the different approach to collecting these measurements it is not possible to compare the 2017 estimates with those for previous years therefore no conclusions can be drawn about the trends or differences in physical activity prior to 2017. The physical activity recommendations are currently being reviewed across the UK. Once the results of that review are published a decision will be taken on the most appropriate way to measure children's physical activity in future surveys.

7.4.1   Proportion of children meeting daily physical activity guideline, 2017, by age and sex

Using the revised measurements of child physical activity, a third (33%) of children aged 5-15 were active at the recommended level of at least 60 minutes on every day of the week (including activity at school) in 2017. When school-based activities were excluded this figure was only slightly lower, at 32%.

Children's physical activity levels varied significantly by age, with younger children more likely than older children to meet the physical activity guideline. The proportion of children meeting the guideline was

highest for those aged 5-7 (45% including activity at school and 43% excluding it). Adherence declined steadily with increased age, to 18% for those aged 13-15 (both including and excluding school-based activity).

Excluding activity at school, a higher proportion of boys than girls met the physical activity guideline (35% of boys compared with 29% of girls). This was driven by differences among the older age groups (42% of boys and 32% of girls met the guidelines at ages 8-10; 31% of boys and 21% of girls at ages 11-12; and 22% of boys and 11% of girls at ages 13-15), though it should be noted that these figures are based on relatively small sample sizes. Once activity at school was included, overall differences between boys and girls were not statistically significant (36% of boys and 31% of girls met the guidelines), with activity at school having the greatest effect on all children aged 11-12 (raising them from 25% to 28%) and girls aged 5-7 (up from 44% to 48%). **Figures 7F and 7G, Table 7.5**

Figure 7F
Percentage of children (aged 5-15) meeting the physical activity guideline of at least 60 minutes every day of the week (excluding school activity), 2017, by age and sex
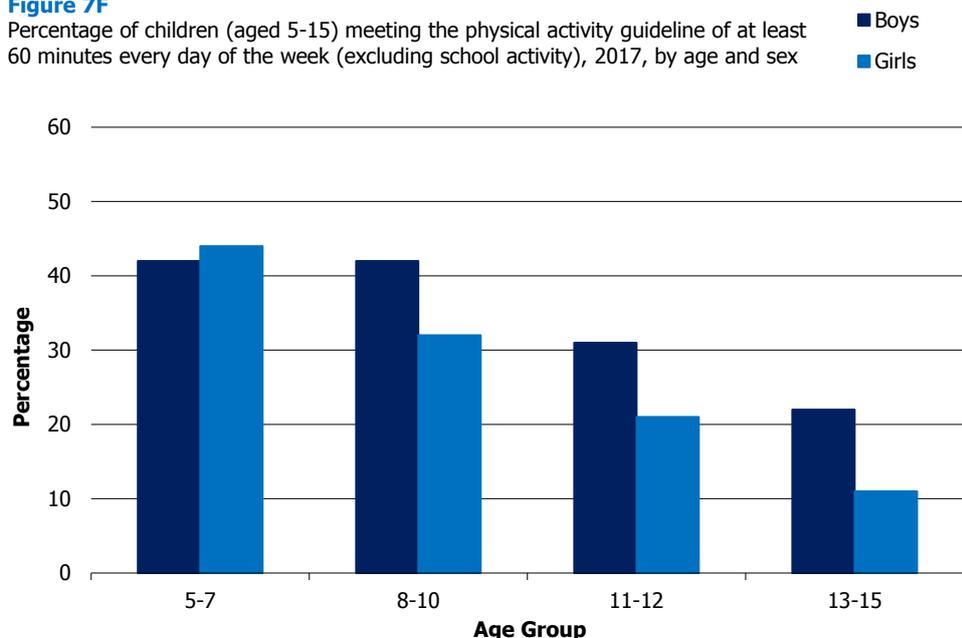
■ Boys
■ Girls

Percentage of children (aged 5-15) meeting the physical activity guideline of at least 60 minutes every day of the week (including school activity), 2017, by age and sex
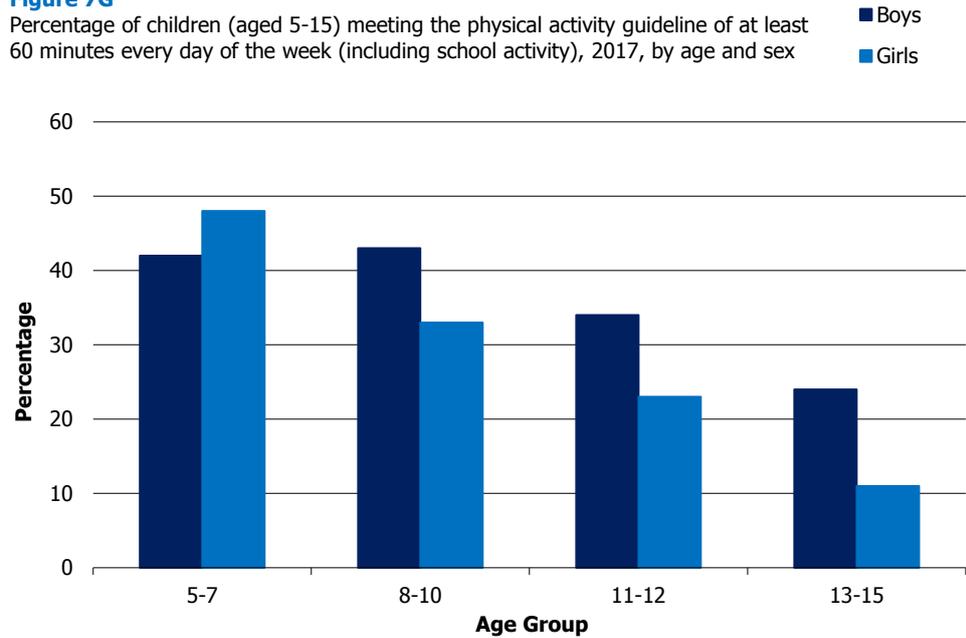
■ Boys
■ Girls

7.4.2 Proportion of children participating in sport, 2017, by age and sex

In 2017, 67% of children aged 2-15 had participated in sport in the week prior to interview. Overall sport participation rates in 2017 were similar for boys and girls (67% and 66% respectively). Rates of participation in sports both for boys and girls peaked at the age of 8-10 (76% for boys and 79% for girls) and then declined to 70% among boys and 69% among girls at the age of 11-12. The level of participation in sports among girls then declined by 24 percentage points between the age of 11-12 (69%) and 13-15 (45%) compared to only a one percentage point decline for boys (from 70% to 69%).

Figure 7H illustrates the differences in levels of sports participation between boys and girls across different age groups; differences were only significant for the 13-15 age group. **Figure 7H, Table 7.6**

Percentage of children (aged 2-15) participating in sport in the last week, 2017, by age and sex

■ Boys

■ Girls
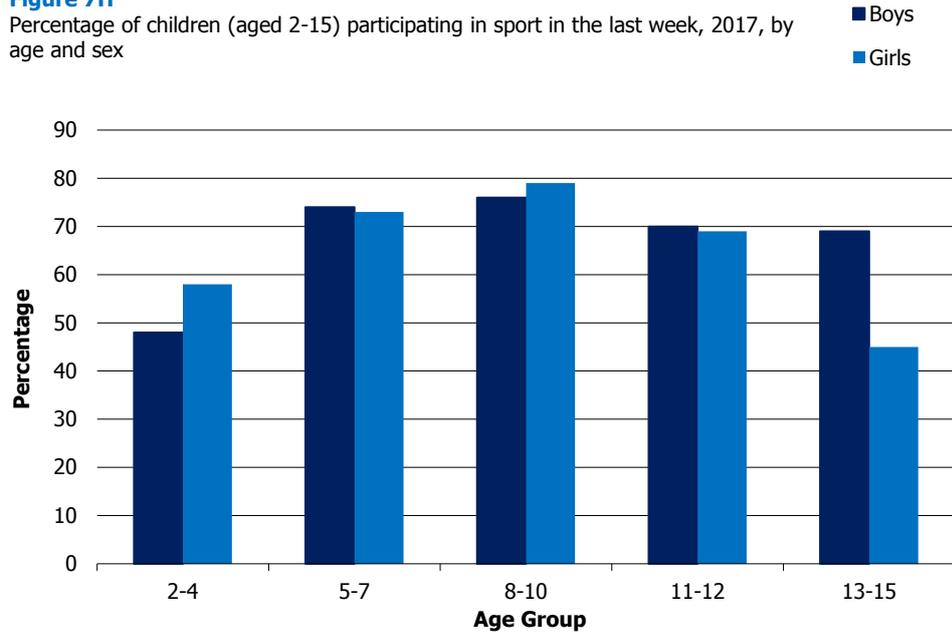
7.4.3 Proportion of children meeting physical activity guidelines and participation in sport, 2017, by area deprivation

Children's overall physical activity levels did not vary significantly by area deprivation.

There were, however, quite noticeable differences in children's level of participation in sport in the last week by area deprivation, as shown in Figure 7I. The rate of participation in sport among those aged 2-15 decreased as deprivation level increased, from 82% in the least deprived quintile to 52% in the most deprived quintile. This pattern was evident for both boys and girls although the drop in levels of participation among those in the 5th (least deprived) and the 1st (most deprived) areas was more pronounced among girls (36 percentage points) compared with boys (26 percentage points).

Figure 7I, Tables 7.7 and 7.8

Percentage of children (aged 2-15) participating in sport in the last week, 2017, by area
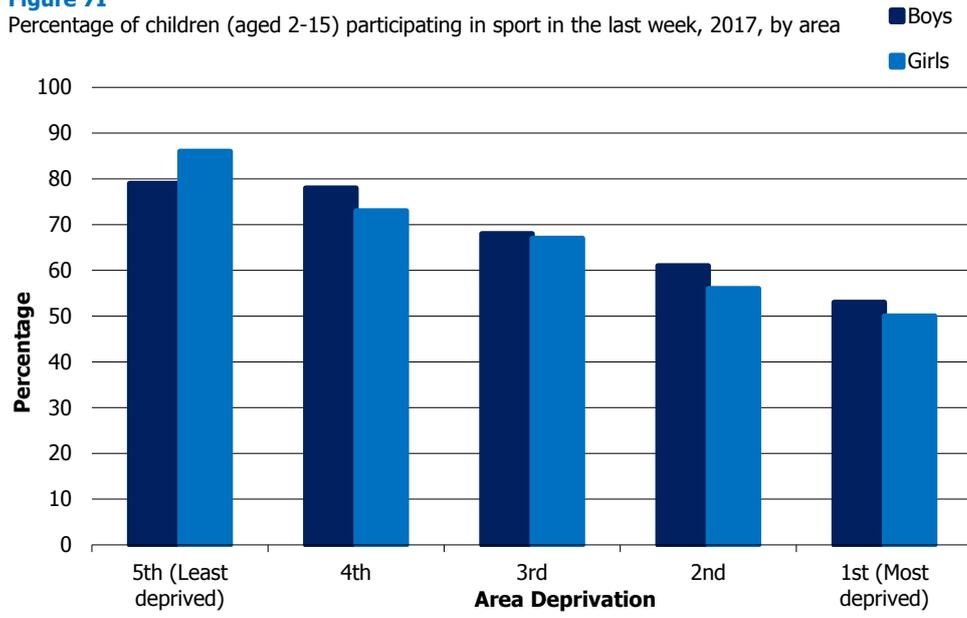
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[20]   The questions used in the survey since 1998 are based on the Allied Dunbar National Fitness Survey, a major study of physical activity among the adult population in England carried out in 1990. For further details see: Health Education Authority. Allied Dunbar National Fitness Survey. Health Education Authority and Sports Council, London. 1992

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[23]   The questions on child physical activity included in SHeS since 1998 are based on the 1997 Health Survey for England (HSE) children's physical activity module.

[24]   https://files.digital.nhs.uk/publicationimport/pub22xxx/pub22610/hse%202015-documentation.pdf
       Page 20-30.

[25]   Figures for walking are not comparable with those reported in previous years An adjustment has been made to account for the fact that slower walking can require as much exertion for older adults as brisk walking does for younger ones. For adults aged 65 or above, all walking was included in the MVPA calculations if the respondent reported that the walking exerted them.

Table list

Table 7.1 Adult summary activity levels, 2012 to 2017

Aged 16 and over   *2012 - 2017*

Summary activity levels[a]	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%
Men						
Meets MVPA guidelines	67	71	68	67	69	71
Some activity	10	8	10	9	10	9
Low activity	4	3	4	4	3	3
Very low activity	19	18	19	19	18	17
Women						
Meets MVPA guidelines	58	58	59	59	59	60
Some activity	14	14	12	14	12	12
Low activity	6	5	5	5	6	5
Very low activity	23	23	24	23	23	23
All adults						
Meets MVPA guidelines	62	64	63	63	64	65
Some activity	12	11	11	12	11	11
Low activity	5	4	4	5	5	4
Very low activity	21	21	22	21	20	20
Bases (weighted):						
Men	*2307*	*2336*	*2225*	*2383*	*2051*	*1768*
Women	*2505*	*2542*	*2411*	*2585*	*2213*	*1904*
All adults	*4811*	*4878*	*4636*	*4968*	*4264*	*3673*
Bases (unweighted):						
Men	*2122*	*2129*	*2054*	*2229*	*1874*	*1590*
Women	*2685*	*2747*	*2581*	*2733*	*2401*	*2083*
All adults	*4807*	*4876*	*4635*	*4962*	*4275*	*3673*

a Meets moderate/vigorous physical activity (MVPA) guidelines: at least 150 minutes of moderately intensive physical activity or 75 minutes vigorous activity per week or an equivalent combination of both. Some activity: 60-149 minutes of moderate activity or / 30-74 minutes of vigorous activity or an equivalent combination of these. Low activity: 30-59 minutes of moderate activity or 15-29 minutes of vigorous activity or an equivalent combination of these. Very low activity: Less than 30 minutes of moderate activity or less than 15 minutes of vigorous activity or an equivalent combination of these

Table 7.2 Adult summary activity levels, 2017, by age and sex

Aged 16 and over   *2017*

Summary activity levels[a]	Age							Total
	16-24[b]	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Meets MVPA guidelines	89	83	81	71	64	55	36	71
Some activity	4	6	7	12	10	12	12	9
Low activity	1	3	3	2	5	4	6	3
Very low activity	6	8	9	15	21	28	46	17
Women								
Meets MVPA guidelines	67	70	74	65	57	50	22	60
Some activity	13	14	8	12	10	13	18	12
Low activity	4	5	4	5	4	5	7	5
Very low activity	15	12	15	18	29	31	54	23
All adults								
Meets MVPA guidelines	78	76	77	68	60	53	28	65
Some activity	9	10	7	12	10	13	16	11
Low activity	3	4	4	4	5	5	6	4
Very low activity	11	10	12	17	25	30	50	20
Bases (weighted):								
Men	*239*	*292*	*270*	*322*	*281*	*221*	*144*	*1768*
Women	*237*	*303*	*284*	*342*	*294*	*243*	*201*	*1904*
All adults	*477*	*595*	*554*	*664*	*575*	*464*	*345*	*3673*
Bases (unweighted):								
Men	*131*	*218*	*201*	*242*	*325*	*283*	*190*	*1590*
Women	*159*	*285*	*322*	*363*	*380*	*340*	*234*	*2083*
All adults	*290*	*503*	*523*	*605*	*705*	*623*	*424*	*3673*

a Meets moderate/vigorous physical activity (MVPA) guidelines: at least 150 minutes of moderately intensive physical activity or 75 minutes vigorous activity per week or an equivalent combination of both. Some activity: 60-149 minutes of moderate activity or / 30-74 minutes of vigorous activity or an equivalent combination of these. Low activity: 30-59 minutes of moderate activity or 15-29 minutes of vigorous activity or an equivalent combination of these. Very low activity: Less than 30 minutes of moderate activity or less than 15 minutes of vigorous activity or an equivalent combination of these
b Physical activity guidelines for those aged 16-18 are at least one hour of moderate or vigorous activity each day. As SHeS participants of that age were given the adult questionnaire, which does not ask separately about each day, they have been included in this table assessed against the adult criteria

Table 7.3 Adult summary activity levels (age-standardised), 2012 to 2017, by area deprivation and sex

Aged 16 and over   *2012 - 2017*

Summary activity levels[a]	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%
Men						
Meets MVPA guidelines						
1st (most deprived)	56	59	59	52	61	63
2nd	64	67	65	64	59	68
3rd	66	74	67	70	72	68
4th	69	74	72	71	75	76
5th (least deprived)	76	76	73	76	77	77
Some activity						
1st (most deprived)	9	6	11	10	11	8
2nd	11	9	8	8	11	10
3rd	12	8	8	9	8	12
4th	8	10	11	8	10	5
5th (least deprived)	8	7	11	11	8	10
Low activity						
1st (most deprived)	3	4	2	6	4	3
2nd	2	3	4	4	3	6
3rd	4	3	5	4	3	4
4th	4	3	4	4	3	3
5th (least deprived)	5	4	4	4	4	2
Very low activity						
1st (most deprived)	33	31	28	32	25	27
2nd	23	21	24	23	27	16
3rd	18	16	20	17	16	16
4th	19	13	14	18	13	16
5th (least deprived)	10	13	11	9	11	11

Continued…

Table 7.3 - Continued

Summary activity levels[a]	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%
Women						
Meets MVPA guidelines						
1st (most deprived)	52	50	50	48	48	51
2nd	52	52	58	53	55	52
3rd	56	59	57	61	60	61
4th	60	62	62	64	64	66
5th (least deprived)	66	67	67	66	71	67
Some activity						
1st (most deprived)	12	12	10	13	11	11
2nd	15	16	12	16	13	12
3rd	16	13	13	13	14	13
4th	14	14	14	13	13	12
5th (least deprived)	11	15	11	12	10	12
Low activity						
1st (most deprived)	4	4	5	5	8	6
2nd	6	4	4	6	5	7
3rd	5	5	6	5	6	4
4th	7	5	5	3	6	3
5th (least deprived)	6	3	4	5	4	4
Very low activity						
1st (most deprived)	32	35	36	35	34	32
2nd	27	28	26	25	27	28
3rd	23	23	24	20	20	22
4th	20	19	19	19	17	18
5th (least deprived)	17	15	18	17	15	16

Table 7.3 - Continued

Summary activity levels[a]	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%
All adults						
Meets MVPA guidelines						
1st (most deprived)	54	54	54	50	53	56
2nd	58	59	61	58	57	60
3rd	61	66	62	65	66	65
4th	64	67	67	67	69	71
5th (least deprived)	71	72	70	71	74	72
Some activity						
1st (most deprived)	10	9	10	11	11	10
2nd	13	12	10	12	12	11
3rd	14	10	11	11	11	12
4th	11	12	12	10	11	9
5th (least deprived)	10	11	11	11	9	11
Low activity						
1st (most deprived)	3	4	4	5	6	4
2nd	4	4	4	5	4	7
3rd	4	4	5	5	4	4
4th	5	4	4	4	5	3
5th (least deprived)	6	4	4	4	4	3
Very low activity						
1st (most deprived)	32	33	32	33	30	29
2nd	25	25	25	24	27	22
3rd	21	20	22	19	18	20
4th	19	16	17	19	15	17
5th (least deprived)	14	14	15	13	13	14

Continued…

Table 7.3 - Continued

Summary activity levels[a]	2012	2013	2014	2015	2016	2017
Bases (weighted):						
Men						
1st (most deprived)	*388*	*383*	*411*	*440*	*413*	*292*
2nd	*472*	*472*	*428*	*481*	*373*	*368*
3rd	*479*	*491*	*423*	*438*	*442*	*357*
4th	*485*	*460*	*472*	*565*	*382*	*377*
5th (least deprived)	*482*	*530*	*492*	*458*	*440*	*375*
Women						
1st (most deprived)	*477*	*484*	*435*	*503*	*492*	*373*
2nd	*499*	*503*	*492*	*518*	*421*	*375*
3rd	*517*	*532*	*463*	*500*	*449*	*387*
4th	*484*	*523*	*532*	*588*	*379*	*368*
5th (least deprived)	*527*	*499*	*488*	*475*	*470*	*401*
All adults						
1st (most deprived)	*865*	*867*	*846*	*943*	*905*	*665*
2nd	*971*	*976*	*920*	*998*	*794*	*743*
3rd	*996*	*1023*	*886*	*938*	*892*	*744*
4th	*970*	*982*	*1004*	*1153*	*761*	*745*
5th (least deprived)	*1009*	*1030*	*979*	*933*	*910*	*775*
Bases (unweighted):						
Men						
1st (most deprived)	*301*	*327*	*336*	*385*	*294*	*236*
2nd	*386*	*444*	*394*	*440*	*318*	*311*
3rd	*499*	*509*	*477*	*474*	*427*	*360*
4th	*496*	*447*	*444*	*541*	*416*	*372*
5th (least deprived)	*440*	*402*	*403*	*389*	*419*	*311*
Women						
1st (most deprived)	*428*	*457*	*441*	*486*	*418*	*364*
2nd	*502*	*554*	*535*	*532*	*432*	*393*
3rd	*617*	*667*	*555*	*585*	*544*	*463*
4th	*592*	*601*	*570*	*657*	*499*	*454*
5th (least deprived)	*546*	*468*	*480*	*473*	*508*	*409*
All adults						
1st (most deprived)	*729*	*784*	*777*	*871*	*712*	*600*
2nd	*888*	*998*	*929*	*972*	*750*	*704*
3rd	*1116*	*1176*	*1032*	*1059*	*971*	*823*
4th	*1088*	*1048*	*1014*	*1198*	*915*	*826*
5th (least deprived)	*986*	*870*	*883*	*862*	*927*	*720*

a Meets moderate/vigorous physical activity (MVPA) guidelines: at least 150 minutes of moderately intensive physical activity or 75 minutes vigorous activity per week or an equivalent combination of both. Some activity: 60-149 minutes of moderate activity or / 30-74 minutes of vigorous activity or an equivalent combination of these. Low activity: 30-59 minutes of moderate activity or 15-29 minutes of vigorous activity or an equivalent combination of these. Very low activity: Less than 30 minutes of moderate activity or less than 15 minutes of vigorous activity or an equivalent combination of these

