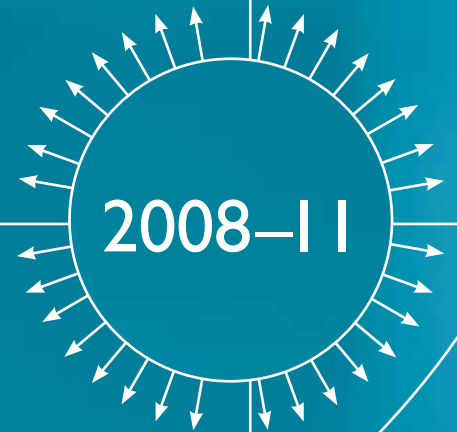diet

sexual health

smoking

ability to influence

physical activity

Knowledge, attitudes and motivations to health

**A module of the
Scottish Health Survey**

alcohol

weight

ScotPHO
Public Health Information for Scotland

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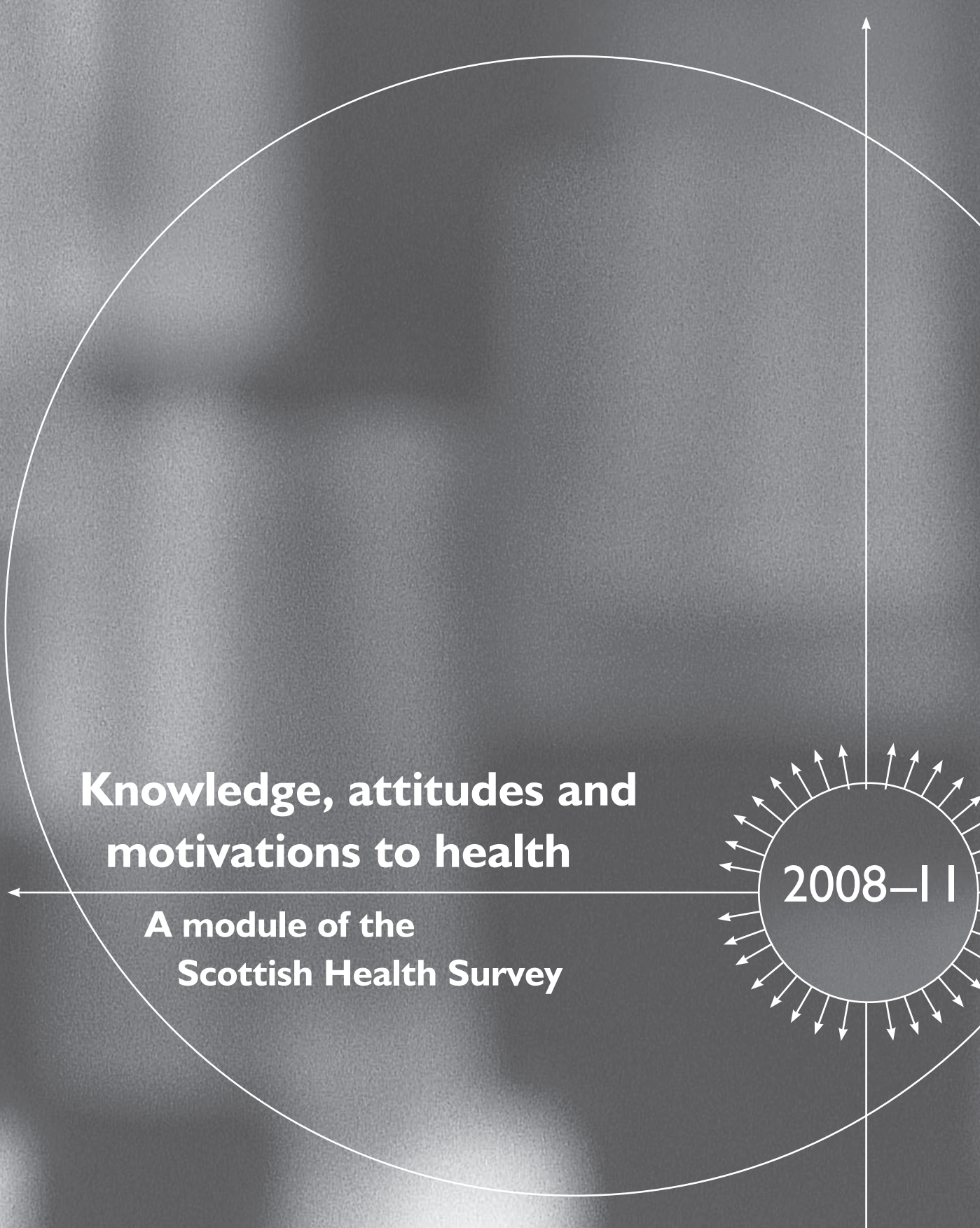Jane Perry, Elaine Tod and Rachel Whalley.