Table 7.4 Adult detailed activity levels, 2017, by age and sex

Aged 16 and over *2017*

Participation in different activity types[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Heavy Housework								
Any participation in last 4 weeks	38	58	61	49	47	42	30	48
Mean number of days in last 4 weeks	1.3	2.6	2.4	2.5	2.1	1.8	1.7	2.1
Standard error of the mean	0.23	0.38	0.24	0.27	0.23	0.27	0.35	0.11
Mean number of hours per week	0.4	0.7	0.8	1.0	0.8	0.7	0.6	0.7
Standard error of the mean	0.08	0.08	0.10	0.14	0.13	0.23	0.12	0.05
Heavy Manual / Gardening / DIY								
Any participation in last 4 weeks	4	16	31	26	25	24	12	21
Mean number of days in last 4 weeks	0.2	0.8	1.4	1.9	1.4	1.4	0.9	1.2
Standard error of the mean	0.12	0.22	0.30	0.36	0.24	0.24	0.27	0.11
Mean number of hours per week	0.1	0.4	1.1	1.4	1.2	1.1	0.5	0.9
Standard error of the mean	0.04	0.11	0.27	0.33	0.24	0.27	0.17	0.10
Walking (brisk/fast pace)[b]								
Any participation in last 4 weeks	66	53	54	46	36	43	30	48
Mean number of days in last 4 weeks	13.2	10.6	10.6	9.3	7.2	7.3	5.4	9.3
Standard error of the mean	1.23	0.89	0.95	0.85	0.68	0.67	0.79	0.37
Mean number of hours per week	3.9	3.1	4.6	3.8	2.8	3.0	1.5	3.4
Standard error of the mean	0.59	0.43	0.73	0.71	0.44	0.43	0.28	0.24

Continued…

Table 7.4 - Continued

Participation in different activity types[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Sports & exercise								
Any participation in last 4 weeks	75	61	57	45	32	24	12	46
Mean number of days in last 4 weeks	11.6	9.9	9.3	6.4	4.2	2.9	0.9	6.9
Standard error of the mean	1.57	1.15	1.22	0.83	0.55	0.43	0.24	0.41
Mean number of hours per week	7.6	5.4	5.5	4.9	3.6	3.1	1.4	4.7
Standard error of the mean	0.83	0.62	0.66	0.61	0.35	0.36	0.25	0.24
Any physical activities[c]								
Any participation in last 4 weeks	95	92	92	84	78	66	42	82
Mean number of days in last 4 weeks	20.3	19.6	18.6	16.0	13.2	8.8	4.6	15.3
Standard error of the mean	0.94	0.78	0.83	0.84	0.68	0.68	0.64	0.37
Mean number of hours per week	19.8	17.4	19.9	17.0	12.8	8.9	4.0	15.1
Standard error of the mean	1.99	1.21	1.72	1.60	1.02	0.92	0.53	0.61
Women								
Heavy Housework								
Any participation in last 4 weeks	47	71	68	68	56	53	31	58
Mean number of days in last 4 weeks	2.4	3.2	4.0	4.2	3.2	2.8	1.6	3.2
Standard error of the mean	0.38	0.25	0.30	0.34	0.32	0.30	0.25	0.12
Mean number of hours per week	0.8	1.3	1.9	1.8	1.5	1.2	0.4	1.3
Standard error of the mean	0.16	0.13	0.24	0.20	0.19	0.15	0.09	0.07

Table 7.4 - Continued

Participation in different activity types[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Heavy Manual / Gardening / DIY								
Any participation in last 4 weeks	3	6	8	12	12	11	4	8
Mean number of days in last 4 weeks	0.2	0.2	0.4	0.4	0.4	0.5	0.3	0.3
Standard error of the mean	0.17	0.06	0.10	0.07	0.08	0.12	0.13	0.04
Mean number of hours per week	0.1	0.1	0.3	0.3	0.3	0.2	0.2	0.2
Standard error of the mean	0.05	0.02	0.11	0.06	0.07	0.05	0.09	0.03
Walking (brisk/fast pace)[b]								
Any participation in last 4 weeks	51	45	45	41	32	42	26	41
Mean number of days in last 4 weeks	9.7	9.3	8.7	8.1	6.5	7.3	4.1	7.8
Standard error of the mean	1.00	0.82	0.70	0.60	0.64	0.66	0.58	0.30
Mean number of hours per week	2.5	3.1	2.9	2.6	3.2	2.3	1.6	2.7
Standard error of the mean	0.45	0.40	0.30	0.27	0.51	0.32	0.58	0.16
Sports & exercise								
Any participation in last 4 weeks	60	52	55	40	33	25	12	41
Mean number of days in last 4 weeks	7.2	5.9	7.0	4.0	3.0	2.0	0.7	4.4
Standard error of the mean	0.89	0.63	0.69	0.47	0.36	0.29	0.16	0.22
Mean number of hours per week	4.7	2.9	3.8	2.8	2.7	1.4	0.5	2.8
Standard error of the mean	0.65	0.31	0.34	0.35	0.43	0.19	0.10	0.15

Table 7.4 - Continued

Participation in different activity types[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Any physical activities[c]								
Any participation in last 4 weeks	85	92	87	84	73	66	40	77
Mean number of days in last 4 weeks	16.2	15.7	15.7	14.2	11.9	8.0	3.7	12.7
Standard error of the mean	0.95	0.72	0.67	0.63	0.70	0.60	0.56	0.29
Mean number of hours per week	11.5	11.4	12.7	11.3	11.6	5.7	2.4	9.9
Standard error of the mean	1.10	0.82	0.83	0.88	1.01	0.50	0.37	0.34
All adults								
Heavy Housework								
Any participation in last 4 weeks	42	64	65	59	52	48	30	53
Mean number of days in last 4 weeks	1.8	2.9	3.2	3.4	2.7	2.3	1.6	2.7
Standard error of the mean	0.22	0.24	0.22	0.22	0.22	0.21	0.23	0.09
Mean number of hours per week	0.6	1.0	1.4	1.4	1.1	0.9	0.5	1.0
Standard error of the mean	0.09	0.09	0.13	0.13	0.13	0.14	0.08	0.05
Heavy Manual / Gardening / DIY								
Any participation in last 4 weeks	4	11	19	19	18	17	8	14
Mean number of days in last 4 weeks	0.2	0.5	0.9	1.1	0.9	0.9	0.5	0.8
Standard error of the mean	0.10	0.12	0.15	0.18	0.13	0.14	0.16	0.06
Mean number of hours per week	0.1	0.2	0.7	0.8	0.7	0.6	0.3	0.5
Standard error of the mean	0.03	0.05	0.14	0.16	0.12	0.13	0.11	0.05

Continued…

Table 7.4 - *Continued*

Participation in different activity types[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Walking (brisk/fast pace)[b]								
Any participation in last 4 weeks	59	49	49	44	34	42	27	44
Mean number of days in last 4 weeks	11.5	10.0	9.6	8.7	6.9	7.3	4.6	8.6
Standard error of the mean	0.82	0.63	0.60	0.51	0.50	0.52	0.50	0.26
Mean number of hours per week	3.2	3.1	3.7	3.2	3.0	2.7	1.6	3.0
Standard error of the mean	0.37	0.33	0.41	0.39	0.37	0.29	0.36	0.16
Sports & exercise								
Any participation in last 4 weeks	68	57	56	42	33	24	12	43
Mean number of days in last 4 weeks	9.4	7.8	8.1	5.1	3.6	2.4	0.8	5.6
Standard error of the mean	0.97	0.68	0.69	0.49	0.34	0.28	0.14	0.24
Mean number of hours per week	6.2	4.1	4.6	3.8	3.2	2.2	0.9	3.7
Standard error of the mean	0.53	0.36	0.39	0.37	0.28	0.20	0.12	0.16
Any physical activities[c]								
Any participation in last 4 weeks	90	92	90	84	75	66	41	79
Mean number of days in last 4 weeks	18.3	17.6	17.1	15.1	12.5	8.4	4.0	13.9
Standard error of the mean	0.75	0.56	0.55	0.51	0.54	0.50	0.42	0.27
Mean number of hours per week	15.7	14.3	16.2	14.1	12.2	7.2	3.0	12.4
Standard error of the mean	1.27	0.79	0.96	0.92	0.77	0.54	0.35	0.38

Continued…

Table 7.4 - *Continued*

Participation in different activity types[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	*242*	*294*	*270*	*323*	*282*	*221*	*144*	*1776*
Women	*237*	*306*	*285*	*345*	*297*	*244*	*203*	*1917*
All adults	*480*	*600*	*554*	*669*	*579*	*465*	*346*	*3693*
Bases (unweighted):								
Men	*133*	*219*	*201*	*244*	*327*	*283*	*190*	*1597*
Women	*159*	*287*	*324*	*365*	*383*	*342*	*236*	*2096*
All adults	*292*	*506*	*525*	*609*	*710*	*625*	*426*	*3693*

a In sessions of at least 10 minutes

b Walking at a "brisk pace" includes those aged 65 and above who reported walking slowly or at a steady pace, but who said that they exert themselves when walking

c Includes physical activity at work as well as the above four categories

Table 7.5 Proportion of children meeting physical activity guideline over course of week (including and excluding activity at school), 2017, by age and sex

Proportion meeting guideline[a,b,c]	Age				Total
	5-7	8-10	11-12	13-15	
	%	%	%	%	%
Boys					
Excluding activity at school	42	42	31	22	35
Including activity at school	42	43	34	24	36
Girls					
Excluding activity at school	44	32	21	11	29
Including activity at school	48	33	23	11	31
All children					
Excluding activity at school	43	37	25	18	32
Including activity at school	45	38	28	18	33
Bases (weighted):					
Boys	*163*	*148*	*90*	*158*	*558*
Girls	*170*	*138*	*112*	*110*	*530*
All children	*333*	*286*	*202*	*268*	*1088*
Bases (unweighted):					
Boys	*175*	*151*	*85*	*139*	*550*
Girls	*156*	*122*	*104*	*100*	*482*
All children	*331*	*273*	*189*	*239*	*1032*

a At least 60 minutes of activity on all 7 days in previous week

b Children aged 2-3 were not asked about school activities, children aged 4 were included if they had started school

Table 7.6 Proportion of children participating in sport, 2017, by age and sex

Aged 2-15   *2017*

Participation in any sport during last week	Age					Total
	2-4	5-7	8-10	11-12	13-15	
	%	%	%	%	%	%
Boys						
Any sport in last week	48	74	76	70	69	67
Girls						
Any sport in last week	58	73	79	69	45	66
All children						
Any sport in last week	53	74	77	70	59	67
Bases (weighted):						
Boys	*154*	*163*	*150*	*90*	*159*	*716*
Girls	*153*	*174*	*140*	*114*	*111*	*692*
All children	*308*	*337*	*290*	*204*	*270*	*1408*
Bases (unweighted):						
Boys	*155*	*175*	*152*	*85*	*140*	*707*
Girls	*183*	*159*	*124*	*106*	*101*	*673*
All children	*338*	*334*	*276*	*191*	*241*	*1380*

Table 7.7 Proportion of children meeting physical activity guidelines (including and excluding activity at school), 2017, by area deprivation and sex

Aged 5 - 15   *2017*

Proportion meeting guideline[a,b]	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Boys					
Meets guidelines excluding activity at school[a]	38	40	33	30	31
Meets guidelines including activity at school[a,b]	39	43	36	29	31
Girls					
Meets guidelines excluding activity at school[a]	30	28	34	26	27
Meets guidelines including activity at school[a,b]	35	31	35	28	27
All children					
Meets guidelines excluding activity at school[a]	35	34	34	28	29
Meets guidelines including activity at school[a,b]	37	37	35	29	29
Bases (weighted):					
Boys	*121*	*103*	*120*	*97*	*118*
Girls	*96*	*111*	*104*	*113*	*105*
All children	*218*	*214*	*224*	*210*	*222*
Bases (unweighted):					
Boys	*115*	*112*	*120*	*97*	*106*
Girls	*88*	*111*	*101*	*100*	*82*
All children	*203*	*223*	*221*	*197*	*188*

a At least 60 minutes of activity on all 7 days in previous week

b Children aged 2-3 were not asked about school activities, children aged 4 were included if they had started school

Table 7.8 Proportion of children participating in sport, 2017, by area deprivation and sex

Aged 2 - 15   *2017*

| Participation in any sport during last week	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Boys					
Participates in sport	79	78	68	61	53
Girls					
Participates in sport	86	73	67	56	50
All children					
Participates in sport	82	75	67	59	52
Bases (weighted):					
Boys	*147*	*128*	*150*	*137*	*153*
Girls	*121*	*139*	*139*	*162*	*132*
All children	*268*	*267*	*289*	*299*	*285*
Bases (unweighted):					
Boys	*141*	*139*	*154*	*135*	*138*
Girls	*116*	*147*	*141*	*157*	*112*
All children	*257*	*286*	*295*	*292*	*250*

Chapter 8

Obesity

SUMMARY

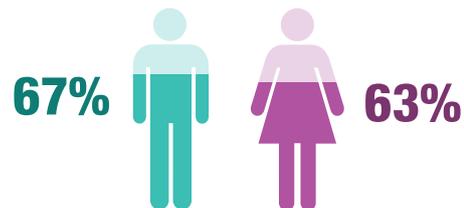**In 2017** two thirds (65%) of adults were overweight, including

29% who were obese

- Around two thirds (65%) of adults were overweight or obese (BMI of 25 kg/m² or greater). This has remained stable since 2008 (fluctuating between 64% and 65%).
- Levels of obesity, including morbid obesity (BMI of 30 kg/m² or greater), among all adults remained at 29%, unchanged since 2015. This is significantly higher than in 2003 (24%).
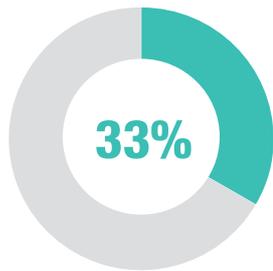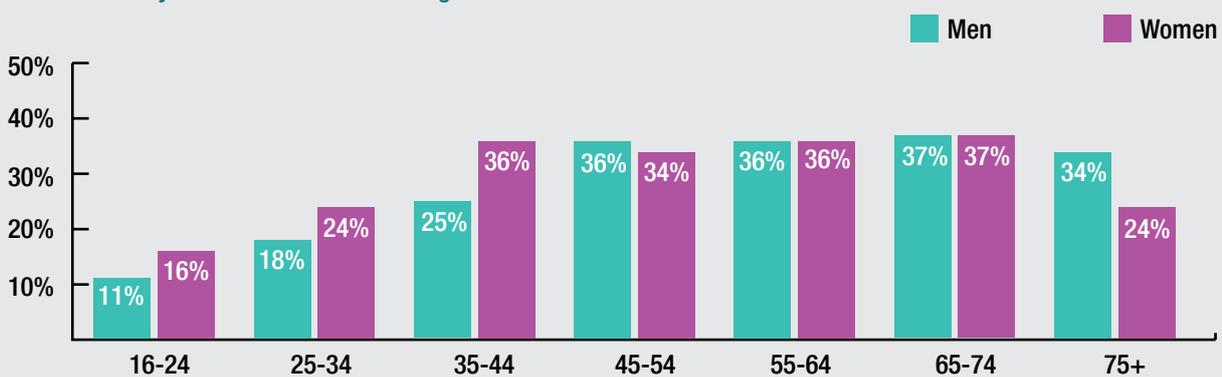
33% of adults were a healthy weight (a BMI of between 18.5 and 25)

**A greater proportion of men were overweight or obese than women**

67% **63%**

Levels of obesity tended to increase with age

Legend: ■ Men ■ Women

| Age	Men	Women
16-24	11%	16%
25-34	18%	24%
35-44	25%	36%
45-54	36%	34%
55-64	36%	36%
65-74	37%	37%
75+	34%	24%

- In 2016/2017, the proportion of men and women with a raised waist circumference (men: larger than 102 cm, women: larger than 88cm) had increased since 2003. For women the increase was more profound, from 39% in 2003 to 54% in 2016/2017 (an increase of 16 percentage points), whereas for men the increase was from 28% in 2003 to 38% in 2016/2017 (an increase of 10 percentage points).
- Health risk based on BMI and waist circumference increased with age for both men and women.

Increased health risk based on BMI and waist circumference

Women	69%
Men	58%

Categorised as 'high risk' or above

Women	57%
Men	42%
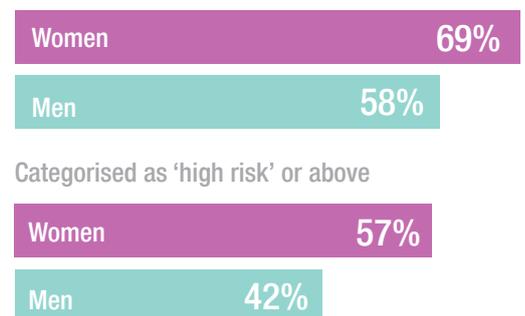
- Prevalence of children at risk of obesity in 2017 was 13%, with levels showing a steady decline since 2014 (16-17% between 2003 and 2014), this is largely due to the decline in prevalence among boys from 20% in 2012 to 12% in 2017.
- In 2017, the proportion of children of a healthy weight decreased with age; with children aged 2-6 being the most likely to fall within the healthy weight range (78%), compared with 66% of children aged 12-15.

72% of children (aged 2-15) were of healthy weight
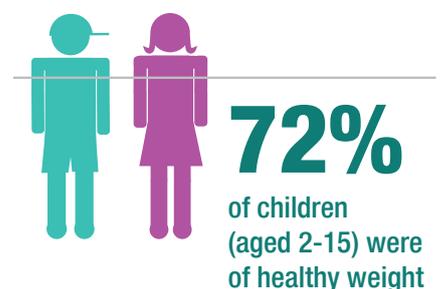
8 OBESITY

Diana Bardsley

8.1 INTRODUCTION

Worldwide obesity has nearly tripled since 1975. In 2016, 39% of adults aged 18 and over across the world were overweight, with 13% considered obese. Once considered a high-income country problem, overweight and obesity are now also on the rise in low and middle-income countries. Globally, there are more people who are obese than are underweight, and the majority of the world's population live in countries where overweight and obesity kills more people than underweight[1].

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health[1,2]. Raised BMI is a major risk factor for non-communicable diseases such as cardiovascular disease, diabetes, musculoskeletal disorders and a range of cancers[1]. Obesity has been found to be the second biggest preventable cause of cancer[3]. There is also evidence suggesting a link between overweight and obesity in midlife and dementia in late life[4,5,6].

The impact of overweight and obesity upon quality of life and health is felt across the life course. Childhood obesity is associated with a higher chance of adult obesity as well as premature death, disability, diabetes, cardiovascular disease, osteoarthritis and some cancers[1,7,8,9.] In addition to increased future risks, obese children can experience an increased risk of fractures, hypertension, type 2 diabetes, asthma as well as negative psychological effects during the childhood years[1,10,11].

Scotland has one of the worst obesity records among OECD countries. Various studies have attempted to estimate the costs to the NHS in Scotland of overweight and obesity combined, with suggested figures ranging between £363 and £600 million (the majority of these costs are incurred as a result of associated conditions such as cardiovascular disease and Type 2 diabetes, rather than direct costs of treating or managing overweight and obesity)[12]. The latest estimate of the total (direct and indirect) costs of overweight and obesity to Scottish society, including labour market related costs such as lost productivity, have been put at £0.9-4.6 billion[12].

Due to the considerable individual, social, and economic consequences of obesity, it remains a key priority and a major challenge for both government and public health professionals.

8.1.1 Policy background

In July this year, the Scottish Government published **A Healthier Future – Scotland's Diet and Healthy Weight Delivery Plan**[13]. The overall aims of the plan are to create a Scotland 'where everyone eats well and has a healthy weight'. There is a significant emphasis on the early years with an ambition to halve childhood obesity by 2030. There is also an aim to significantly reduce health inequalities through both

population measures as well as a number of targeted approaches for the most at risk families and individuals. There is recognition that overweight and obesity is a complex issue and is associated with a number of other health behaviours such as physical activity, diet and smoking. As part of a joined up approach to public health it is stated that this plan should be considered alongside **A More Active Scotland: Scotland's Physical Activity Delivery Plan**[14] and other strategies focussing on Alcohol Prevention, Substance Use and Tobacco Control.

Specifically there are five key outcomes in the diet and healthy weight plan:

- Children have the best start in life – they eat well and have a healthy weight
- The food environment supports healthier choices
- People have access to effective weight management services
- Leaders across all sectors promote healthy weight and diet
- Diet-related health inequalities are reduced

Reducing overweight and obesity prevalence also contributes to the new NPF outcome that 'we are healthy and active'[15]. There is a related indicator to monitor the proportion of healthy weight adults of which SHeS is the official source used to monitor progress.

The recently published **Programme for Government 2017-18** also sets out the Scottish Government's intention to progress measures limiting the marketing of products high in fat, sugar and salt[16].

8.1.2 Reporting on obesity in the Scottish Health Survey (SHeS)

The anthropometric measures presented in this chapter focus on measurements relevant to adult and child obesity. Height, weight and waist measurements have been collected during the survey interview every year since its inception in 1995. SHeS is one of a small number of surveys that collects height, weight and waist measures rather than using self-reported measures, which are known to be less accurate[17,18]. Height and weight are used to calculate Body Mass Index (BMI), the primary measure of obesity used in the SHeS series. Adults' and children's trends in BMI are examined in this chapter, as are trends in adult waist circumference and health risks categories associated with BMI and waist measurements.

Supplementary tables are available on the Scottish Government SHeS website[19].

8.1.3 Comparability with other UK statistics

Adult obesity is defined consistently in the Scottish Health Survey and the other health surveys within the UK using BMI classifications. Height and weight measurements are self-reported in the National Survey for Wales and are therefore not directly comparable with equivalent

statistics in Scotland, England and Northern Ireland, where direct measurements are taken. Sampling methodologies differ between the surveys. Of the four UK health surveys, the Scottish Health Survey and Health Survey for England are the most closely aligned.

8.2 METHODS AND DEFINITIONS

8.2.1 Methods

Height

Height was measured using a portable stadiometer with a sliding head plate, base plate and four connecting rods marked with a metric measuring scale. Participants were asked to remove shoes. One measurement was taken, with the participant stretching to the maximum height and the head positioned in the Frankfort plane[20]. If the reading was between two millimetres it was recorded to the nearest even millimetre. No measurement was taken from participants who were pregnant, aged under 2, or unsteady on their feet.

Weight

Weight was measured using either Seca or Tanita electronic scales, both of which use a digital display. Participants were asked to remove shoes and any bulky clothing. A single measurement was recorded to the nearest 100g. A weight measurement was not collected from participants who were pregnant, aged under 2 years, or unsteady on their feet. Due to the scale limits, when using a Tanita scale those who weighed more than 130 kg were asked for an estimate of their weight, with estimates required for those weighing more than 200 kg if Seca scales were being used. These estimated weights were included in the analysis presented in this chapter.

In the analysis of height and weight, data from those who were considered by the interviewer to have unreliable measurements, for example those who had excessive clothing on, were excluded.

Waist

Since 2012, specially trained interviewers have taken waist measurements from respondents. These interviewers followed a different protocol for taking the measurements than the nurses who previously took the measurements (see below for details). Results in this chapter are calibrated to allow the comparison of interviewer measurements with those previously taken by nurses.

Waist circumference is now defined as around the navel or tummy button. Waist was measured using a tape with an insertion buckle at one end. Interviewers took each measurement twice, using the same tape, and recorded readings. If the reading fell between two millimetres the reading was taken to the nearest even millimetre. Those participants whose two waist measurements differed by more than 3 cm

had a third measurement taken. The mean of the two valid measurements (the two out of the three measurements that were the closest to each other, if there were three measurements) was used in the analysis presented in this chapter. Participants were excluded if they reported that they were pregnant, had a colostomy or ileostomy, or were unable to stand. All those with measurements considered unreliable by the interviewer, for example due to excessive clothing or movement, were excluded from the analysis presented in this chapter.

8.2.2   Definitions

Body Mass Index (BMI)

Body Mass Index (BMI) is a widely accepted measure that allows for differences in weight due to height. It is defined as weight (kg)/square of height (m^2). This has been used as a measure of obesity in SHeS since its inception in 1995. BMI was calculated from valid measures collected by the interviewer.

Adult BMI classification

Based on their BMI, adult participants were classified into the following groups based on the World Health Organisation (WHO) classification[21]:

BMI (kg/m^2)	Description
Less than 18.5	Underweight
18.5 to less than 25	Normal
25 to less than 30	Overweight, excluding obese
30 to less than 40	Obese, excluding morbidly obese
40+	Morbidly obese

In this chapter, both mean BMI and prevalence for the five categories outlined in the table above are presented for adults. Although obesity has the greatest ill-health and mortality consequences, overweight is also a major public health concern, not least because overweight people are at high risk of becoming obese. Being underweight can also have negative health consequences.

Child BMI classification

BMI is defined for children in the same way as it is for adults: weight (kg)/square of height (m^2). The International Obesity Task Force concluded that BMI is a reasonable measure of adiposity in children[22] and it is the key measure of overweight and obesity for children used in the SHeS series.

Despite the relatively wide acceptance of the use of BMI as an adiposity indicator, the establishment of an agreed specific obesity and overweight classification system for children and young people remains challenging. Constant changes in body composition during growth mean that the relationship between weight-for-height and adiposity during childhood and adolescence is age-dependent, and this relationship is further complicated by both ethnicity and gender[23].

The classification of children's BMI used in this chapter, set out below, has been derived from BMI percentiles of the UK 1990 reference curves[24,25] (referred to as the national BMI percentiles classification); these have been used in each SHeS to date. The national BMI percentiles classification has been shown to be reasonably sensitive (i.e. not classifying obese children as non-obese) and specific (i.e. not classifying non-obese children as obese)[26,27]. SIGN recommends that these reference curves and thresholds should be used for population surveillance in Scotland[Error! Bookmark not defined.]. The 85th / 95th percentile cut-off points are commonly accepted thresholds used to analyse overweight and obesity in children. These thresholds have previously been used to describe childhood overweight and obesity prevalence trends in the UK[28,29,30,31].

Percentile cut-off	Description
At or below 2nd percentile	At risk of underweight
Above 2nd percentile and below 85th percentile	Healthy weight
At or above 85th percentile and below 95th percentile	At risk of overweight
At or above 95th percentile	At risk of obesity

SHeS uses a method developed by ISD Scotland to plot the exact ages of the children in the sample against the reference population data[32]. While children's exact age was used to calculate the BMI grouping prevalence rates (based on the interview date and the date of birth), results are presented using grouped ages based on age at last birthday.

As noted in the introduction to this chapter, one of the Scottish Government's national indicators relates to healthy weight in both children and adults, defined as neither underweight nor overweight or obese[33]. The presented data for children have been categorised to show the total proportions that are: healthy weight, at risk of overweight, at risk of obesity, and at risk of underweight.

Raised waist circumference (WC)

BMI has some limitations and does not, for example, distinguish between mass due to body fat and mass due to muscular physique[34]. Nor does it take account of the distribution of fat in the body. It has therefore been suggested that waist circumference (WC) may be a better means of identifying those with a health risk than BMI[35,36,37]. In accordance with the definition of abdominal obesity used by the National Institutes of Health (USA) ATP (Adult Treatment Panel) III, a raised WC is defined as more than 102 cm for men and more than 88 cm for women[38]. Following the protocol introduced to SHeS in 2012, described in Section 8.2.1, the equivalent cut-offs on SHeS are 102.75cm for men and 91.35cm for women[39].

These thresholds help identify people at risk of metabolic syndrome. Abdominal obesity is reported as more highly correlated with metabolic risk factors (high levels of triglycerides, low HDL-cholesterol) than

elevated BMI. It has recently been shown that these levels correspond fairly closely to the 95th percentile of waist circumference for healthy people, indicating that few healthy people have a waist circumference above these thresholds[40].

Combined assessment of health risk from obesity

The SIGN guideline on obesity cites the WHO's recommendation that an individual's risk of conditions such as type 2 diabetes and CVD is better estimated using a combination of both BMI and waist circumference (WC) than using either measure on their own[41].

The classification categories suggested by SIGN[42] are set out in the following table. BMI, derived from height and weight data collected in the main interview, in combination with waist measurements collected in the biological module have been used to estimate the proportion of adults who fall into each of the risk categories. This combined classification designates those with a raised WC as 'very high' WC, while those towards the upper end of the 'not raised' WC range are designated 'high' WC. As the table indicates, the health risk is similar for adults with very high WC and class I obesity and for adults with high WC and class II obesity. The SIGN guidance notes that increased WC can be a marker for disease even among people of normal weight. The analysis presented in this chapter classifies people with normal weight and a very high WC as at increased risk of disease.

Assessment of health risk from obesity

BMI Classification	'High' WC Men WC 94-102cm Women WC 80-88cm	'Very high' WC Men WC >102cm Women WC >88cm
Normal weight (BMI 18.5 - <25(kg/m^2))	-	-
Overweight (BMI 25 - <30(kg/m^2))	Increased	High
Obese		
I - Mild (BMI 30 - <35(kg/m^2))	High	Very high
II - Moderate (BMI 35 - <40(kg/m^2))	Very high	Very high
III - Extreme (BMI 40+(kg/m^2))	Extremely high	Extremely high

Source: based on Table 3, P11, in SIGN 115[43].

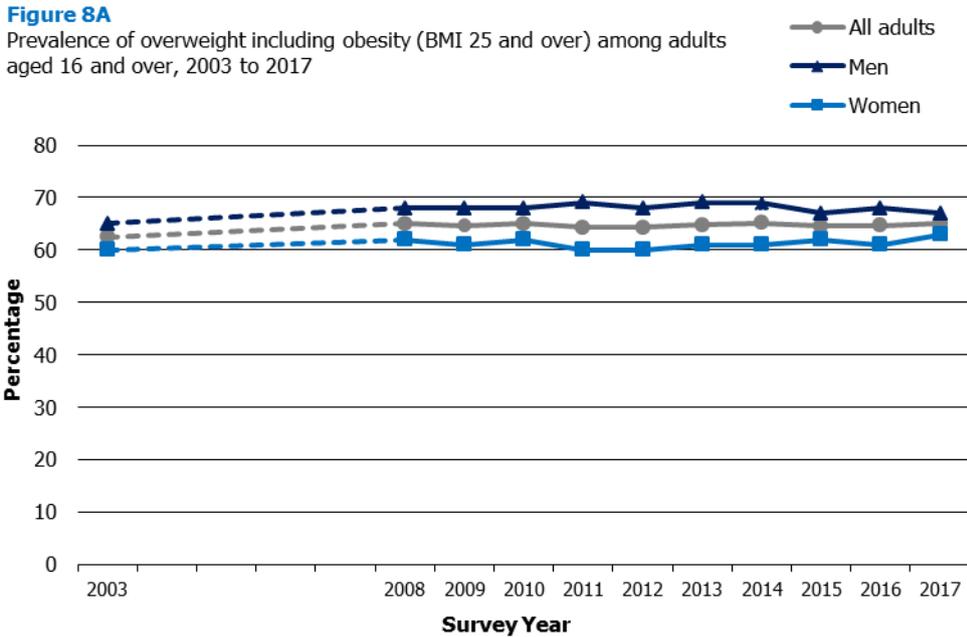## 8.3 ADULT OVERWEIGHT AND OBESITY PREVALENCE

8.3.1 Trends in overweight including obesity prevalence since 2003

Adult overweight, including obesity (BMI of 25 kg/m² or greater) prevalence remained at 65% in 2017. As shown in figure 8A, the longer trend for overweight including obesity showed a significant increase between 2003 and 2008, when prevalence increased from 62% to 65%. Since 2008, prevalence has stabilised, fluctuating between 64% and 65%.

The trend pattern in overweight, including obesity for men was similar to that of all adults. As shown in Figure 8A, prevalence of overweight, including obesity rose amongst men between 2003 and 2008 (from 65% to 68%), and has remained steady since, with 67% of men in 2017 overweight including obese.

Prevalence of overweight, including obesity among women was consistently lower over the time period than among men, ranging from 60% to 63% with no clear pattern of increase or decline.

Figure 8A, Table 8.1

Figure 8A
Prevalence of overweight including obesity (BMI 25 and over) among adults aged 16 and over, 2003 to 2017

Legend: All adults, Men, Women

8.3.2 Trends in obesity prevalence since 2003

Prevalence of obesity, including morbid obesity (BMI of 30 kg/m² or greater), among all adults remained at 29% in 2017, unchanged since 2015, although significantly higher than in 2003 (24%). A similar pattern was found for men and women.

There has been little difference in the prevalence of obesity, including morbid obesity, between men and women in Scotland, since 2003.

Table 8.1

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8.3.3 Trends in mean adult BMI since 2003

Mean BMI has shown a general slight upward trend since 2003, and was highest since the start of the time series in both 2016 and 2017 (increasing from 27.1kg/m² in 2003 to 27.7kg/m² in 2016 and 2017). The trend in mean BMI for women was largely in line with that of all adults, for men mean BMI increased up to 2009 but has changed little since.   **Table 8.1**

8.3.4 Adult BMI in 2017, by age and sex

In 2017, 33% of adults were in the healthy weight category. Women were significantly more likely than men to be in the healthy weight range (35% of women compared with 31% of men). This difference was largely due to the significant difference in the overweight category (BMI of 25 kg/m² to less than 30 kg/m²) of 7 percentage points between men 40%) and women (33%) whilst there was no significant difference between men and women in the obese category of BMI of 30 kg/m² or more (27% and 30% respectively).

In 2017, as in previous years, overweight and obesity prevalence and mean BMI varied significantly with age. Overweight including obesity prevalence (BMI of 25 kg/m² or over) increased with age (from 36% of those aged 16-24 to 78% of those aged 65-74) before dropping among those aged 75 and over (68%). A similar pattern was observed for prevalence of obesity including morbid obesity (BMI of 30 kg/m² or over) which increased from 14% among those aged 16-24 to 37% among those aged 65-74 before declining to 28% of those aged 75 and over.

The association between overweight including obesity (BMI of 25 kg/m² and over) and age followed a similar pattern to that of all adults for both men and women (Figures 8B and 8C).

However the patterns in obesity (BMI of 30 kg/m² or more) by age were significantly different for men and women, as shown in Figures 8B and 8C. Among men, prevalence of obesity markedly increased up to age 45-54 (from 11% to 36%), and then stabilised up to age 65-74 (ranging from 36% to 37%) before dropping to 34% among those aged 75 and over. Among women obesity prevalence increased more sharply at an earlier age, with the largest increase between age groups 25-34 and 35-44 (from 24% to 36%); prevalence then stabilised between ages 35-44 and 65-74 (ranging from 34% to 37%) before declining to 24% among those aged 75 and over.

There was a strong association between mean BMI and age for all adults. Mean BMI increased as age increased, before decreasing amongst people aged 75 or over. A similar pattern was found for men and women.   **Figures 8B and 8C, Table 8.2**

Figure 8B
Prevalence of overweight (including obesity) and obesity in men, 2017, by age

■ Overweight including obese (BMI 25 and over)
■ Obese (BMI 30 and over)
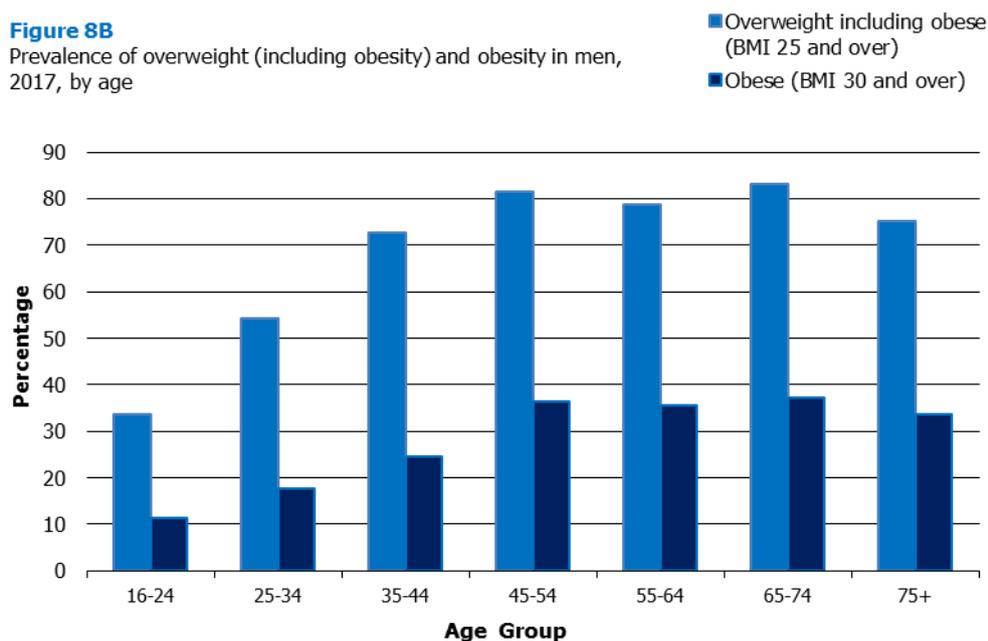
Figure 8C
Prevalence of overweight (including obesity) and obesity in women, 2017, by age

■ Overweight including obese (BMI 25 and over)
■ Obese (BMI 30 and over)
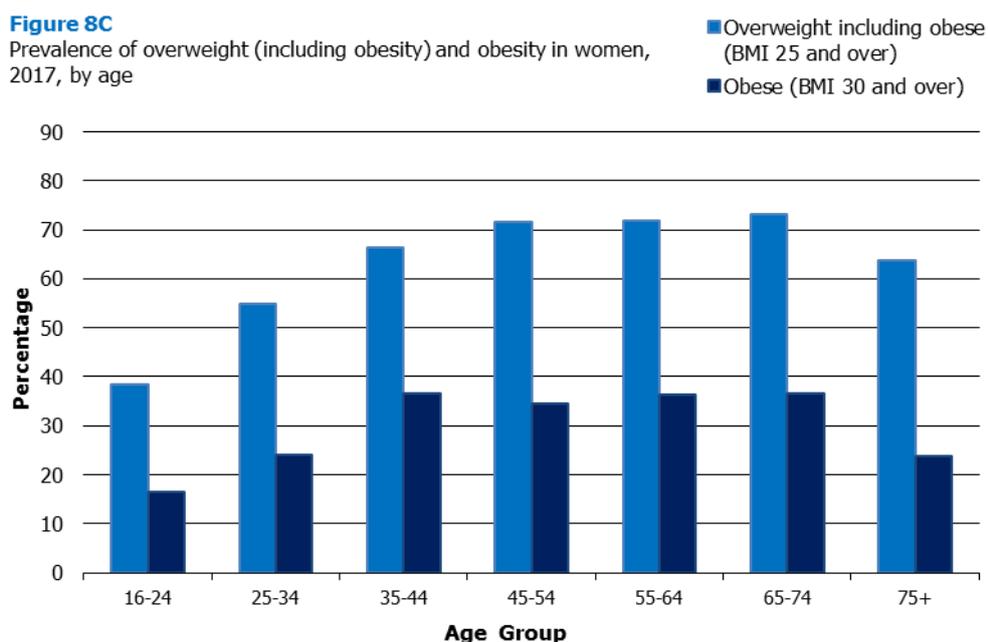
8.4 CHILD OVERWEIGHT AND OBESITY PREVALENCE

8.4.1 Trends in child healthy weight, overweight and obesity prevalence since 1998

In 2017, the proportion of children aged between 2 and 15 in the 'healthy weight' range was 72%, remaining at a similar level since 2015. The longer-term trend in the prevalence of children in the 'healthy weight' range has fluctuated since the beginning of the time series in 1998, with the lowest prevalence occurring in 2011 (65%) and the highest in 2015 and 2017 (both 72%).

The pattern over time was significantly different for boys and girls. There is some indication of a general trend of increasing prevalence of healthy weight in boys. In 2017 three quarters (75%) of boys were within the healthy weight range; this is the highest percentage since data collection began in 1998. Although this change over time for boys is statistically significant, there has been fluctuation over the time series so it will be important to monitor these figures next year to establish whether the indicated trend continues.
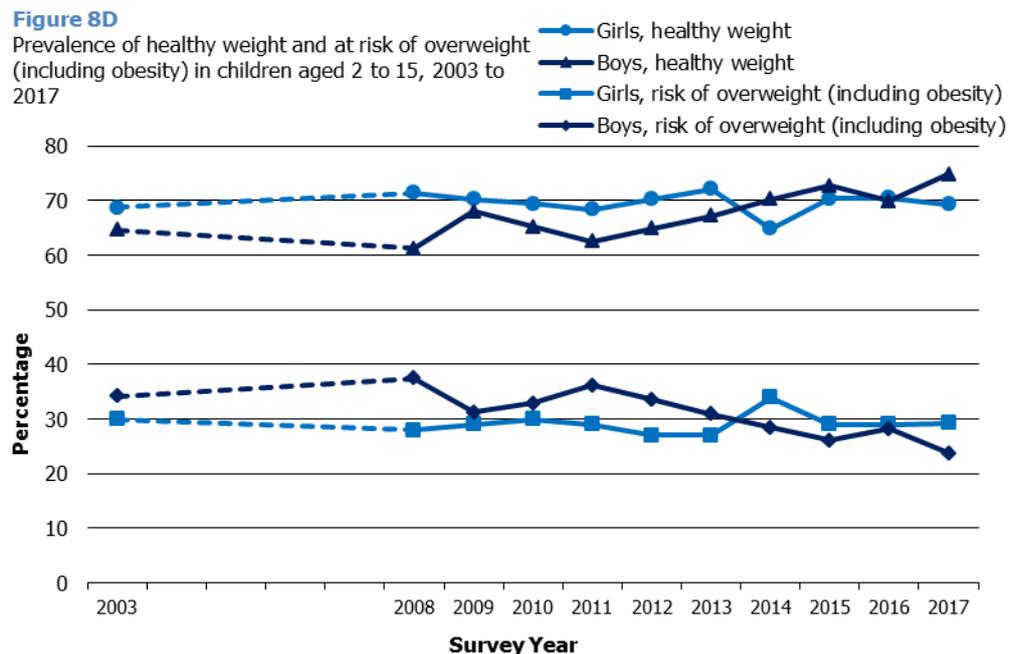
As shown in Figure 8D, there was no significant change in the prevalence of healthy weight for girls in 2017, with 69% of girls falling into within the healthy weight range. Following the trend for all children, healthy weight prevalence amongst girls has remained relatively steady since 1998.