Knowledge, attitudes and motivations to health

**A module of the
Scottish Health Survey**

2008–11

CONTENTS

AUTHORS' ACKNOWLEDGEMENTS

SUMMARY

This summary includes some of the key findings from a module of questions on Knowledge, Attitudes and Motivations to Health (KAM) included in the Scottish Health Survey between 2008 and 2011. This is the first time it has been possible to combine the data collected over the four year period. Unless otherwise stated, the findings in the summary are based on pooled 2008 to 2011 data.

CHAPTER 2: METHODOLOGY

- The KAM module was included in the Scottish Health Survey (SHeS) between 2008 and 2011. The module replaced the Health Education Population Survey (HEPS) conducted in Scotland between 1996 and 2007, on behalf of NHS Health Scotland.
- SHeS is a survey in which all adults (16+) and up to 2 children at each selected household are eligible to be interviewed. One adult in each participating household was selected at random to complete the KAM module.
- A benefit of including the module in the SHeS was that it enabled participants' KAM module answers to be analysed alongside the behavioural data collected in the main SHeS interview, including height and weight measures.
- The samples for HEPS included adults aged 16-74 whereas, in common with the main SHeS interview, adults aged 16 and over were interviewed for the KAM module.
- This report uses data collected in the 2008, 2009, 2010 and 2011 surveys, with most tables reporting figures based on pooled four years data.
- Over the four years (2008 to 2011) 8,424 adults took part in the KAM module. Of these, 7,026 also completed a computer-assisted self-interview (CASI) containing more sensitive questions about sexual behaviour.
- Between 2008 and 2011, the response rates for the main KAM module ranged between 48% and 50%.
- Response to the KAM module among those who participated in the main SHeS interview was lowest among people aged 75 and over.
- The data have been weighted to take account of the overall sample design and to adjust for non-response bias.

CHAPTER 3: INFLUENCING HEALTH BEHAVIOURS

- In 2011, half (51%) of adults in Scotland felt they had 'a great deal' of influence over their own health. Forty-two percent felt they had 'quite a lot' of influence while just 8% thought they had little or no influence at all.
- People aged 25 to 54 were most likely to feel that they had 'a great deal' of control over their health with between 56% to 58% of this age group reporting this.
- Those living in the most deprived areas were three times more likely than those living elsewhere to report that they had little or no influence on their health (13% in SIMD quintile 1 compared with 3% in SIMD quintile 5).
- In 2011, the majority (87%) of adults believed they led a 'very' or 'fairly healthy' life. Just 12% viewed their lifestyle as 'fairly' or 'very unhealthy'.

- Older people were most likely to view their lifestyle as 'very healthy' (20% of 65 to 74 year olds and 23% of those aged 75 or over reported this).
- People living in the most deprived areas were twice as likely as those living in the least deprived areas to view the life they led as 'fairly' or 'very unhealthy' (20% in SIMD quintile 1 compared with 9% in SIMD quintile 5).
- In 2011, eight in ten (78%) adults felt there were steps they could take to make their life healthier. Four percent did not want to make any changes while 3% said it was too difficult for them to make any changes. The most commonly mentioned steps people said they could take were: be more physically active (59%), eat more healthily (48%) and control weight (39%).
- Among those who thought they could improve their health, women were more likely than men to identify controlling weight (43% compared with 34%) and being more physically active (61% compared with 56%) as specific steps they could take. Whereas men were more likely to mention cutting down the amount of alcohol they drank (22% compared with 12%).
- People aged 65 or over were less likely than younger people to identify being more active (51% to 52% compared with 58% to 64% of those aged 16 to 54) or eating more healthily (27% to 31% compared with 40% to 69% of 16 to 64 year olds) as steps they could take to improve their health.

CHAPTER 4: ALCOHOL
- In 2011, more than three-quarters (82%) of adults in Scotland described themselves as occasional, light or moderate drinkers, while just 4% considered themselves to be heavy or quite heavy drinkers.
- Awareness of the concept of measuring alcohol in units was very high with just 4% of adults in 2011 unfamiliar with the practice.
- Awareness of the existence of government advice on maximum daily unit consumption was also high in 2011, with just 3% stating that they did not know there were recommendations.
- Women, older people and those living in more deprived areas were least familiar with the existence of government recommendations on daily unit consumption.
- In 2011, one in six (17%) adults were able to correctly identify the recommended daily maximum number of units for their sex.
- Men were significantly more likely than women to know the recommended daily maximum number of units for their sex (20% compared with 11%). Women were more likely than men to underestimate the maximum number of units the government advised they consume (52% compared with 44%), whereas men were more likely to overestimate the maximum number of units advised (14% compared with 6%).
- Knowledge of the recommended maximum daily units was lowest among those aged 65 or over.
- In 2011, the majority of adults (62%) did not know that the government advise a certain number of alcohol-free days each week. Of those who had heard of the guidance, a fifth were broadly correct, stating either 1-2 or 2-3 days as the number of alcohol-free days advised. The advice is to have at least two alcohol free days per week.
- Knowledge of the number of alcohol-free days advised was highest among women, those aged 45 to 64 and those living in Scotland's less deprived areas.

- In 2011, around one in ten (11%) adults reported that they had taken action to reduce their alcohol intake in the previous 12 months. However, a third of adults (34%) had not taken any steps to reduce their consumption and weren't planning on doing so in the near future yet drank outwith the government's guidelines.
- Knowledge, behaviour and motivation to change behaviour in relation to alcohol consumption have all remained largely unchanged among the adult population in Scotland in the 2008 to 2011 period.

CHAPTER 5: SMOKING
- Most smokers restricted their smoking behaviour when in the presence of non-smoking adults or children.
- When asked what they do when in the presence of non-smoking adults, the majority (91%) of smokers reported altering their behaviour in some way. Sixty-five percent said they would leave the room to smoke, while 14% would remain in the room but refrain from smoking (2011).
- Smokers placed further restrictions on their behaviour when in the presence of children (2011). Just 3% of smokers said they would smoke in a child's presence. Twenty two percent would remain in the room but not smoke, while three-quarters (74%) would leave the room to smoke.
- Male and female smokers' adopted similar behaviours when in the presence both of non-smoking adults and children.
- In 2011, 45% of smokers had taken action to try and cut down or stop smoking in the previous year with one in six smokers managing to sustain a reduction in their smoking levels.
- Just over a quarter (27%) of smokers (in 2011) had made no attempt to cut down or quit smoking and had no plans to do so in the near future.

CHAPTER 6: DIET
- In 2011, 88% of adults in Scotland described the food they ate as 'very' or 'fairly healthy' while 12% viewed their diet as 'fairly' or 'very unhealthy.'
- Nine in ten (89%) adults were aware of the advice to consume at least five portions of fruit or vegetables every day (2011). Six percent thought the advice was to consume fewer portions than this while 4% said they did not know what was advised.
- Men, older people and those living in the most deprived areas in Scotland were least familiar with the five-a-day guideline on fruit and vegetable consumption.
- In 2011, over a third (38%) of adults reported taking some steps to improve their diet in the previous year. However, a similar proportion had not made any positive changes to their diet and did not intend on doing so, yet fell short of the recommended target for daily fruit and vegetable consumption.

CHAPTER 7: PHYSICAL ACTIVITY
- In 2011, more than half of adults (55%) thought that they did sufficient physical activity to keep healthy.
- People who were active at the recommended level were most likely to think that they did enough physical activity to stay healthy (71%). Over a third (36%) of those that did fewer than 30 minutes of moderate or vigorous activity a week thought that they did enough activity to stay healthy.