Prevalence of children at risk of obesity in 2017 was the lowest recorded since time series began, at 13%. The percentage of children at risk of obesity has shown a steady decline since 2014 (with prevalence from 2003 to 2014 steady between 16-17%) to 15% in 2015, 14% in 2016 to 13% in 2017. The decline among all children in prevalence of risk of obesity has largely been driven by the decline in prevalence among boys from a peak of 20% in 2011 and 2012 to 12% in 2017. **Figure 8D, Table 8.3**

Figure 8D
Prevalence of healthy weight and at risk of overweight (including obesity) in children aged 2 to 15, 2003 to 2017

Legend:
- Girls, healthy weight
- Boys, healthy weight
- Girls, risk of overweight (including obesity)
- Boys, risk of overweight (including obesity)

8.4.2 Child BMI categories in 2017, by age and sex

As in previous years, prevalence of healthy weight amongst children significantly decreased with age, with children aged 2-6 being the most likely to fall within the healthy weight range (78%, compared with 66% of children aged 12-15). The effect of age on prevalence of healthy weight was most profound amongst girls, with 76% of 2-6 year olds falling into the healthy weight range compared with 59% of 12-15 year

olds; a difference of 17 percentage points (figures for boys were 79% and 70%, respectively, a difference of 9 percentage points). **Table 8.4**
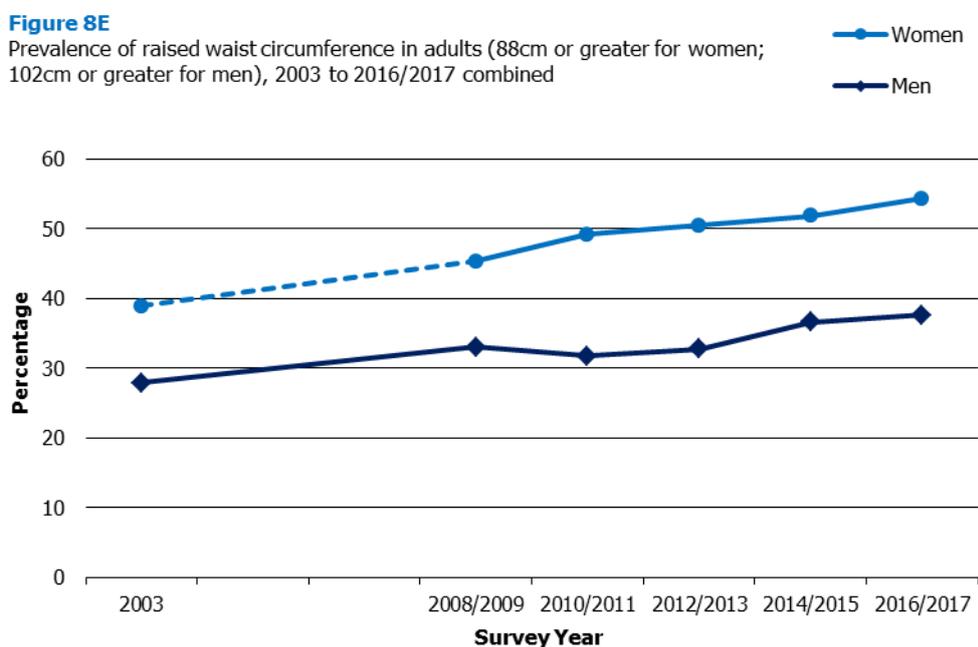
8.5 WAIST CIRCUMFERENCE AND DISEASE RISK (BASED ON BMI AND WAIST CIRCUMFERENCE)

8.5.1 Trends in mean and raised waist circumference since 2003

Waist circumferences of adults aged 16 and over, on average, have increased since 2003 (men: 95.3cm in 2003 compared with 98.1cm in 2016/2017, women: 86.3cm in 2003, compared with 90.5cm in 2016/2017) using nurse equivalent measures. For both men and women, there was no significant increase in waist circumference between 2014/2015 and 2016/2017 using nurse equivalent measures.

As shown in Figure 8E, the proportion of men and women with a raised waist circumference continues to follow an upward trend. The proportion of men aged 16 and over with a raised waist circumference increased from 28% in 2003 to 38% in 2016/2017. The increase in raised waist circumference was more profound for women, increasing from 39% in 2003 to 54% in 2016/2017. For both men and women, the proportion of those aged 16 and over with a raised waist circumference in 2016/2017 was the highest since data was first collected for all adults in 2003. **Figure 8E, Table 8.5**

Figure 8E
Prevalence of raised waist circumference in adults (88cm or greater for women; 102cm or greater for men), 2003 to 2016/2017 combined

8.5.2 Body Mass Index (BMI) and waist circumference, 2016/2017 (combined)

Overall, 69% of women and 58% of men had at least an increased health risk based on their BMI and waist circumference in 2016/2017, with little change since 2014/2015[44]. Women were more likely than men to be categorised as 'high risk or above' (57% of women, compared with 42% of men).

As shown in Figures 8F and 8G, health risk increased with age for both men and women. Those aged 16-24 were least likely to have increased risk (24% of men and 41% of women), whilst those aged 65-74 were the most likely (78% of men and 83% of women).

Figures 8F and 8G, Table 8.6

Figure 8F
Health risk category (based on waist circumference and BMI) for men, 2016/2017 combined, by age

- Very/extremely high risk
- High risk
- Increased risk
- No increased risk (inc underweight)
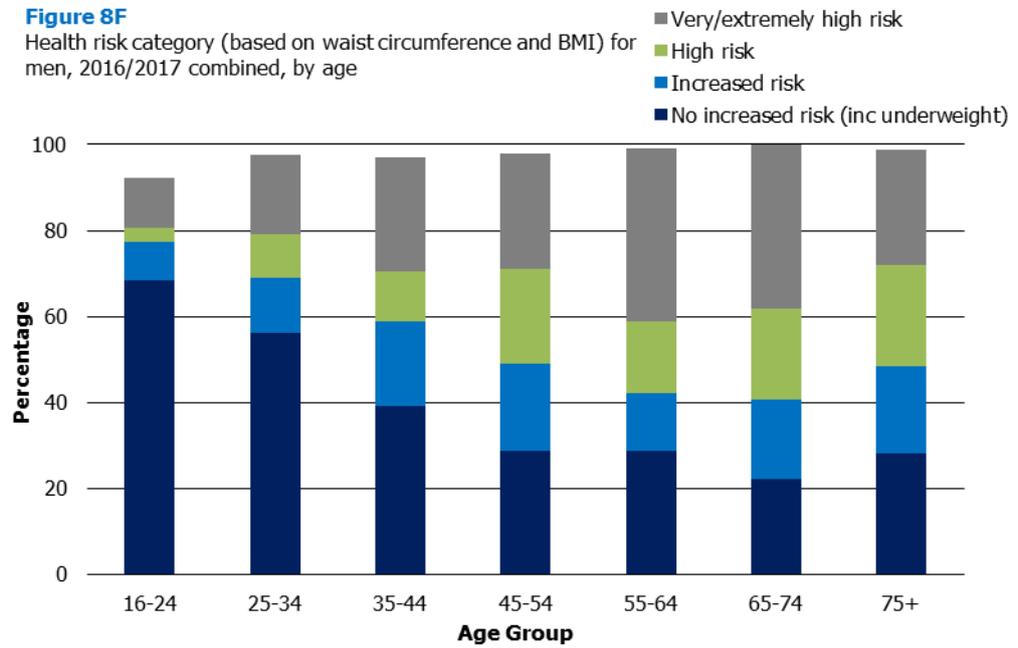
Figure 8G
Health risk category (based on waist circumference and BMI) for women, 2016/2017 combined, by age

- Very/extremely high risk
- High risk
- Increased risk
- No increased risk (inc underweight)
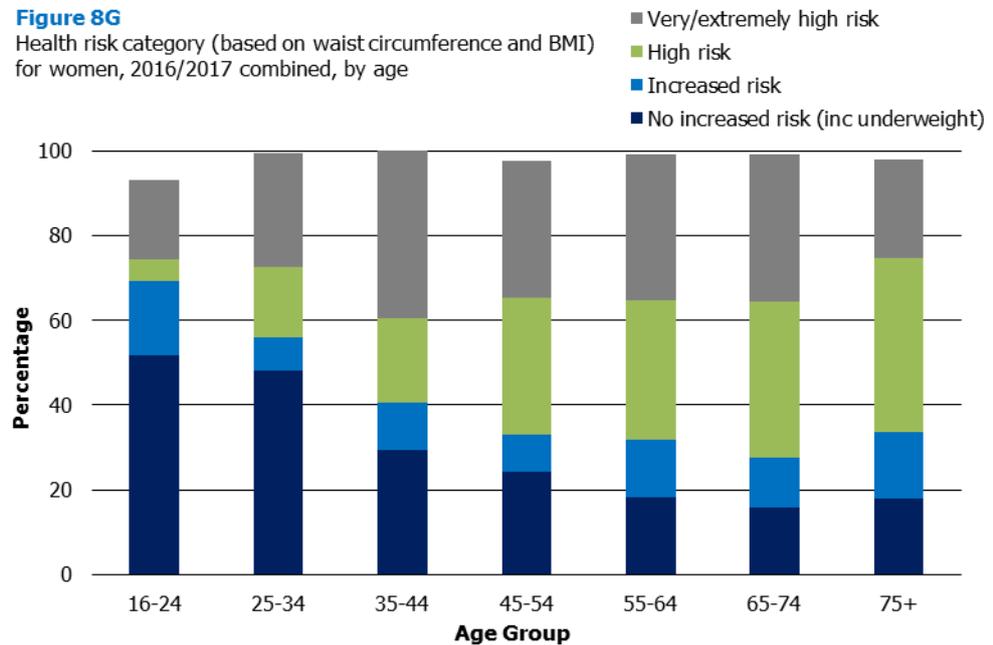
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[20] The Frankfort Plane is an imaginary line passing through the external ear canal and across the top of the lower bone of the eye socket, immediately under the eye. Participants' heads are positioned with the Frankfort Plane in a horizontal position when height is measured using a stadiometer as a means of ensuring that, as far as possible, the measurements taken are standardised.

[21] These cut-offs differ to those used in the previous surveys. In 1995 and 1998 the normal weight range was defined as 20-25 kg/m^2, in 2003 it was changed to 18.5-25 kg/m^2. From 2008 onwards the ranges are defined as set out below. This brings the definition in line with WHO recommendations. The impact of the change of definition is very marginal as very few people have a BMI measurement that is exactly 18.5, 25, 30 or 40 kg/m^2.

	2003	**2008 onwards**
Underweight	18.5 or under	Less than 18.5
Normal weight	Over 18.5 – 25	18.5 to less than 25
Overweight	Over 25 – 30	25 to less than 30
Obese	Over 30 – 40	30 to less than 40
Morbidly obese	Over 40	40+

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[39]   A high waist circumference of 94 cm for men is equivalent to one of 94.6cm following the interviewer protocol. A very high waist circumference of 102 cm is equivalent to one of 102.75cm. A high waist circumference of 80cm for women is equivalent to one of 82.4cm following the interviewer protocol. A very high waist circumference of 88cm is equivalent to one of 91.35cm.

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[44]   See: https://beta.gov.scot/publications/scottish-health-survey-2015-volume-1-main-report/

Table list

Table 8.1 Mean adult BMI, prevalence of overweight and obesity, 2003 to 2017

Aged 16 and over with valid height and weight measurements   *2003 - 2017*

BMI (kg/m^2)	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%
Men											
25 and over[a]	65	68	68	68	69	68	69	69	67	68	67
30 and over[b]	22	26	28	27	28	27	26	26	28	29	27
40 and over[c]	2	1	2	2	2	2	2	2	2	3	2
Mean	27.0	27.3	27.6	27.5	27.6	27.4	27.5	27.5	27.7	27.7	27.6
SE of the mean	0.10	0.12	0.12	0.13	0.12	0.14	0.14	0.17	0.15	0.17	0.19
Women											
25 and over[a]	60	62	61	62	60	60	61	61	62	61	63
30 and over[b]	26	27	28	29	28	28	30	29	30	29	30
40 and over[c]	3	3	4	3	4	3	4	4	3	4	4
Mean	27.2	27.4	27.4	27.6	27.5	27.4	27.6	27.6	27.5	27.7	27.8
SE of the mean	0.12	0.13	0.13	0.12	0.12	0.14	0.17	0.16	0.15	0.18	0.19
All adults											
25 and over[a]	62	65	65	65	64	64	65	65	65	65	65
30 and over[b]	24	27	28	28	28	27	28	28	29	29	29
40 and over[c]	3	2	3	2	3	3	3	3	3	4	3
Mean	27.1	27.4	27.5	27.5	27.5	27.4	27.5	27.6	27.6	27.7	27.7
SE of the mean	0.09	0.10	0.09	0.10	0.10	0.11	0.13	0.12	0.12	0.13	0.15

Continued…

Table 8.1 *- Continued*

Aged 16 and over with valid height and weight measurements   *2003 - 2017*

BMI (kg/m^2)	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):											
Men	*3217*	*2692*	*3161*	*2992*	*3003*	*2048*	*2027*	*1919*	*2043*	*1745*	*1444*
Women	*3458*	*2829*	*3214*	*3046*	*3100*	*2063*	*2104*	*2028*	*2075*	*1796*	*1528*
All adults	*6675*	*5521*	*6375*	*6038*	*6103*	*4110*	*4130*	*3948*	*4118*	*3542*	*2973*
Bases (unweighted):											
Men	*3016*	*2457*	*2843*	*2674*	*2745*	*1876*	*1844*	*1771*	*1863*	*1603*	*1281*
Women	*3684*	*3020*	*3456*	*3327*	*3389*	*2221*	*2288*	*2198*	*2187*	*1980*	*1669*
All adults	*6700*	*5477*	*6299*	*6001*	*6134*	*4097*	*4132*	*3969*	*4050*	*3583*	*2950*

a 25 and over = overweight / obese / morbidly obese

b 30 and over = obese / morbidly obese

c 40 and over = morbidly obese

Table 8.2 Adult BMI, 2017, by age and sex

Aged 16 and over with valid height and weight measurements   *2017*

BMI (kg/m²)	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Less than 18.5	6	1	-	-	1	-	0	1
18.5 to less than 25[c]	60	44	27	18	20	17	25	31
25 to less than 30	22	36	48	45	43	46	41	40
30 to less than 40	11	16	22	35	34	34	33	25
40+	-	2	2	2	2	3	1	2
All 25 and over[a]	*33*	*54*	*73*	*82*	*79*	*83*	*75*	*67*
All 30 and over[b]	*11*	*18*	*25*	*36*	*36*	*37*	*34*	*27*
Mean	24.2	26.4	27.9	28.7	29.1	29.1	28.4	27.6
Standard error of the mean	0.49	0.44	0.41	0.38	0.33	0.32	0.43	0.19
Women								
Less than 18.5	9	2	0	0	2	-	1	2
18.5 to less than 25[c]	53	43	33	28	26	27	35	35
25 to less than 30	22	31	30	37	36	36	40	33
30 to less than 40	14	20	30	28	31	33	23	26
40+	3	4	6	6	6	3	1	4
All 25 and over[a]	*38*	*55*	*66*	*71*	*72*	*73*	*64*	*63*
All 30 and over[b]	*16*	*24*	*36*	*34*	*36*	*37*	*24*	*30*
Mean	25.0	26.9	28.7	28.8	28.7	29.0	27.2	27.8
Standard error of the mean	0.55	0.45	0.47	0.37	0.41	0.36	0.37	0.19
All adults								
All 25 and over[a]	*36*	*55*	*70*	*76*	*75*	*78*	*68*	*65*
All 30 and over[b]	*14*	*21*	*31*	*35*	*36*	*37*	*28*	*29*
18.5 to less than 25[c]	*57*	*44*	*30*	*24*	*24*	*22*	*31*	*33*
Mean	24.6	26.6	28.3	28.8	28.9	29.0	27.7	27.7
Standard error of the mean	0.38	0.31	0.33	0.27	0.28	0.26	0.29	0.15
Bases (weighted):								
Men	*221*	*254*	*221*	*256*	*212*	*177*	*104*	*1444*
Women	*208*	*240*	*233*	*273*	*230*	*197*	*147*	*1528*
All adults	*429*	*494*	*454*	*529*	*442*	*373*	*251*	*2973*
Bases (unweighted):								
Men	*117*	*190*	*167*	*191*	*249*	*228*	*139*	*1281*
Women	*138*	*227*	*266*	*285*	*304*	*276*	*173*	*1669*
All adults	*255*	*417*	*433*	*476*	*553*	*504*	*312*	*2950*

a 25 and over = overweight (including obese)

b 30 and over = obese

c 18.5 to less than 25 = healthy weight

Table 8.3 Proportion of children with BMI within the healthy range, at risk of overweight and at risk of obesity, 1998 to 2017

Aged 2-15 with valid height and weight measurements[a]   *1998 - 2017*

BMI status (National BMI percentiles)	1998	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%	%	%	%	%	%	%
Boys												
Within healthy range[b]	70	65	61	68	65	63	65	67	70	73	70	75
Outwith healthy range[c]	30	35	39	32	35	37	35	33	30	27	30	25
At risk of overweight (including obesity)[d]	29	34	38	31	33	36	34	31	28	26	28	24
At risk of obesity[e]	15	18	19	17	18	20	20	17	16	15	14	12
Girls												
Within healthy range[b]	70	69	72	70	70	68	70	72	65	70	71	69
Outwith healthy range[c]	30	31	29	30	31	32	30	28	35	30	29	31
At risk of overweight (including obesity)[d]	29	30	28	29	30	29	27	27	34	29	29	29
At risk of obesity[e]	14	14	14	16	14	15	14	15	18	14	14	15
All children												
Within healthy range[b]	70	67	66	69	67	65	68	70	68	72	70	72
Outwith healthy range[c]	30	33	34	31	33	35	33	30	32	28	30	28
At risk of overweight (including obesity)[d]	29	32	33	30	31	33	31	29	31	28	29	26
At risk of obesity[e]	14	16	17	16	16	17	17	16	17	15	14	13

Continued…

Table 8.3 - *Continued*

Aged 2-15 with valid height and weight measurements[a]   *1998 - 2017*

BMI status (National BMI percentiles)	1998	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bases (weighted):												
Boys	*985*	*1243*	*669*	*958*	*641*	*655*	*663*	*687*	*620*	*502*	*548*	*579*
Girls	*931*	*1182*	*621*	*924*	*612*	*621*	*620*	*660*	*590*	*467*	*539*	*536*
All children	*1916*	*2425*	*1290*	*1882*	*1253*	*1276*	*1283*	*1347*	*1210*	*969*	*1088*	*1115*
Bases (unweighted):												
Boys	*1780*	*1208*	*652*	*967*	*662*	*643*	*630*	*678*	*608*	*508*	*533*	*555*
Girls	*1704*	*1215*	*640*	*914*	*569*	*626*	*644*	*630*	*602*	*452*	*542*	*509*
All children	*3484*	*2423*	*1292*	*1881*	*1231*	*1269*	*1274*	*1308*	*1210*	*960*	*1075*	*1064*

a Children whose BMI was more than 7 standard deviations above or below the norm for their age were excluded from the table

b BMI above 2nd percentile, below 85th percentile

c BMI at or below 2nd percentile, at or above 85th percentile

d BMI at or above 85th percentile

e BMI at or above 95th percentile

Table 8.4 Children's BMI, 2017, by age and sex

Aged 2-15 with valid height and weight measurements[a]   *2017*

BMI status (National BMI percentiles)	Age			Total
	2-6	7-11	12-15	
	%	%	%	%
Boys				
At risk of underweight[b]	2	2	1	1
Healthy weight[c]	79	75	70	75
At risk of overweight[d]	12	9	13	11
At risk of obesity[e]	7	15	15	12
Outwith healthy range[f]	*21*	*25*	*30*	*25*
Overweight (including obese)[g]	*20*	*24*	*29*	*24*
Girls				
At risk of underweight[b]	1	1	3	1
Healthy weight[c]	76	69	59	69
At risk of overweight[d]	12	13	20	15
At risk of obesity[e]	10	17	18	15
Outwith healthy range[f]	*24*	*31*	*41*	*31*
Overweight (including obese)[g]	*23*	*30*	*38*	*29*
All children				
At risk of underweight[b]	1	1	2	1
Healthy weight[c]	78	72	66	72
At risk of overweight[d]	12	11	16	13
At risk of obesity[e]	9	16	16	13
Outwith healthy range[f]	*22*	*28*	*34*	*28*
Overweight (including obese)[g]	*21*	*27*	*33*	*26*
Bases (weighted):				
Boys	*195*	*210*	*173*	*579*
Girls	*200*	*214*	*122*	*536*
All children	*394*	*425*	*295*	*1115*
Bases (unweighted):				
Boys	*196*	*205*	*154*	*555*
Girls	*210*	*190*	*109*	*509*
All children	*406*	*395*	*263*	*1064*

a Children whose BMI was more than 7 standard deviations above or below the norm for their age were excluded from the table
b BMI at or below 2nd percentile
c BMI above 2nd percentile, below 85th percentile
d BMI at or above 85th percentile, below 95th percentile
e BMI at or above 95th percentile
f BMI at or below 2nd percentile, at or above 85th percentile
g BMI at or above 85th percentile

Table 8.5 Mean and raised waist circumference (WC), 2003 to 2016/2017 combined

Aged 16 and over with valid waist measurements　　　　　　　　　　*2003 - 2016/2017 combined*

Waist Circumference (WC)	2003	2008/ 2009 combined	2010/ 2011 combined	2012/ 2013 combined	2014/ 2015 combined	2016/ 2017 combined
	cm	cm	cm	cm	cm	cm
Men						
Mean WC						
Nurse / nurse equivalent	95.3	96.5	96.3	97.4	98.2	98.1
Interviewer	n/a	n/a	n/a	98.1	98.9	98.8
SE of the mean						
Nurse / nurse equivalent	0.38	0.58	0.59	0.51	0.54	0.69
Interviewer	n/a	n/a	n/a	0.52	0.55	0.71
% with raised WC[a]	28	33	32	33	37	38
Women						
Mean WC						
Nurse / nurse equivalent	86.3	88.3	89.0	89.6	89.5	90.5
Interviewer	n/a	n/a	n/a	93.1	93.0	94.1
SE of the mean						
Nurse / nurse equivalent	0.35	0.48	0.47	0.50	0.46	0.60
Interviewer	n/a	n/a	n/a	0.56	0.51	0.67
% with raised WC[a]	39	45	49	50	52	54
Bases (weighted):						
Men	*2532*	*1061*	*962*	*1054*	*1029*	*873*
Women	*2679*	*1134*	*1010*	*1092*	*1076*	*933*
Bases (unweighted):						
Men	*2356*	*970*	*865*	*970*	*927*	*775*
Women	*2850*	*1224*	*1107*	*1177*	*1181*	*1017*

a A raised WC is more than 102 cm for men and more than 88 cm for women, using the nurse equivalent measures. These are equivalent to 102.75cm and 91.35 cm using the interviewer measures

Table 8.6 Health risk category associated with overweight and obesity based on BMI and waist circumference, 2016/2017 combined, by age and sex

Aged 16 and over with valid height, weight and waist measurements[a] *2016/2017 combined*

Waist circumference[b] & BMI classification[c]	Health risk category[d]	Age							Total
		16-24	25-34	35-44	45-54	55-64	65-74	75+	
		%	%	%	%	%	%	%	%
Men									
Underweight									
Low WC	Not applicable	8	2	3	2	1	-	1	3
High WC	Not applicable	-	-	-	-	-	-	-	-
Very high WC	Not applicable	-	-	-	-	-	-	-	-
All underweight		*8*	*2*	*3*	*2*	*1*	*-*	*1*	*3*
Normal									
Low WC	No increased risk	52	39	20	17	20	11	14	26
High WC	No increased risk	-	3	4	4	2	7	8	3
Very high WC	Increased	-	0	-	-	1	-	-	0
All normal		*52*	*43*	*24*	*20*	*22*	*18*	*22*	*29*
Overweight									
Low WC	No increased risk	16	14	16	8	7	4	6	11
High WC	Increased	9	13	20	20	13	18	20	16
Very high WC	High	2	8	10	21	15	20	23	14
All overweight		*27*	*35*	*46*	*50*	*35*	*43*	*50*	*40*
Obesity I									
Low WC	Increased	-	-	-	-	-	-	-	-
High WC	High	2	1	1	1	2	1	-	1
Very high WC	Very high	8	13	20	22	32	28	20	20
All obese I		*10*	*14*	*21*	*23*	*34*	*29*	*20*	*21*

Continued…

Table 8.6 - *Continued*

Waist circumference[b] & BMI classification[c]	Health risk category[d]	Age							Total
		16-24	25-34	35-44	45-54	55-64	65-74	75+	
		%	%	%	%	%	%	%	%
Obesity II									
Low WC	Very high	-	-	-	-	-	-	-	-
High WC	Very high	-	-	-	-	0	-	-	0
Very high WC	Very high	3	4	5	5	8	6	4	5
All obese II	*Very high*	*3*	*4*	*5*	*5*	*8*	*6*	*4*	*5*
Obesity III									
Low WC	Extremely high	-	-	-	-	-	-	-	-
High WC	Extremely high	-	-	-	-	-	-	-	-
Very high WC	Extremely high	-	1	2	1	1	4	3	1
All obese III	*Extremely high*	*-*	*1*	*2*	*1*	*1*	*4*	*3*	*1*
Men – Overall risk[d]									
	Not applicable	8	2	3	2	1	-	1	3
	No increased	68	56	39	29	29	22	28	40
	Increased	9	13	20	20	13	18	20	16
	High	3	10	12	22	17	21	23	15
	Very high	11	17	24	26	40	34	24	25
	Extremely high	-	1	2	1	1	4	3	1
	Increased risk or above	*24*	*41*	*58*	*69*	*71*	*78*	*71*	*58*
	High risk or above	*15*	*28*	*38*	*49*	*57*	*59*	*50*	*42*
	Very/extremely high risk	*11*	*19*	*26*	*27*	*40*	*38*	*27*	*27*

Table 8.6 - Continued

Aged 16 and over with valid height, weight and waist measurements[a]   *2016/2017 combined*

Waist circumference[b] & BMI classification[c]	Health risk category[d]	Age							Total
		16-24	25-34	35-44	45-54	55-64	65-74	75+	
		%	%	%	%	%	%	%	%
Women									
Underweight									
Low WC	Not applicable	7	1	-	2	1	1	2	2
High WC	Not applicable	-	-	-	-	-	-	-	-
Very high WC	Not applicable	-	-	-	-	-	-	-	-
All underweight		*7*	*1*	*-*	*2*	*1*	*1*	*2*	*2*
Normal									
Low WC	No increased risk	35	33	13	13	9	9	9	17
High WC	No increased risk	16	11	14	11	10	7	8	11
Very high WC	Increased	2	2	2	3	5	9	11	5
All normal		*52*	*47*	*29*	*26*	*23*	*25*	*29*	*33*
Overweight									
Low WC	No increased risk	1	4	2	1	0	-	-	1
High WC	Increased	15	6	9	6	9	2	4	7
Very high WC	High	5	16	19	32	32	37	41	26
All overweight		*22*	*25*	*30*	*39*	*41*	*39*	*45*	*34*
Obesity I									
Low WC	Increased	-	-	-	-	-	-	-	-
High WC	High	-	1	1	-	1	-	-	0
Very high WC	Very high	10	13	17	24	16	25	19	18
All obese I		*10*	*14*	*18*	*24*	*17*	*25*	*19*	*18*

Continued…

Table 8.6 - Continued

Aged 16 and over with valid height, weight and waist measurements[a]　　　　　　　　　　　　　　　　　　*2016/2017 combined*

Waist circumference[b] & BMI classification[c]	Health risk category[d]	Age							Total
		16-24	25-34	35-44	45-54	55-64	65-74	75+	
		%	%	%	%	%	%	%	%
Obesity II									
Low WC	Very high	-	-	-	-	-	-	-	-
High WC	Very high	-	-	-	-	0	-	-	0
Very high WC	Very high	7	9	12	4	12	8	4	8
All obese II	*Very high*	*7*	*9*	*12*	*4*	*12*	*8*	*4*	*8*
Obesity III									
Low WC	Extremely high	-	-	-	-	-	-	-	-
High WC	Extremely high	-	-	-	-	-	-	-	-
Very high WC	Extremely high	1	5	10	5	6	2	0	4
All obese III	*Extremely high*	*1*	*5*	*10*	*5*	*6*	*2*	*0*	*4*
Women – Overall risk[d]									
	Not applicable	7	1	-	2	1	1	2	2
	No increased	52	48	29	24	18	16	18	30
	Increased	17	8	11	9	14	12	16	12
	High	5	17	20	32	33	37	41	26
	Very high	18	22	29	28	29	33	23	26
	Extremely high	1	5	10	5	6	2	0	4
	Increased risk or above	*41*	*51*	*71*	*73*	*81*	*83*	*80*	*69*
	High risk or above	*24*	*43*	*59*	*65*	*67*	*72*	*64*	*57*
	Very/extremely high risk	*19*	*27*	*40*	*32*	*34*	*35*	*24*	*31*

Continued…

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Table 8.6 - Continued

Aged 16 and over with valid height, weight and waist measurements[a]   *2016/2017 combined*

Waist circumference[b] & BMI classification[c]	Health risk category[d]	Age							Total
		16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted)									
Men		119	140	131	153	132	101	60	836
Women		112	140	135	164	138	115	85	889
Bases (unweighted)									
Men		56	109	107	116	143	134	76	741
Women		82	146	142	164	178	162	98	972

a Percentages and bases in this table are based on those who have a valid measurement for waist circumference, in addition to valid measurements of height and weight. Therefore subtotals for BMI categories by age and sex in this table are not definitive
b Nurse equivalent waist circumference categories according to WHO/SIGN guidelines (115): low: <94cm for men and <80cm for women; high: ≥94cm and <102cm for men, ≥80cm and <88cm for women; very high: ≥102cm for men and ≥88cm for women (nurse equivalent measures)
c BMI categories according to WHO guidelines: Underweight: Less than 18.5kg/m^2, Normal: 18.5 to less than 25kg/m^2, Overweight: 25 to less than 30kg/m^2, Obesity I: 30 to less than 35kg/m^2, Obesity II: 35 to less than 40kg/m^2, Obesity III: 40kg/m^2 or more
d Health risk category according to SIGN guidelines (115)

Chapter 9

Gambling

SUMMARY

6 in 10 (63%) adults had gambled in last 12 months

Men were more likely to have gambled than women **66%** **60%**

Most popular gambling activities

- National Lottery — **46%**
- Scratch cards — **22%**
- Other lotteries — **17%**
- Horse racing — **11%**
- Online bookmakers — **10%**
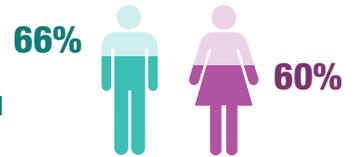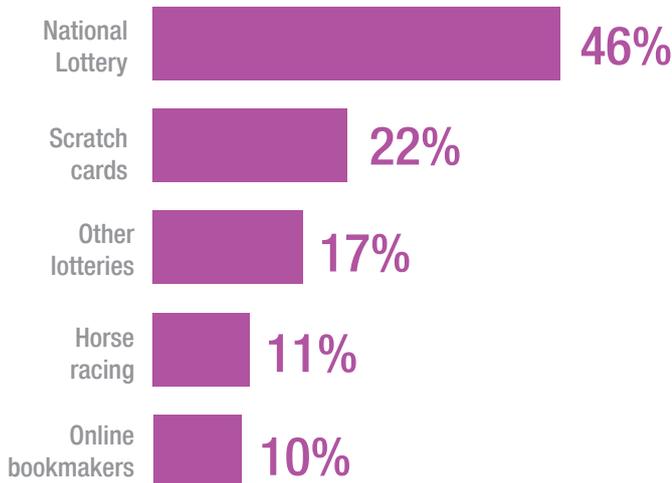
- In 2017 adults took part in an average of 1.5 gambling activities in the past year.
- Excluding the National Lottery completely, 12% of all adults had participated in online gambling, with men more likely than women to do so (18% of men, 6% of women).
- Men took part in a wider range of activities than women; of the 19 different gambling activities 7 were undertaken by more than 10% of men whereas only 3 different gambling activities were undertaken by over 10% of women.
- Overall, more than 1 in 10 (12%) adults participated in four or more gambling activities in the last year with men more likely to do so (17% of men compared with 7% of women).

- The youngest and oldest age groups had the lowest gambling participation rates (51% of those aged 16-24 and 44% of those aged 75 and over) with participation highest among those aged 45-54 (73%). This pattern was largely influenced by national lottery only gambling – once this is excluded gambling activity was at its highest for those aged 25-34 (58%), gradually decreasing to 25% among those aged 75 and over.
- Adult gambling activity participation decreased from 70% in 2012 to 63% in 2017; largely driven by a decrease in National Lottery participation from 58% in 2012 to 46% in 2017.

0.8% of adults were problem gamblers
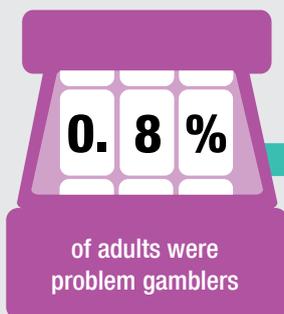
1.4% of men, and **0.2%** of women

Problem gambling was particularly high among younger men

- 25-34 years old — **2.6%**
- 35-44 years old — **2.4%**
- Adult average — **0.8%**

- Prevalence of problem gambling was lowest among men aged 65-74 (0.2%). For women aged 16-24 and 45 and over there were no cases of problem gamblers among survey participants.

- Adults with a GHQ-12 score of 4 or more (indicative of a possible psychiatric disorder) were more likely to be classed as a problem gambler according to the DSM-IV scale than those with a GHQ-12 score of 0 (1.7% for those with a score of 4 or more compared to 0.3 for those with a score of 0). This association was particularly evident for men – 3.4% of men with a GHQ-12 score of 4 or more were identified as problem gamblers compared with 0.6% for those with a score of 0.

1.5% in the most deprived areas

0.5% in the least deprived areas

were identified as problem gamblers

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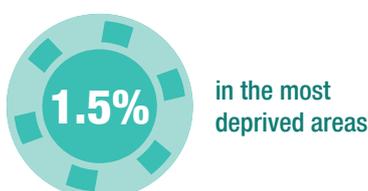
9   GAMBLING BEHAVIOUR

Malin Karikoski

9.1   INTRODUCTION

Gambling behaviour is increasingly a subject of public health and policy interest in Britain. In the past decade, the gambling landscape in Britain has changed significantly. The public now has access to an unprecedented variety of gambling apps, websites, online games and lotteries and online gambling behaviour is constantly evolving, such as following gambling companies on social media[1].

In addition, the volume of gambling advertisement to which the public is exposed has increased drastically in recent years. A 2013 Ofcom report found that television advertisements for gambling had increased by 600% from 234,000 per year in 2007 to 1.39 million in 2012, with adults viewing approximately 630 adverts and under-16s exposed to an average of 211 adverts each[2].

Gambling constitutes a serious public health concern. Problem gambling, which is defined as gambling behaviour that causes harm to the gambler and to those around them[3] can contribute to a range of adverse mental and physical health issues, including experience of depression, insomnia, stress-related disorders as well as experience of comorbid disorders such as alcohol abuse or dependence[4]. Annual statistics from GamCare[5] identify the most commonly reported negative impacts of problem gambling as financial difficulties, anxiety and stress, and family and relationship difficulties.

The most severe form of problem gambling, pathological gambling, has been categorised as an impulse control disorder within the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders IV (DSM IV) and has been included in the manual since 1980[6].

9.1.1   Policy background

In Britain, gambling is positioned as a legitimate recreational and leisure activity with policy responsibility held by the British Department for Culture, Media and Sport. While gambling policy is a reserved matter, the Scotland Act 2016 gave Scottish Ministers limited powers to legislate on the number of Fixed Odds Betting Terminals in new betting shops only, but with the reduction of the maximum stake to £2, those very limited powers will effectively become null and void.

There is widespread recognition among policy makers, industry and health care professionals that, like alcohol consumption, some people who engage in gambling activity can experience harm. Unlike alcohol consumption, there are no specific policy targets relating to harm minimisation. The Gambling Act 2005[7], which came into force in 2007, overhauled the way commercial gambling is licensed, advertised and regulated in the UK.

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The Gambling Act 2005 contains three core licensing objectives. These are to:

- prevent gambling from being a source of crime or disorder, being associated with crime or disorder or being used to support crime,
- ensure that gambling is conducted in a fair and open way, and
- protect children and other vulnerable persons from being harmed or exploited by gambling.[8]

The final objective highlights the potential for some people who participate in gambling to experience harm as a result of their behaviour and states that these groups specifically should be protected.

In 2007, the British Medical Association highlighted the insufficient treatment facilities available for gambling problems and argued that services for problem gambling should be provided through the NHS, similar to those for drug and alcohol problems[9]. The only structured NHS provision for gambling problems in the UK is the NHS National Problem Gambling Clinic in London. In recognition of this gap, the Government launched a consultation in 2017 including a proposal in support of Gamble Aware's ambition to open more clinics regionally and plans for a Northern NHS Gambling Clinic[10].

In 2014, the Minister responsible for gambling, horse racing and the National Lottery announced a review of gambling advertising control, with youth and vulnerable groups a critical concern[11]. Two years later (2016) the Government announced a call for evidence into gaming machines and social responsibility. Evidence on gambling advertising was also included but its focus was on code of conduct[12]. The Committee of Advertising Practice remains open to amending the regulations around gambling advertising should new research provide a sufficient evidence base for this[13].

In 2018, the Minister for Sport and Civil Society announced plans to reduce the maximum stake which can be placed on Fixed Odds Betting Terminals (FOBTs) from £100 to £2 to reduce the risk of gambling-related harm[14].

9.1.2 Reporting on gambling in the Scottish Health Survey (SHeS)

This chapter presents estimates of past year participation in all forms of gambling in Scotland followed by estimates of problem and at-risk gambling according to two different measurement instruments, the DSM-IV and the Problem Gambling Severity Index (PGSI)[15]. The relationship between problem and at-risk gambling and deprivation, mental health (using the General Health Questionnaire 12 – GHQ-12) and alcohol consumption are also examined.

The area deprivation data are presented in Scottish Index of Multiple Deprivation (SIMD) quintiles. Readers should refer to the Glossary at the end of this Volume for a detailed description of SIMD.

Supplementary tables on gambling are also published on the Scottish Health Survey website[16]

9.2 METHODS AND DEFINITIONS

9.2.1 Gambling participation in the last year - definition and methods

All adult participants (aged 16 and over) were asked to report whether they had spent any money on nineteen different forms of gambling activity in the past 12 months. The activities presented ranged from buying tickets for the National Lottery draw to online betting and gaming. The range of activities presented reflected all forms of commercial gambling currently available in Scotland and also included betting or gambling privately with family or friends to capture informal gambling activity. In this chapter, gambling participation is defined as having participated in any one of these activities in the past 12 months. This definition also includes the requirement that the participant spent his/her own money on the activity. This was to ensure that those occasions where someone else placed bets or purchased lottery tickets with a participant's money were included.

The list of gambling activities and descriptions presented to participants reflected those used in the BGPS 2007 as closely as possible[17]. Exceptions included the addition of 'playing poker in pub or club' and of 'betting on sports activities' (like football) to reflect the growing popularity of these activities since the 2007 study.

As with the BGPS series, questions were asked using a confidential self-completion format. This was to encourage more honest reporting of a (potentially) sensitive activity and to ensure maximum comparability with the BGPS. Everyone who had gambled at least once in the last year was also asked to complete two screening instruments to identify problem or risky gambling behaviour (see Section 9.2.2).

9.2.2 Problem gambling definition and measurement

Problem gambling is commonly accepted to involve 'gambling to a degree that compromises, disrupts or damages family, personal or recreational pursuits'[18]. Despite this, there is no definitive definition of problem gambling and many different instruments or 'screens' exist to identify and measure problem gambling (with over 20 different types in existence)[19]. As yet, there is no agreed 'gold standard' instrument recommended for use in population surveys.

For this reason, it has been common practice in Great Britain to include two different screening instruments in population-based surveys of gambling behaviour. As the instruments tend to capture different types of people, using both together better reflects the broader range of issues associated with problematic gambling. The first of these is based on the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association (DSM-IV) and the second, the Problem Gambling Severity Index (PGSI)[15], was developed

in Canada specifically for use in population based studies. Both instruments have been widely used internationally and were the instruments of choice for the 2007 and 2010 BGPS. Since 2012, SHeS has included both the DSM-IV and the PGSI.

DSM-IV

The DSM-IV screening instrument contains ten diagnostic criteria ranging from chasing losses to committing a crime to fund gambling. Each DSM-IV item is assessed on a four-point scale, ranging from 'never' to 'very often.'[20] Responses to each item are then dichotomised to show whether a person meets the criteria or not. A total score between zero and ten is possible. A threshold of meeting at least three of the DSM-IV criteria is used to define problem gambling. This cut-off point has been found to give good discrimination between criterion groups and has provided the closest match to prevalence estimated by alternative screens[21]. Clinicians currently use an additional threshold of a DSM-IV score of five or more to represent pathological gambling[15]. For a variety of reasons, this threshold is not presented in this chapter. Firstly, the number of people falling into this category would be too small to allow any detailed analysis to be carried out. Secondly, the term 'problem gambling' is preferred as it has less negative and medicalised conceptual issues associated with it than the term 'pathological gambling[15].' Finally, it is likely that the label 'pathological gambling' will become obsolete as it has been renamed 'gambling disorder' in the recent publication of the DSM-V[22]. The threshold and scoring criteria used to identify problem gamblers here are the same as those used in the BGPS series.

PGSI

The PGSI was developed for use among the general population rather than within a clinical context and was tested and validated within a general population survey. The instrument consists of nine items ranging from chasing losses to gambling causing health problems and feeling guilty about gambling. Each item is assessed on a four-point scale: never, sometimes, most of the time, almost always. Responses to each item are given the following scores: never = zero; sometimes = one; most of the time = two; almost always = three. Scores for each item are summed to give a total score ranging from zero to 27. A score of eight or over on the PGSI represent problem gambling. This is the threshold recommended by the developers of the PGSI and the threshold used in this report. The PGSI was also developed to give further information on sub-threshold problem gamblers. PGSI scores between three and seven are indicative of 'moderate risk' gambling and scores of one or two are indicative of 'low risk' gambling[23]. As with the DSM-IV, the PGSI thresholds and scoring mechanisms used in SHeS are the same as those used in the BGPS.

Creating problem gambling scores

To produce problem gambling prevalence rates among all adults aged 16 and over, all non-gamblers were allocated a score of zero in both the

DSM-IV and the PGSI screens. To be included in the final analysis for each instrument, participants were required to have answered at least five of the DSM-IV questions or at least four of the PGSI questions. Those who answered less than this were only included in the final analysis if their responses to the answered questions scored them as a problem gambler. Overall, around 10% of eligible adults did not have a valid DSM-IV or PGSI score for the 2016-2017 combined dataset and around 9% of eligible adults do not have a valid DSM-IV or PGSI score for the 2014-2017 combined dataset. This should be borne in mind when reviewing these results.

9.2.3 General Health Questionnaire 12 (GHQ 12)

GHQ-12[24] is a standardised scale which measures mental distress and mental ill-health. There are 12 questions which cover concentration abilities, sleeping patterns, self-esteem, stress, despair, depression, and confidence in the past few weeks. For each of the 12 questions one point is given if the participant responded 'more than usual' or 'much more than usual'.

Scores are then totalled to create an overall score of zero to twelve. A score of four or more (described as a high GHQ-12 score) is indicative of a potential psychiatric disorder. Conversely a score of zero is indicative of psychological wellbeing. As GHQ-12 measures only recent changes to someone's typical functioning it cannot be used to detect chronic conditions.

9.3 GAMBLING PARTICIPATION IN THE LAST YEAR

9.3.1 Participation in gambling activities in last year, 2017, by age and sex

In 2017, six in ten (63%) adults (aged 16 and over) had gambled in the last 12 months, and in line with previous data[25], men were more likely to have gambled than women (66% and 60% respectively).

Among all adults the most popular gambling activity was purchasing tickets for the National Lottery draw (46%). This was followed by buying scratchcards (22%), other lotteries (17%), betting on horse races (not online) (11%) and online betting with a bookmaker (10%). The prevalence of each of the other gambling activities asked about in the survey was 7% or less.

A total of 45% of all adults had participated in gambling activities excluding National Lottery only play (50% of men, 41% of women). Excluding the National Lottery, 12% of all adults had participated in online gambling (18% of men, 6% of women).

Four in ten (43%) women bought tickets for the National Lottery draw in the last year, making it the most popular gambling activity among women in 2017. This was followed by purchasing scratchcards (20%), other lotteries (18%), bingo (not online) (9%) and horse races (not

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online) (8%). The prevalence of each of the other gambling activities was 4% or less.

Among men, after the National Lottery (48%) and scratchcards (23%), online betting with a bookmaker were the most popular gambling activities (17%), followed by other lotteries (15%), horse races (not online) (13%), sports events (not online) (13%) and slot machines (10%). The remaining gambling activities had a prevalence of between 7% (football pools) and 1% (spread-betting).

Men took part in a wider range of gambling activities than women. Of the 19 gambling activities asked about, seven different gambling activities were undertaken by at least 10% of men (ranging from 10% of men using slot machines to 48% participating in the National Lottery), whereas only three different activities had a prevalence of over 10% for each activity among women (43% participated in the National Lottery, 20% had bought scratchcards and 18% had played in other lotteries).

As evident in Figure 9A, men and women prefer different types of gambling. Men were more likely to gamble online (excluding National Lottery) than women (18% and 6% respectively). This pattern is clear for online betting with a bookmaker, which was the third most popular activity among men (17%) and sixth most popular among women (4%).

Figure 9A
Most popular gambling activities in the last 12 months, 2017, by sex
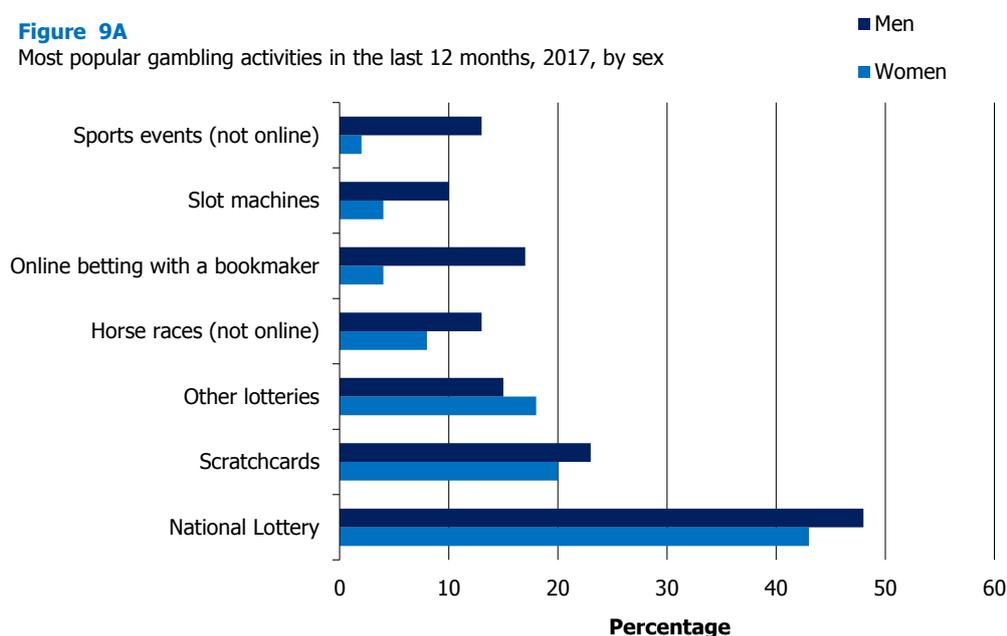
Gambling activity participation in the past 12 months varied by age, with the youngest and oldest age groups having the lowest gambling participation rates (51% of those aged 16-24 and 44% of those aged 75 and over), with participation being highest among those aged 45-54 (73%). Age-related patterns of gambling participation were similar for men and women as demonstrated in Figure 9B.

Figure 9B
Prevalence of any gambling activity in the last 12 months, 2017, by age and sex

■ Men
■ Women
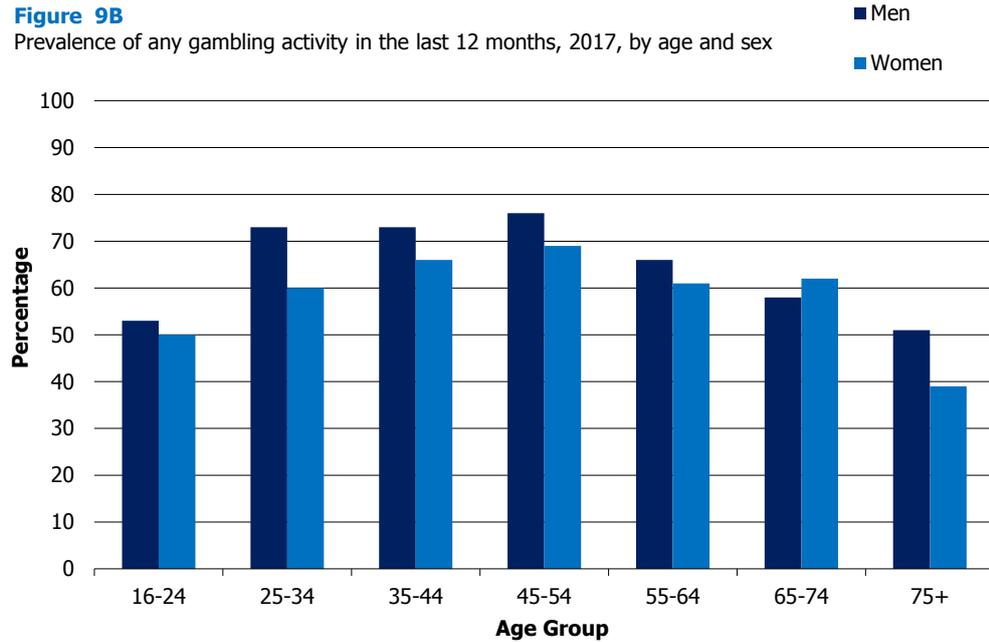
These patterns are highly influenced by National Lottery only gambling activity. By looking at any gambling activity excluding National Lottery only play, different participation patterns by age emerge. Gambling activity (excluding National Lottery only) was at its highest for those aged of 25-34 (at 58%) and then gradually decreased as age increased down to 25% among those aged 75 and over.

Different patterns by age were found for men and women for gambling (excluding National Lottery only). For men this peaked among those aged 25-44 (61-66%) whilst for women it was more evenly spread across the age groups, being highest among those aged 25-54 (45-51%) see Figure 9C.   **Figures 9A, 9B and 9C, Table 9.1**

Figure 9C
Prevalence of gambling activity excluding National Lottery in the last 12 months, 2017, by age and sex

■ Men
■ Women
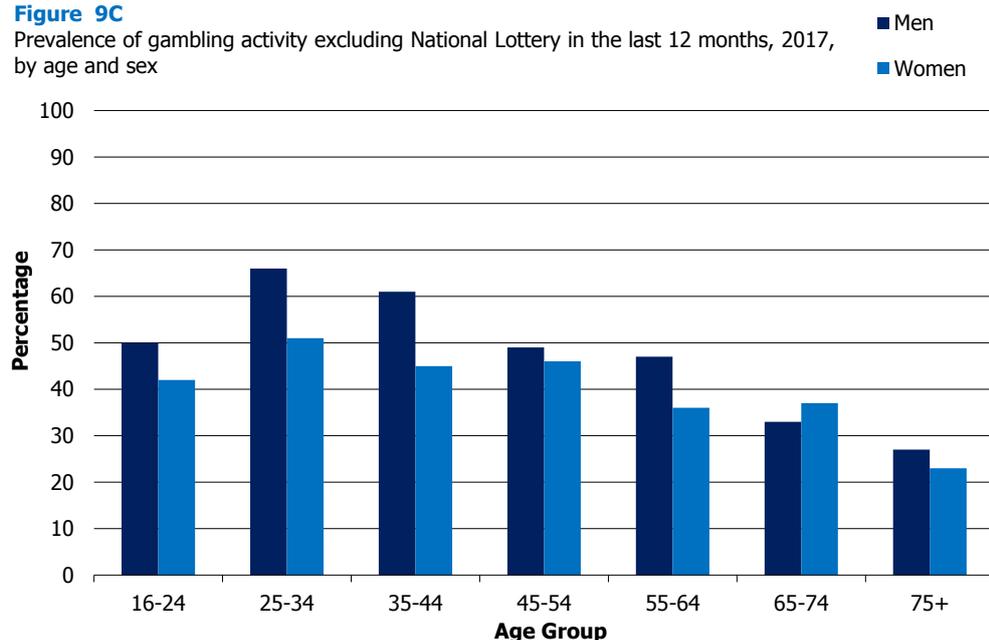
9.3.2 Number of gambling activities undertaken in last year, 2017, by age and sex

In 2017, adults took part in 1.5 gambling activities on average; this was higher for men (1.8) than for women (1.2). The mean number of gambling activities was higher among those in the younger age groups for both men and women (see Figure 9D). The number of different gambling activities participated in peaked among those aged 25-34 (2.5 for men and 1.5 for women). The mean number of gambling activities then declined, with those aged 75 and over having the lowest mean number of activities (0.9 for men and 0.6 for women).

Young men were far more likely to engage in greater amounts of gambling activities than young women (2.1-2.5 mean number of activities for men aged 16-44 compared with 1.2-1.5 for women in the same age group. The difference between men and women was narrower among older age groups.

Overall, 12% of adults participated in four or more gambling activities in the last year with men more likely to do so (17% of men compared to 7% of women).   **Figure 9D, Table 9.2**

Figure 9D
Mean number of gambling activities undertaken in the last 12 months, 2017, by age and sex
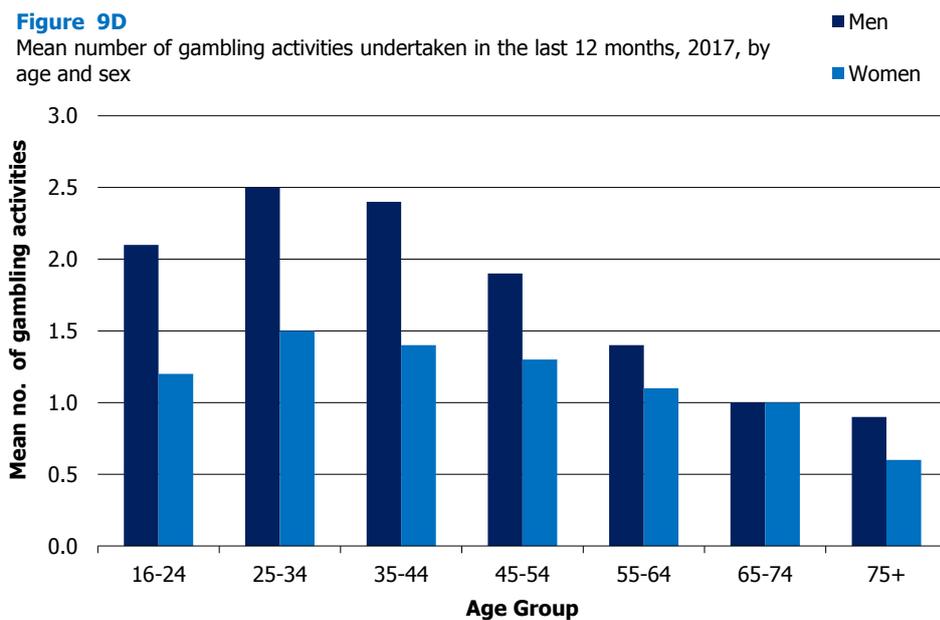
9.3.3 Number of gambling activities undertaken in last year, since 2012

Gambling activity participation for adults was lower in 2017 than in 2012 (63% compared with 70%) with levels ranging between 65% and 68% in the intervening years. This is consistent with participation in the National Lottery falling from 58% in 2012 to 51% in 2014, rising to 53% in 2015 before dropping again to 46% in 2017. Similar patterns were found for men and women. However, men have been consistently more likely than women to gamble since the start of data collection in 2012, with the gap ranging between 6-10 percentage points over the survey years, see Figure 9E.

The trend pattern was less clear for any adult gambling activity excluding National Lottery only with the highest levels of gambling participation in 2015 and 2016 (both 49%). The level in 2017 (45%) was the same as in 2012. Gambling participation rates excluding National Lottery fluctuated over the time period for both men and women.

Despite gambling activities overall, as well as National Lottery as an individual activity being at the lower end of the scale in 2017, online gambling participation has remained at 12% since 2015, having steadily risen from 7% in 2012. A similar pattern was found in both men and women.

Figure 9E, Table 9.3

Figure 9E
Prevalence of any gambling activity in the last 12 months, 2012 to 2017
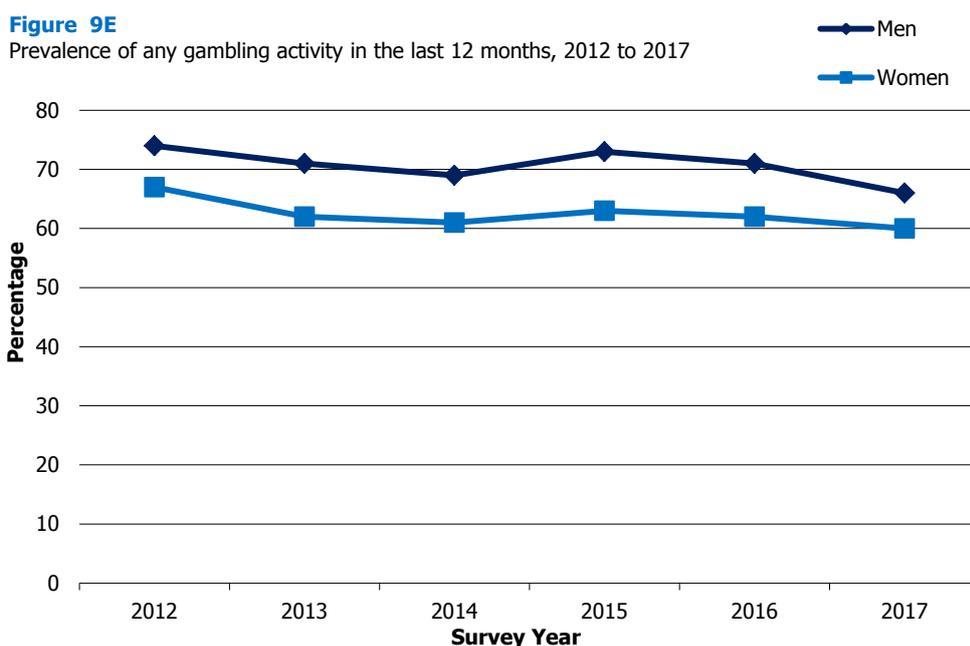
9.4   PROBLEM GAMBLING

9.4.1   DSM-IV and PGSI scores in the last year, 2016-2017 combined, by age and sex

Based on DSM-IV scoring, 0.8% of all adults in 2016-2017 (combined) were identified as problem gamblers. Men were significantly more likely to be problem gamblers than women (1.4%and 0.2% of women respectively). Based on PGSI scoring 0.5% of all adults had a score which indicated that they were a problem gambler. Similarly to the DSM-IV scoring, the rates for PGSI were significantly higher for men (1.0%) than women (0.1%).

Prevalence of problem gambling also varied significantly by age. According to the DSM-IV scores problem gambling increased from 0.8% among those aged 16-24 to the highest rates of 1.6% and 1.5% among those aged 25-34 and 35-44 respectively before declining to 0.6% among those aged 45-54, 0.4% for those aged 55-64 and further still to 0.1% among those aged 65 and over. Due to the low prevalence of problem gambling among women, this pattern is largely driven by

men (although problem gambling was evident for women in the same age groups as the highest prevalence was observed among men, ages 25-44).

From PGSI scoring, problem gambling was also significantly associated with age. Adults aged 16-54 were more likely to be problem gamblers than those aged 55 and over (0.6-0.8% compared with 0.0-0.4%). Similarly to the pattern identified for DSM-IV scoring, the pattern by age for PGSI scores was driven mainly by men.

Using PGSI scoring, in 2016 to 2017 combined, 2.5% of adults were low risk gamblers and 1.0% moderate risk gamblers. Men were more likely than women to be low or moderate risk gamblers (4.2% and 1.8% respectively for men compared with 0.9% and 0.3% respectively for women). Moderate and low risk gambling also varied significantly with age. Prevalence peaked for both moderate and low risk gambling for the 25-34 and 35-44 age groups (moderate risk: 2.3% and 2.2% respectively, low risk: 4.0% and 3.9% respectively) and declined gradually with age with the lowest prevalence observed among those aged 65 and over. **Table 9.4**

9.4.2 DSM-IV and PGSI scores in the last year, 2016-2017 combined, by area deprivation

Based on DSM-IV scores, there was a significant difference in problem gambling prevalence between those living in the most deprived areas (1.5%) and those living in the least deprived areas (0.5%). However the pattern across the deprivation quintiles was not clear with prevalence lowest among those in the second most deprived quintile (0.3%). This pattern was largely driven by men due to the lower prevalence of problem gambling among women.

Similarly PGSI scores which indicate problem gambling differed significantly between those living in the most deprived areas (1.0%) and the least deprived areas (0.2%). A similar pattern was observed for low risk and moderate risk gambling prevalence which was significantly higher among those living in the most deprived areas compared with the least (low risk: 4.5% compared with 2.0%, moderate risk: 1.6% compared with 0.6%). **Table 9.5**

9.4.3 DSM-IV and PGSI scores in the last year, 2014-2017 combined, by GHQ-12

Using DSM-IV scoring, 1.7% of adults with a GHQ-12 score of four or more were identified as problem gamblers, compared to 0.3% of those with a GHQ-12 score of zero. This pattern was largely driven by men (3.4 of men with a GHQ-12 score of four or more were problem gamblers, compared to 0.6% of those with a GHQ-12 score of zero).

Using PGSI scores, 1.2% of adults with a GHQ-12 score of four or more were identified as problem gamblers compared to 0.4% of those with a GHQ-12 score of zero. A similar pattern was found among those

identified as moderate risk gamblers (2.0% of those with a GHQ-12 score of four or more compared to 0.7% of those with a GHQ-12 score of zero). There was no significant difference in prevalence of low risk gambling among those with a GHQ-12 score of four or more and 0. However there was a significant difference between those with a score of 0 and a score of 1-3 (2.2% and 3.3% respectively).

Similar patterns were found for both men and women.   **Table 9.6**

9.4.4   DSM-IV and PGSI scores in the last year, 2014-2017 combined, by alcohol consumption

Problem gambling prevalence using the DSM-IV scale was marginally significantly associated with alcohol consumption with 0.3% of non-drinkers identified as problem gamblers compared with 1% of hazardous or harmful drinkers. However the differences in problem gambling prevalence using PGSI scores by alcohol consumption were not statistically significant.

Hazardous / harmful drinkers were more likely than non-drinkers to be identified as moderate risk gamblers by PGSI scores (2.4% compared to 0.8%) as well as low risk gamblers using PGSI scores (3.9% compared to 2.4%).   **Table 9.7**

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[23] Some researchers have recommended that different (lower) thresholds should be used when identifying problem gamblers using the PGSI. However, these recommendations have not been universally accepted and are not currently endorsed by the original developers of the PGSI instrument. Therefore, this chapter uses the thresholds and categorisation recommended by the original developers and replicates the methods used in the BGPS, also allowing comparisons to be made.

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Table list

Table 9.1 Gambling activities in the last 12 months, 2017, by age and sex

Aged 16 and over   *2017*

Activity money spent on	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
National Lottery	20	44	56	69	53	44	39	48
Scratchcards	30	37	33	22	12	8	5	23
Other lotteries	5	16	16	17	20	16	16	15
Football pools	9	10	10	8	3	3	3	7
Bingo (not online)	7	6	2	1	2	2	2	3
Slot machines	14	19	11	7	6	3	1	10
Machines in a bookmakers	11	13	5	5	2	1	0	6
Casino table games (not online)	13	13	6	2	3	2	1	6
Poker played in pubs or clubs	7	2	3	1	-	-	-	2
Online gambling on slots, casino or bingo games	8	10	7	0	1	2	-	4
Online betting with a bookmaker	24	24	29	16	11	3	1	17
Betting exchange	6	2	2	0	1	-	-	2
Horse races (not online)	12	15	17	13	11	10	8	13
Dog races (not online)	1	2	3	5	2	2	3	3
Sports events (not online)	20	18	17	13	10	5	3	13
Other events or sports (not online)	4	5	3	6	2	2	3	4
Spread-betting	1	2	2	1	0	-	-	1
Private betting	13	10	9	5	2	1	1	6
Any other gambling	7	2	1	1	3	1	2	2
Any gambling activity	*53*	*73*	*73*	*76*	*66*	*58*	*51*	*66*
Any gambling (excluding National Lottery only)	*50*	*66*	*61*	*49*	*47*	*33*	*27*	*50*
Any online gambling (excludes National Lottery)	*25*	*27*	*32*	*16*	*11*	*4*	*1*	*18*

Continued…

Table 9.1 - Continued

Activity money spent on	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Women								
National Lottery	25	39	52	55	51	43	26	43
Scratchcards	27	33	26	19	16	11	5	20
Other lotteries	10	16	19	23	17	22	15	18
Football pools	4	3	1	1	0	1	1	1
Bingo (not online)	8	10	11	10	8	10	7	9
Slot machines	6	7	7	4	1	2	1	4
Machines in a bookmakers	2	3	1	0	0	0	-	1
Casino table games (not online)	4	3	2	2	1	1	1	2
Poker played in pubs or clubs	-	-	-	-	-	-	-	-
Online gambling on slots, casino or bingo games	1	6	3	3	2	2	1	3
Online betting with a bookmaker	8	10	6	2	1	0	-	4
Betting exchange	-	1	0	-	-	-	-	0
Horse races (not online)	11	12	9	10	9	3	2	8
Dog races (not online)	1	-	-	1	0	-	-	0
Sports events (not online)	5	4	3	1	-	0	-	2
Other events or sports (not online)	1	-	1	1	1	-	-	1
Spread-betting	-	-	-	-	-	-	-	-
Private betting	2	-	2	1	-	-	-	1
Any other gambling	-	0	-	1	0	2	0	1
Any gambling activity	*50*	*60*	*66*	*69*	*61*	*62*	*39*	*60*
Any gambling (excluding National Lottery only)	*42*	*51*	*45*	*46*	*36*	*37*	*23*	*41*
Any online gambling (excludes National Lottery)	*8*	*13*	*9*	*5*	*3*	*2*	*1*	*6*

Table 9.1 - *Continued*

Activity money spent on	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All Adults								
National Lottery	22	42	54	62	52	44	32	46
Scratchcards	29	35	30	20	14	9	5	22
Other lotteries	8	16	17	20	19	19	15	17
Football pools	7	7	5	4	1	2	2	4
Bingo (not online)	8	8	6	6	5	6	5	6
Slot machines	10	13	9	5	4	3	1	7
Machines in a bookmakers	7	8	3	3	1	0	0	3
Casino table games (not online)	9	8	4	2	2	1	1	4
Poker played in pubs or clubs	3	1	1	1	-	-	-	1
Online gambling on slots, casino or bingo games	5	8	5	1	1	2	0	3
Online betting with a bookmaker	16	17	16	9	6	2	1	10
Betting exchange	3	1	1	0	1	-	-	1
Horse races (not online)	12	13	13	12	10	6	5	11
Dog races (not online)	1	1	2	3	1	1	1	1
Sports events (not online)	13	11	9	7	5	3	1	7
Other events or sports (not online)	2	2	2	4	1	1	1	2
Spread-betting	1	1	1	0	0	-	-	0
Private betting	8	5	5	3	1	1	1	3
Any other gambling	4	1	0	1	2	1	1	1
Any gambling activity	*51*	*66*	*70*	*73*	*64*	*60*	*44*	*63*
Any gambling (excluding National Lottery only)	*46*	*58*	*53*	*47*	*42*	*35*	*25*	*45*
Any online gambling (excludes National Lottery)	*17*	*20*	*20*	*10*	*7*	*3*	*1*	*12*

Continued…

Table 9.1 - Continued

Aged 16 and over   *2017*

Activity money spent on	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted)[a]:								
Men	*223*	*264*	*223*	*286*	*249*	*189*	*116*	*1549*
Women	*200*	*270*	*254*	*303*	*249*	*217*	*157*	*1650*
All adults	*423*	*534*	*477*	*589*	*498*	*406*	*273*	*3199*
Bases (unweighted)[a]:								
Men	*121*	*197*	*169*	*213*	*290*	*242*	*151*	*1383*
Women	*137*	*258*	*289*	*319*	*325*	*307*	*180*	*1815*
All adults	*258*	*455*	*458*	*532*	*615*	*549*	*331*	*3198*

a Bases shown are for any form of gambling. Bases for individual activities vary

Table 9.2 Number of different gambling activities in the last 12 months, 2017, by age and sex

Aged 16 and over   *2017*

Number of different gambling activities	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
0	47	27	27	24	34	42	49	34
1	13	21	20	32	29	37	32	26
2	12	14	17	18	18	10	11	15
3	7	12	9	9	11	6	3	9
4 or more	21	26	28	17	9	5	5	17
Mean number of activities	2.1	2.5	2.4	1.9	1.4	1.0	0.9	1.8
SE of mean	0.39	0.22	0.21	0.18	0.10	0.10	0.11	0.09
Women								
0	50	40	34	31	39	38	61	40
1	22	23	29	33	31	38	23	29
2	11	15	15	21	17	15	10	16
3	6	11	11	11	8	6	4	9
4 or more	11	11	10	5	5	3	2	7
Mean number of activities	1.2	1.5	1.4	1.3	1.1	1.0	0.6	1.2
SE of mean	0.15	0.14	0.10	0.09	0.07	0.07	0.07	0.04
All adults								
0	49	34	30	27	36	40	56	37
1	17	22	25	32	30	37	27	27
2	12	15	16	19	18	13	11	15
3	6	11	10	10	9	6	4	9
4 or more	16	18	18	11	7	4	3	12
Mean number of activities	1.6	2.0	1.9	1.6	1.3	1.0	0.7	1.5
SE of mean	0.25	0.14	0.11	0.10	0.07	0.06	0.07	0.05

Continued…

Table 9.2 - Continued

Number of different gambling activities	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	*223*	*264*	*223*	*286*	*249*	*189*	*116*	*1549*
Women	*200*	*270*	*254*	*303*	*249*	*217*	*157*	*1650*
All adults	*423*	*534*	*477*	*589*	*498*	*406*	*273*	*3199*
Bases (unweighted):								
Men	*121*	*197*	*169*	*213*	*290*	*242*	*151*	*1383*
Women	*137*	*258*	*289*	*319*	*325*	*307*	*180*	*1815*
All adults	*258*	*455*	*458*	*532*	*615*	*549*	*331*	*3198*

Table 9.3 Gambling activities in the last 12 months, 2012 to 2017

Aged 16 and over   *2012 - 2017*

Activity money spent on	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%
Men						
National Lottery	59	57	54	56	56	48
Scratchcards	18	19	21	24	24	23
Other lotteries	15	15	14	19	19	15
Football pools	9	7	10	10	9	7
Bingo (not online)	3	3	2	3	4	3
Slot machines	12	10	11	14	12	10
Machines in a bookmakers	6	6	6	9	6	6
Casino table games (not online)	7	6	5	7	5	6
Poker played in pubs or clubs	3	3	2	2	2	2
Online gambling on slots, casino or bingo games	4	5	5	7	5	4
Online betting with a bookmaker	10	11	14	16	16	17
Betting exchange	2	2	2	2	2	2
Horse races (not online)	14	14	14	16	14	13
Dog races (not online)	5	3	4	4	3	3
Sports events (not online)	12	12	15	15	13	13
Other events or sports (not online)	3	2	4	5	4	4
Spread-betting	1	1	1	1	1	1
Private betting	7	8	6	8	5	6
Any other gambling	3	4	3	3	2	2
Any gambling activity	*74*	*71*	*69*	*73*	*71*	*66*
Any gambling (excluding National Lottery only)	*50*	*48*	*50*	*54*	*53*	*50*
Any online gambling (excludes National Lottery)	*12*	*13*	*16*	*19*	*19*	*18*

Continued…

Table 9.3 - Continued

Activity money spent on	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%
Women						
National Lottery	57	49	48	51	47	43
Scratchcards	19	19	20	25	23	20
Other lotteries	15	15	15	18	17	18
Football pools	1	2	2	2	2	1
Bingo (not online)	10	8	7	11	10	9
Slot machines	4	3	4	5	5	4
Machines in a bookmakers	1	1	1	1	1	1
Casino table games (not online)	2	2	2	2	2	2
Poker played in pubs or clubs	0	0	0	0	0	-
Online gambling on slots, casino or bingo games	2	2	2	3	3	3
Online betting with a bookmaker	2	2	3	3	4	4
Betting exchange	0	0	0	0	0	0
Horse races (not online)	7	7	7	9	9	8
Dog races (not online)	0	0	0	1	1	0
Sports events (not online)	2	2	2	2	2	2
Other events or sports (not online)	0	0	0	1	0	1
Spread-betting	0	0	0	0	0	-
Private betting	1	1	2	2	2	1
Any other gambling	1	1	1	0	0	1
Any gambling activity	*67*	*62*	*61*	*63*	*62*	*60*
Any gambling (excluding National Lottery only)	*41*	*40*	*40*	*45*	*45*	*41*
Any online gambling (excludes National Lottery)	*4*	*4*	*5*	*6*	*6*	*6*

Table 9.3 - Continued

Activity money spent on	2012	2013	2014	2015	2016	2017
	%	%	%	%	%	%
All adults						
National Lottery	58	53	51	53	51	46
Scratchcards	18	19	21	25	24	22
Other lotteries	15	15	15	18	18	17
Football pools	5	4	6	6	5	4
Bingo (not online)	7	5	5	7	7	6
Slot machines	8	6	7	9	8	7
Machines in a bookmakers	3	3	4	5	4	3
Casino table games (not online)	4	4	3	5	3	4
Poker played in pubs or clubs	1	1	1	1	1	1
Online gambling on slots, casino or bingo games	3	4	4	5	4	3
Online betting with a bookmaker	6	6	8	10	10	10
Betting exchange	1	1	1	1	1	1
Horse races (not online)	10	10	11	12	11	11
Dog races (not online)	2	1	2	2	2	1
Sports events (not online)	7	6	8	8	7	7
Other events or sports (not online)	2	1	2	2	2	2
Spread-betting	1	1	0	1	1	0
Private betting	4	4	4	5	3	3
Any other gambling	2	2	2	2	1	1
Any gambling activity	*70*	*66*	*65*	*68*	*66*	*63*
Any gambling (excluding National Lottery only)	*45*	*44*	*44*	*49*	*49*	*45*
Any online gambling (excludes National Lottery)	*7*	*8*	*10*	*12*	*12*	*12*

Continued…

Table 9.3 - Continued

Activity money spent on	2012	2013	2014	2015	2016	2017
Bases (weighted)[a]:						
Men	*2045*	*2088*	*1982*	*2145*	*1863*	*1549*
Women	*2259*	*2323*	*2181*	*2342*	*2003*	*1650*
All adults	*4304*	*4411*	*4163*	*4487*	*3866*	*3199*
Bases (unweighted)[a]:						
Men	*1893*	*1912*	*1828*	*1987*	*1709*	*1383*
Women	*2427*	*2531*	*2346*	*2462*	*2177*	*1815*
All adults	*4320*	*4443*	*4174*	*4449*	*3886*	*3198*

a Bases shown are for any form of gambling. Bases for individual activities vary

Table 9.4 DSM-IV and PGSI scores for gambling in the last year, 2016/2017 combined, by age and sex

Aged 16 and over   *2016/2017 combined*

DSM-IV score / PGSI score	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
DSM-IV scores								
Non problem gambler	98.4	97.4	97.6	98.8	99.2	99.8	99.7	98.6
Problem gambler 3 and above	1.6	2.6	2.4	1.2	0.8	0.2	0.3	1.4
PGSI scores								
Non problem gambler/non gambler	91.4	88.2	87.8	95.1	95.5	98.2	98.8	92.9
Low risk gambler	5.7	6.7	7.0	2.9	2.9	0.9	0.6	4.2
Moderate risk gambler	1.5	4.1	3.9	0.3	0.8	0.9	0.4	1.8
Problem gambler	1.4	1.0	1.3	1.7	0.8	-	0.3	1.0
Women								
DSM-IV scores								
Non problem gambler	100.0	99.5	99.3	100.0	100.0	100.0	100.0	99.8
Problem gambler 3 and above	-	0.5	0.7	-	-	-	-	0.2
PGSI scores								
Non problem gambler/non gambler	98.2	98.0	98.5	98.1	99.5	100.0	99.0	98.7
Low risk gambler	1.8	1.3	0.7	1.3	0.3	-	1.0	0.9
Moderate risk gambler	-	0.5	0.5	0.6	0.2	-	-	0.3
Problem gambler	-	0.2	0.3	-	-	-	-	0.1

Continued…

Table 9.4 - *Continued*

DSM-IV score / PGSI score	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
DSM-IV scores								
Non problem gambler	99.2	98.4	98.5	99.4	99.6	99.9	99.9	99.2
Problem gambler 3 and above	0.8	1.6	1.5	0.6	0.4	0.1	0.1	0.8
PGSI scores								
Non problem gambler/non gambler	94.7	93.1	93.2	96.7	97.6	99.2	98.9	95.9
Low risk gambler	3.8	4.0	3.9	2.0	1.6	0.4	0.8	2.5
Moderate risk gambler	0.8	2.3	2.2	0.5	0.5	0.4	0.2	1.0
Problem gambler	0.7	0.6	0.8	0.8	0.4	-	0.1	0.5
Bases (weighted):								
Men DSM score	*472*	*551*	*496*	*561*	*493*	*373*	*237*	*3184*
Men PGSI score	*472*	*543*	*495*	*557*	*491*	*370*	*236*	*3164*
Women DSM score	*438*	*552*	*504*	*615*	*517*	*426*	*321*	*3373*
Women PGSI score	*437*	*550*	*499*	*613*	*511*	*416*	*319*	*3344*
All adults DSM score	*911*	*1103*	*1000*	*1176*	*1010*	*799*	*558*	*6557*
All adults PGSI score	*909*	*1093*	*994*	*1169*	*1002*	*786*	*554*	*6508*
Bases (unweighted):								
Men DSM score	*272*	*381*	*398*	*473*	*556*	*490*	*302*	*2872*
Men PGSI score	*272*	*377*	*397*	*470*	*552*	*485*	*300*	*2853*
Women DSM score	*305*	*523*	*556*	*658*	*657*	*601*	*380*	*3680*
Women PGSI score	*304*	*522*	*550*	*656*	*648*	*588*	*378*	*3646*
All adults DSM score	*577*	*904*	*954*	*1131*	*1213*	*1091*	*682*	*6552*
All adults PGSI score	*576*	*899*	*947*	*1126*	*1200*	*1073*	*678*	*6499*

Table 9.5 DSM-IV and PGSI scores for gambling in the last year (age-standardised), 2016/2017 combined, by area deprivation and sex

DSM-IV score / PGSI score	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
Men					
DSM-IV scores					
Non problem gambler	99.0	98.8	98.0	99.7	97.1
Problem gambler 3 and above	1.0	1.2	2.0	0.3	2.9
PGSI scores					
Non problem gambler/non gambler	94.9	93.8	93.4	93.9	88.1
Low risk gambler	3.7	3.9	3.6	3.1	7.0
Moderate risk gambler	1.1	1.5	1.6	2.3	3.0
Problem gambler	0.4	0.8	1.4	0.7	1.9
Women					
DSM-IV scores					
Non problem gambler	100.0	99.8	100.0	99.7	99.6
Problem gambler 3 and above	-	0.2	-	0.3	0.4
PGSI scores					
Non problem gambler/non gambler	99.5	99.0	99.1	98.9	96.9
Low risk gambler	0.4	0.6	0.3	0.9	2.5
Moderate risk gambler	0.1	0.2	0.5	0.2	0.5
Problem gambler	-	0.2	-	-	0.2
All adults					
DSM-IV scores					
Non problem gambler	99.5	99.3	99.0	99.7	98.5
Problem gambler 3 and above	0.5	0.7	1.0	0.3	1.5
PGSI scores					
Non problem gambler/non gambler	97.2	96.4	96.4	96.4	92.9
Low risk gambler	2.0	2.3	1.9	2.0	4.5
Moderate risk gambler	0.6	0.8	1.1	1.2	1.6
Problem gambler	0.2	0.5	0.7	0.4	1.0

Table 9.5 - Continued

DSM-IV score / PGSI score	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
Bases (weighted):					
Men DSM score	*713*	*642*	*648*	*614*	*566*
Men PGSI score	*708*	*640*	*641*	*612*	*563*
Women DSM score	*723*	*627*	*696*	*643*	*684*
Women PGSI score	*717*	*620*	*695*	*634*	*678*
All adults DSM score	*1436*	*1269*	*1344*	*1258*	*1250*
All adults PGSI score	*1424*	*1260*	*1336*	*1246*	*1241*
Bases (unweighted):					
Men DSM score	*625*	*663*	*638*	*514*	*432*
Men PGSI score	*620*	*660*	*632*	*511*	*430*
Women DSM score	*757*	*799*	*843*	*658*	*623*
Women PGSI score	*751*	*790*	*842*	*647*	*616*
All adults DSM score	*1382*	*1462*	*1481*	*1172*	*1055*
All adults PGSI score	*1371*	*1450*	*1474*	*1158*	*1046*

Table 9.6 DSM-IV and PGSI scores for gambling in the last year (age-standardised), 2014 to 2017 combined, by GHQ-12 score

Aged 16 and over   *2014 - 2017 combined*

DSM-IV score / PGSI score	GHQ-12 score		
	0	1 - 3	4 or more
	%	%	%
Men			
DSM-IV scores			
Non problem gambler	99.4	98.5	96.6
Problem gambler 3 and above	0.6	1.5	3.4
PGSI scores			
Non problem gambler/non gambler	94.2	88.9	88.8
Low risk gambler	3.9	6.2	4.9
Moderate risk gambler	1.2	3.7	3.8
Problem gambler	0.7	1.2	2.5
Women			
DSM-IV scores			
Non problem gambler	100.0	99.8	99.7
Problem gambler 3 and above	0.0	0.2	0.3
PGSI scores			
Non problem gambler/non gambler	99.3	98.6	97.6
Low risk gambler	0.5	1.0	1.5
Moderate risk gambler	0.1	0.4	0.6
Problem gambler	0.1	0.0	0.2
All adults			
DSM-IV scores			
Non problem gambler	99.7	99.2	98.3
Problem gambler 3 and above	0.3	0.8	1.7
PGSI scores			
Non problem gambler/non gambler	96.7	94.3	93.7
Low risk gambler	2.2	3.3	3.0
Moderate risk gambler	0.7	1.9	2.0
Problem gambler	0.4	0.5	1.2

Continued…

Table 9.6 *- Continued*

DSM-IV score / PGSI score	GHQ-12 score		
	0	1 - 3	4 or more
Bases (weighted):			
Men DSM score	*4494*	*1536*	*1004*
Men PGSI score	*4474*	*1528*	*1002*
Women DSM score	*4340*	*1904*	*1282*
Women PGSI score	*4319*	*1897*	*1273*
All adults DSM score	*8834*	*3440*	*2286*
All adults PGSI score	*8793*	*3424*	*2276*
Bases (unweighted):			
Men DSM score	*4224*	*1365*	*843*
Men PGSI score	*4202*	*1358*	*841*
Women DSM score	*4799*	*1981*	*1329*
Women PGSI score	*4771*	*1971*	*1320*
All adults DSM score	*9023*	*3346*	*2172*
All adults PGSI score	*8973*	*3329*	*2161*

Table 9.7 DSM-IV and PGSI scores for gambling in the last year (age-standardised), 2014 to 2017 combined, by alcohol consumption

Aged 16 and over   *2014 - 2017 combined*

DSM-IV score / PGSI score	Alcohol consumption		
	Non-drinker	Moderate drinker	Hazardous/ Harmful drinker
	%	%	%
Men			
DSM-IV scores			
Non problem gambler	99.4	98.8	98.6
Problem gambler 3 and above	0.6	1.2	1.4
PGSI scores			
Non problem gambler/non gambler	93.9	93.7	90.2
Low risk gambler	4.3	4.0	5.3
Moderate risk gambler	1.2	1.2	3.5
Problem gambler	0.7	1.0	1.0
Women			
DSM-IV scores			
Non problem gambler	99.9	99.9	99.8
Problem gambler 3 and above	0.1	0.1	0.2
PGSI scores			
Non problem gambler/non gambler	98.3	99.0	98.7
Low risk gambler	1.2	0.7	1.1
Moderate risk gambler	0.6	0.3	0.2
Problem gambler	-	0.1	-
All adults			
DSM-IV scores			
Non problem gambler	99.7	99.4	99.0
Problem gambler 3 and above	0.3	0.6	1.0
PGSI scores			
Non problem gambler/non gambler	96.5	96.7	93.0
Low risk gambler	2.4	2.1	3.9
Moderate risk gambler	0.8	0.7	2.4
Problem gambler	0.3	0.5	0.6

Continued…

Table 9.7 - Continued

DSM-IV score / PGSI score	Alcohol consumption		
	Non-drinker	Moderate drinker	Hazardous/ Harmful drinker
Bases (weighted):			
Men DSM score	*651*	*2686*	*1782*
Men PGSI score	*644*	*2676*	*1779*
Women DSM score	*975*	*3604*	*890*
Women PGSI score	*970*	*3577*	*885*
All adults DSM score	*1625*	*6291*	*2672*
All adults PGSI score	*1614*	*6253*	*2664*
Bases (unweighted):			
Men DSM score	*639*	*2450*	*1588*
Men PGSI score	*631*	*2441*	*1583*
Women DSM score	*1079*	*3887*	*947*
Women PGSI score	*1073*	*3856*	*941*
All adults DSM score	*1718*	*6337*	*2535*
All adults PGSI score	*1704*	*6297*	*2524*

Appendix A:

Glossary

APPENDIX: GLOSSARY

This glossary explains terms used in the report, other than those fully described in particular chapters.

Age Standardisation	Age standardisation has been used in order to enable groups to be compared after adjusting for the effects of any differences in their age distributions**.**

When different sub-groups are compared in respect of a variable on which age has an important influence, any differences in age distributions between these sub-groups are likely to affect the observed differences in the proportions of interest.
Age standardisation was carried out, using the direct standardisation method. The standard population to which the age distribution of sub-groups was adjusted was the mid-2015 population estimates for Scotland. All age standardisation has been undertaken separately within each sex.

The age-standardised proportion p' was calculated as follows, where p_i is the age specific proportion in age group *i* and N_i is the standard population size in age group *i*:

$$p' = \frac{\sum_i N_i p_i}{\sum_i N_i}$$

Therefore p' can be viewed as a weighted mean of p_i using the weights N_i. Age standardisation was carried out using the age groups: 16-24, 25-34, 35-44, 45-54, 55-64, 65-74 and 75 and over. The variance of the standardised proportion can be estimated by:

$$var(p') = \frac{\sum_i (N_i^2 p_i q_i / n_i)}{(\sum_i N_i)^2}$$

where $q_i = 1 - p_i$.

Anthropometric measurement	See **Body mass index** (BMI)
Arithmetic mean	See **Mean**
AUDIT	The Alcohol Use Disorders Identification Test (AUDIT) is a tool developed by the World Health Organisation used to measure harmful alcohol consumption or dependence. In 2012 it was used on SHeS, replacing the CAGE questionnaire, which was also used to identify prevalence of problem drinking. AUDIT consists

of 10 questions – questions 1-3 are indicators of consumption, questions 4-6 are indicators of alcohol dependency and questions 7-10 are indicators of harmful consumption. A score of 8 or more are taken to be indicative of an alcohol use disorder. Scores 8 to 15 suggest "hazardous" drinking behaviour and scores of 16 to 19 indicate "harmful" behaviour, although neither of these groups tend to be considered in isolation. Due to the (potentially) sensitive nature of the questions, this questionnaire was administered in self-completion format. All participants who drank alcohol more than very occasionally were asked to complete the questions.

Bases   See **Unweighted bases, Weighted bases**

Blood pressure   Systolic (SBP) and diastolic (DBP) blood pressure were measured using a standard method. In adults, high blood pressure is defined as SBP $\geq$140 mmHg or DBP $\geq$90 mmHg or on antihypertensive drugs.

Body mass index   Weight in kg divided by the square of height in metres. Adults (aged 16 and over) can be classified into the following BMI groups:

BMI (kg/m^2)	Description
Less than 18.5	Underweight
18.5 to less than 25	Normal
25 to less than 30	Overweight
30 to less than 40	Obese
40 and above	Morbidly obese

Although the BMI calculation method is the same, there are no fixed BMI cut-off points defining overweight and obesity in children. Instead, overweight and obesity are defined using several other methods including age and sex specific BMI cut-off points or BMI percentiles cut-offs based on reference populations. Children can be classified into the following groups:

Percentile cut-off	Description
At or below 2nd percentile	At risk of underweight
Above 2nd percentile and below 85th percentile	Healthy weight
At or above 85th percentile and below 95th percentile	At risk of overweight
At or above 95th percentile	At risk of obesity

Cardiopulmonary Resuscitation   Cardiopulmonary resuscitation (CPR) is an emergency procedure that combines chest compressions with artificial ventilation in an effort to manually preserve brain function in a person who is in cardiac arrest by keeping blood circulating until attempts are made to restart the heart. .

Cardiovascular Disease	Participants were classified as having cardiovascular disease (CVD) if they reported ever having any of the following conditions diagnosed by a doctor: angina, heart attack, stroke, heart murmur, irregular heart rhythm, 'other heart trouble'. For the purpose of this report, participants were classified as having a particular condition only if they reported that the diagnosis was confirmed by a doctor. No attempt was made to assess these self-reported diagnoses objectively. There is therefore the possibility that some misclassification may have occurred, because some participants may not have remembered (or not remembered correctly) the diagnosis made by their doctor.
Chronic Obstructive Pulmonary Disease (COPD)	COPD is defined by the World Health Organisation (WHO) as 'a pulmonary disease characterised by chronic obstruction lung airflow that interferes with normal breathing and is not fully reversible.' It is associated with symptoms and clinical signs that in the past have been called 'chronic bronchitis' and 'emphysema,' including regular cough (at least three consecutive months of the year) and production of phlegm.
CIS-R	See **Revised Clinical Interview Schedule**
Cotinine	Cotinine is a metabolite of nicotine. It is one of several biological markers that are indicators of smoking. In this survey, it was measured in saliva. It has a half-life in the body of between 16 and 20 hours, which means that it will detect regular smoking (or other tobacco use such as chewing) but may not detect occasional use if the last occasion was several days ago. Anyone with a salivary cotinine level of 12 nanograms per millilitre or more was judged highly likely to be a tobacco user. Saliva samples were collected as part of the biological module.
CPR	See **cardiopulmonary resuscitation**.
Diastolic blood	When measuring blood pressure the diastolic arterial pressure is the lowest pressure at the resting phase of the cardiac cycle. See also **Blood pressure, Systolic blood pressure.**
DSM-IV gambling	The DSM-IV screening instrument was developed for the British Gambling Prevalence Survey (BGPS) series is based on criteria from the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association (DSM-IV).This contains ten diagnostic criteria ranging from chasing losses to committing a crime to fund gambling. The DSM-IV criteria constitute a tool created for diagnosis of pathological gambling by clinicians and was not intended for use as a screening instrument among the general population. As such, there is no 'gold standard' questionnaire version of the

DSM-IV. The screen used within the BGPS series and on SHeS was first developed in 1999 and was subject to a rigorous development and testing process, including cognitive testing and piloting. Each DSM-IV item is assessed on a four point scale, ranging from 'never' to 'very often'. Responses to each item can either be dichotomised to show whether a person meets the criteria or not, or allocated a score and a total score produced. Previous surveys in the BGPS series have used the dichotomous scoring method and it is this method that is presented in this report. A total score between zero and ten is possible.

Among clinicians, a diagnosis of pathological gambling is made if a person meets five out of the ten criteria. When adapting the DSM-IV criteria into a screening instrument for use within a general population survey, many surveys (including the BGPS) have included a further category of 'problem gambler' for those who meet at least three of the DSM-IV criteria. This cut-point has been found to give good discrimination between criterion groups and has provided the closest match to prevalence estimated by alternative screens used in the BGPS series (the SOGs in 1999 and PGSI in 2007).

Electronic cigarettes

Electronic cigarettes or e-cigarettes are battery-powered handheld devices which heat a liquid that delivers a vapour. The vapour is then inhaled by the user, which is known as 'vaping'. E-cigarettes typically consist of a battery, an atomiser and a cartridge containing the liquid. Earlier models, often referred to as 'cigalikes', were designed to closely resemble cigarettes but there is now a wide variety of product types on the market. The liquid is usually flavoured and may not contain nicotine, although in most cases e-cigarettes are used with nicotine. Unlike conventional or traditional cigarettes, they do not contain tobacco and do not involve combustion (i.e. they are not lit). The questions about e-cigarettes were amended in 2016 to include the term 'vaping devices'.

Food insecurity

Food insecurity is 'the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so'[1]. Respondents answered three routed questions on food insecurity asking whether they had *worried about* running out of food, eaten less than they should have or had actually run out of food in the last 12 months.

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[1] Dowler E (2003). Food and Poverty in Britain: Rights and Responsibilities. In: Dowler, E and Jones Finer, C (Eds). *Welfare of Food: Rights and Responsibilities in a Changing World*. Oxford: Wiley-Blackwell; 140-159.

Frankfort plane   The Frankfort Plane is an imaginary line passing through the external ear canal and across the top of the lower bone of the eye socket, immediately under the eye. Informants' heads are positioned with the Frankfort Plane in a horizontal position when height is measured using a stadiometer as a means of ensuring that, as far as possible, the measurements taken are standardised.

Geometric mean   The geometric mean is a measure of central tendency. It is sometimes preferable to the arithmetic mean, since it takes account of positive skewness in a distribution. An arithmetic mean is calculated by summing the values for all cases and dividing by the number of cases in the set. The geometric mean is instead calculated by multiplying the values for all cases and taking the nth root, where n is the number of cases in the set. For example, a dataset with two cases would use the square root, for three cases the cube root would be used, and so on. The geometric mean of 2 and 10 is 4.5 (2x10=20, $\sqrt{20}$=4.5). Geometric means can only be calculated for positive numbers so zero values need to be handled before geometric means are calculated. See also **Mean**.

GHQ12   The General Health Questionnaire (GHQ12) is a scale designed to detect possible psychiatric morbidity in the general population. It was administered to informants aged 13 and above. The questionnaire contains 12 questions about the informant's general level of happiness, depression, anxiety and sleep disturbance over the past four weeks. Responses to these items are scored, with one point given each time a particular feeling or type of behaviour was reported to have been experienced 'more than usual' or 'much more than usual' over the past few weeks. These scores are combined to create an overall score of between zero and twelve. A score of four or more (referred to as a 'high' GHQ12 score) has been used in this report to indicate the presence of a possible psychiatric disorder.

Reference: Goldberg D, Williams PA. *User's Guide to the General Health Questionnaire.* NFER-NELSON, 1988.

Health risk category   Health risk category is derived from BMI and waist circumference. BMI is derived from height and weight data collected in the main interview and waist circumference measurements are collected in the biological module. These measures are used in combination to estimate the proportion of the adults who fall into each of the risk categories listed in the table below.

BMI Classification	'High' WC Men WC 94-102cm Women WC 80-88cm	'Very high' WC Men WC >102cm Women WC >88cm
Normal weight (BMI 18.5 - <25(kg/m^2))	-	-
Overweight (BMI 25 - <30(kg/m^2))	Increased	High
Obese		
I - Mild (BMI 30 - <35(kg/m^2))	High	Very high
II - Moderate (BMI 35 - <40(kg/m^2))	Very high	Very high
III - Extreme (BMI 40+(kg/m^2))	Extremely high	Extremely high

Reference: Scottish Intercollegiate Guidelines Network Management of Obesity – A National Clinical Guideline. SIGN guideline no. 115. Edinburgh: SIGN, 2010.

High blood pressure	See **Blood pressure**
Household	A household was defined as one person or a group of people who have the accommodation as their only or main residence and who either share at least one meal a day or share the living accommodation.
Household Reference Person	The household reference person (HRP) is defined as the householder (a person in whose name the property is owned or rented) with the highest income. If there is more than one householder and they have equal income, then the household reference person is the oldest.
Hypertension	See **Blood pressure**
Ischaemic heart disease	Ischaemic heart disease (IHD) is also known as coronary heart disease. Participants were classified as having IHD if they reported ever having angina, a heart attack or heart failure diagnosed by a doctor.
Long-term conditions & limiting long-term conditions	Long-term conditions were defined as a physical or mental health condition or illness lasting, or expected to last 12 months or more. The wording of this question changed in 2012 and is now aligned with the harmonised questions for all large Scottish Government surveys. Long-term conditions were coded into categories defined in the International Classification of Diseases (ICD), but it should be

noted that the ICD is used mostly to classify conditions according to the cause, whereas SHeS classifies according to the reported symptoms. A long-term condition was defined as limiting if the respondent reported that it limited their activities in any way.

Mean Most means in this report are **Arithmetic means** (the sum of the values for cases divided by the number of cases).

Median The value of a distribution which divides it into two equal parts such that half the cases have values below the median and half the cases have values above the median.

Morbid obesity See **Body mass index.**

NHS Health Board The National Health Service (NHS) in Scotland is divided up into 14 geographically-based local NHS Boards and a number of National Special Health Boards. Health Boards in this report refers to the 14 local NHS Boards. (See Volume 2: Appendix B)

Obesity See **Body mass index**

Overweight See **Body mass index**

Percentile The value of a distribution which partitions the cases into groups of a specified size. For example, the 20th percentile is the value of the distribution where 20 percent of the cases have values below the 20th percentile and 80 percent have values above it. The 50th percentile is the median.

p value A p value is the probability of the observed result occurring due to chance alone. A p value of less than 5% is conventionally taken to indicate a statistically significant result ($p < 0.05$). It should be noted that the p value is dependent on the sample size, so that with large samples differences or associations which are very small may still be statistically significant. Results should therefore be assessed on the magnitude of the differences or associations as well as on the p value itself. The p values given in this report take into account the clustered sampling design of the survey. See also **Significance testing**.

Problem Gambling Severity Index (PGSI) The PGSI, developed by Ferris and Wynne, was specifically designed for use among the general population rather than within a clinical context. It was developed, tested and validated within a general population survey of over 3,000 Canadian residents. The index consists of nine items ranging from chasing losses to gambling causing health problems to feeling guilty about gambling. Each item is assessed on a four-point scale: never, sometimes, most of the time, almost always. Responses to each item are given the following scores: never =

zero; sometimes = one; most of the time = two; almost always = three. When scores to each item are summed, a total score ranging from zero to 27 is possible. A PGSI score of eight or more represents a problem gambler. This is the threshold recommended by the developers of the PGSI and the threshold used in this report. The PGSI was also developed to give further information on sub-threshold problem gamblers. PGSI scores between three and seven are indicative of 'moderate risk' gambling and a score of one or two is indicative of 'low risk' gambling.

Quintile   Quintiles are percentiles which divide a distribution into fifths, i.e., the 20th, 40th, 60th and 80th percentiles.

Raised waist circumference   See **Waist circumference**

Revised Clinical Interview Schedule   Details on symptoms of depression and anxiety are collected via a standardised instrument, the Revised Clinical Interview Schedule (CIS-R)[2]. The CIS-R is a well-established tool for measuring the prevalence of mental disorders. The complete CIS-R comprises 14 sections, each covering a type of mental health symptom and asks about presence of symptoms in the week preceding the interview. Prevalence of two of these mental illnesses - depression and anxiety - were introduced to the survey in 2008. Given the potentially sensitive nature of these topics, they were included in the nurse interview part of the survey prior to 2012, and in the computer-assisted self-completion part of the biological module from 2012 to 2015.

Questions on depression cover a range of symptoms, including feelings of being sad, miserable or depressed, and taking less of an interest and getting less enjoyment out of things than usual. Questions on anxiety cover feelings of anxiety, nervousness and tension, as well as phobias, and the symptoms associated with these.

Scottish Index of Multiple Deprivation   The Scottish Index of Multiple Deprivation (SIMD) is the Scottish Government's official measure of area based multiple deprivation. It is based on 37 indicators across 7 individual domains of current income, employment, housing, health, education, skills and training and geographic access to services and telecommunications. SIMD is calculated at data zone level, enabling small pockets of deprivation to be identified. The data zones are ranked from most deprived (1) to least deprived (6505) on the overall SIMD index. The result is a

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[2] Lewis, G. & Pelosi, A. J. (1990). Manual of the Revised Clinical Interview Schedule CIS–R. London: Institute of Psychiatry; Lewis G, Pelosi AJ, Araya R, Dunn G. (1992) Measuring psychiatric disorder in the community; a standardised assessment for use by lay interviewers. *Psychological Medicine*; 22, 465-486.

comprehensive picture of relative area deprivation across Scotland.

This report uses the SIMD 2016.
http://www.scotland.gov.uk/Topics/Statistics/SIMD

Significance testing   Where differences in relation to a particular outcome between two subgroups, such as men and women, are highlighted in volume 1 of this report, the differences can be considered statistically significant, unless otherwise stated.

Statistical significance is calculated using logistic regression to provide a **p-value** based on a two-tailed significance test. One tailed-tests are used when the difference can only be in one direction. Two-tailed tests should always be used when the difference can theoretically be in either direction. For example, even though previous research has shown a higher prevalence of hazardous levels of alcohol consumption among men than among women, and we may expect this to be true in the most recent survey, a two-tailed test is used to confirm the difference.

Social capital   Social capital encompasses aspects of social connectedness via friend and kinship networks, trust in others, the ability to draw on support from others, as well as a sense of connectedness to places through involvement in the local community and the ability to influence local decisions.

Standard deviation   The standard deviation is a measure of the extent to which the values within a set of data are dispersed from, or close to, the mean value. In a normally distributed set of data 68% of the cases will lie within one standard deviation of the mean, 95% within two standard deviations and 99% will be within 3 standard deviations. For example, for a mean value of 50 with a standard deviation of 5, 95% of values will lie within the range 40-60.

Standard error   The standard error is a variance estimate that measures the amount of uncertainty (as a result of sampling error) associated with a survey statistic. All data presented in this report in the form of means are presented with their associated standard errors (with the exception of the WEMWBS scores which are also presented with their standard deviations). Confidence intervals are calculated from the standard error; therefore the larger the standard error, the wider the confidence interval will be.

Standard error of the mean   See **Standard Error**

Standardisation   In this report, standardisation refers to standardisation (or 'adjustment') by age (see **Age standardisation**).

Systolic blood Pressure

When measuring blood pressure, the systolic arterial pressure is pressure defined as the peak pressure in the arteries, which occurs near the beginning of the cardiac cycle. See also **Blood pressure, Diastolic blood pressure.**

Unit of alcohol

Alcohol consumption is reported in terms of units of alcohol. A unit of alcohol is 8 gms or 10ml of ethanol (pure alcohol). See Chapter 1 of volume 1 of this Report for a full explanation of how reported volumes of different alcoholic drinks were converted into units.

Unweighted bases

The unweighted bases presented in the report tables provide the number of individuals upon which the data in the table is based. This is the number of people that were interviewed as part of the SHeS and provided a valid answer to the particular question or set of questions. The unweighted bases show the number of people interviewed in various subgroups including gender, age and SIMD.

Waist circumference

Waist circumference is a measure of deposition of abdominal fat. It was measured during the biological module. A raised waist circumference has been defined as more than 102cm in men and more than 88cm in women.

Weighted bases

See also **Unweighted bases**. The weighted bases are adjusted versions of the unweighted bases which involves calculating a weight for each individual so that their representation in the sample reflects their representation in the general population of Scotland living in private households. Categories within the table can be combined by using the weighted bases to calculate weighted averages of the relevant categories.

WEMWBS

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) was developed by researchers at the Universities of Warwick and Edinburgh, with funding provided by NHS Health Scotland, to enable the measurement of mental well-being of adults in the UK. It was adapted from a 40 item scale originally developed in New Zealand, the Affectometer 2[3]. The WEMWBS scale comprises 14 positively worded statements with a five item scale ranging from '1 - None of the time' to '5 - All of the time'. The lowest score possible is therefore 14 and the highest is 70. The 14 items are designed to assess positive affect (optimism, cheerfulness, relaxation); and satisfying interpersonal relationships and positive functioning (energy, clear thinking, self-acceptance, personal development, mastery and autonomy).

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[3] Kammann, R. and Flett, R. (1983). *Sourcebook for measuring well-being with Affectometer 2.* Dunedin, New Zealand: Why Not? Foundation.

The briefing paper on the development of WEMWBS is available online from: <http://www.wellscotland.info/guidance/How-to-measure-mental-wellbeing/How-to-start-measuring-mental-wellbeing/The-Warwick-Edinburgh-Mental-Wellbeing-Scale->

A NATIONAL STATISTICS PUBLICATION FOR SCOTLAND

The United Kingdom Statistics Authority has designated the Scottish Health Survey as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be interpreted to mean that the statistics: meet identified user needs; are produced, managed and disseminated to high standards; and are explained well.

Correspondence and enquiries
For enquiries about this publication please contact:
Julie Landsberg
Population Health Team, Health and Social Care Analysis
DG Health and Social Care
Telephone: 0131 244 2368
e-mail: scottishhealthsurvey@gov.scot

For general enquiries about Scottish Government statistics please contact:
Office of the Chief Statistician, Telephone: 0131 244 0442,
e-mail: statistics.enquiries@gov.scot

How to access background or source data

The data collected for the Scottish Health Survey:
☒ are made available via the UK Data Service

☒ may be made available on request, subject to consideration of legal and ethical factors. Please contact scottishhealthsurvey@gov.scot for further information.

Further breakdowns of the data:
☒ are available via the Scottish Health Survey website
http://www.gov.scot/Topics/Statistics/Browse/Health/scottish-health-survey

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Any enquiries regarding this publication should be sent to us at
The Scottish Government
St Andrew's House
Edinburgh
EH1 3DG

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