- In 2011, a quarter (27%) of adults knew how much physical activity the government advised people to do. The majority (44%) underestimated the amount of activity advised.
- Knowledge of the physical activity recommendation increased among adults in Scotland over the period 2008 to 2011 (from 22% to 27%).
- People who met the physical guidelines were most likely to know what amount of activity was recommended but even among this group awareness was still low (27% correctly identified the amount of activity advised).
- Older people and those living in Scotland's most deprived areas were least likely to know what the recommended levels of physical activity were.
- Knowledge of the health benefits of physical activity was lowest amongst older people and people living in more deprived areas.
- In 2011, a third of adults had not taken any steps towards increasing the amount of physical activity they undertook in the previous twelve months, and had no plans to do so in the near future, despite not doing the recommended amount of activity at the time of interview.
- More than a third (37%) reported having taken steps to increase their levels of physical activity in the previous twelve months, more than half of whom had managed to maintain these increased levels.
- Lack of time was cited as the main barrier to undertaking more physical activity (40%). Ill health, injury or disability (19%), and the weather (17%) were also commonly cited barriers.

CHAPTER 8: WEIGHT
- In 2011 27.7 % of adults in Scotland were obese in 2011; yet 76% of those who were obese assessed their weight to be lighter than was actually the case.
- People with a healthy weight were most likely to give an accurate assessment of their weight, with three quarters of this group (77%) describing their weight as 'about right.'
- Women were significantly more likely than men to correctly assess their weight (62% correctly identified the weight category they fell into compared with 49% of men).
- The majority of parents (83%) assessed the weight of their children to be 'about right,' although in 2011 only two thirds of children had a healthy BMI.
- Three-quarters of parents of overweight or obese children incorrectly judged the weight of their children to be 'about right'.
- Nine out of ten adults recognised that being very overweight was a risk factor in developing heart disease (91%) and high blood pressure (88%). Awareness of some other high-profile and prevalent conditions was low with only one in three (34%) aware that very overweight people were at increased risk of developing some cancers. Less than half were aware of the link between obesity and arthritis (46%).
- Knowledge of the health conditions associated with overweight and obesity varied by age and area deprivation, with lower levels of awareness among older people and those living in areas of greatest deprivation.
- In 2011, a quarter of adults (26%) had not taken any steps to control their weight, despite having a BMI outwith the healthy range. A third of adults

(31%) had taken some action to control their weight in the previous 12 months, with half of those that had done so maintaining the action taken.

CHAPTER 9: SEXUAL HEALTH

- More than 8 in 10 adults felt they already knew enough both about how to use a condom and about safer sex to protect themselves from sexually transmitted infections (STIs) (85% and 82% respectively), but fewer (63%) felt they knew enough about where a woman should go if she needed an abortion.

- Men were more likely than women to report that they knew enough about condom use (90% compared with 80%) but slightly less likely to report that they had enough information about where a woman should go for an abortion (64% compared with 61%).

- There was little variation in either the level of knowledge or the demand for information about sexual health among those aged 16 to 54, though both were slightly lower among those aged 55 to 64 and reduced sharply from age 65 onwards.

- Across all age groups, demand for more information about sexual health was low, but it was relatively higher among young people in relation to condom use and protection against STIs. For example, 10% of those aged 16 to 24 wanted more information about protection against STIs compared with only 3% of those aged 35 to 44.

- Most adults in Scotland were aware of at least one setting from which emergency contraception is available, but relatively few (20%) were aware of the full range. GP surgeries were most likely – and Accident and Emergency departments least likely – to be identified as providing such services.

- Women were more likely than men to be aware of the full range of settings in which emergency contraception is available (22% compared with 17%). Awareness was also generally higher among younger age groups and among those living in less deprived areas.

- Among those who felt that a series of statements about condom use applied to them, general awareness and understanding of the role of condoms was high: for example, 96% agreed that it is necessary to use a condom with a new partner. However, only 72% agreed that before stopping condom use, they and their partner would get tested for STIs.

- Women were much more likely than men to indicate that they would stop sexual intercourse if no condoms were available (91% compared with 76% of men) and that both partners should get tested for STIs before stopping condom use (77% compared with 66%). Younger people – and young men in particular – were more likely to indicate that they would take sexual health risks in relation to condom use.

- Around one in five sexually active women (19%) were using a long acting reversible contraceptive (LARC) at time of interview, rising to 29% of those aged 16 to 24. LARC use was higher in areas of greatest deprivation.

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, confidence intervals and standard errors are shown to an appropriate number of decimal places. Standard Error may sometimes be abbreviated to SE for space reasons. Confidence intervals are abbreviated to CIs in the tables.

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 section of the 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.
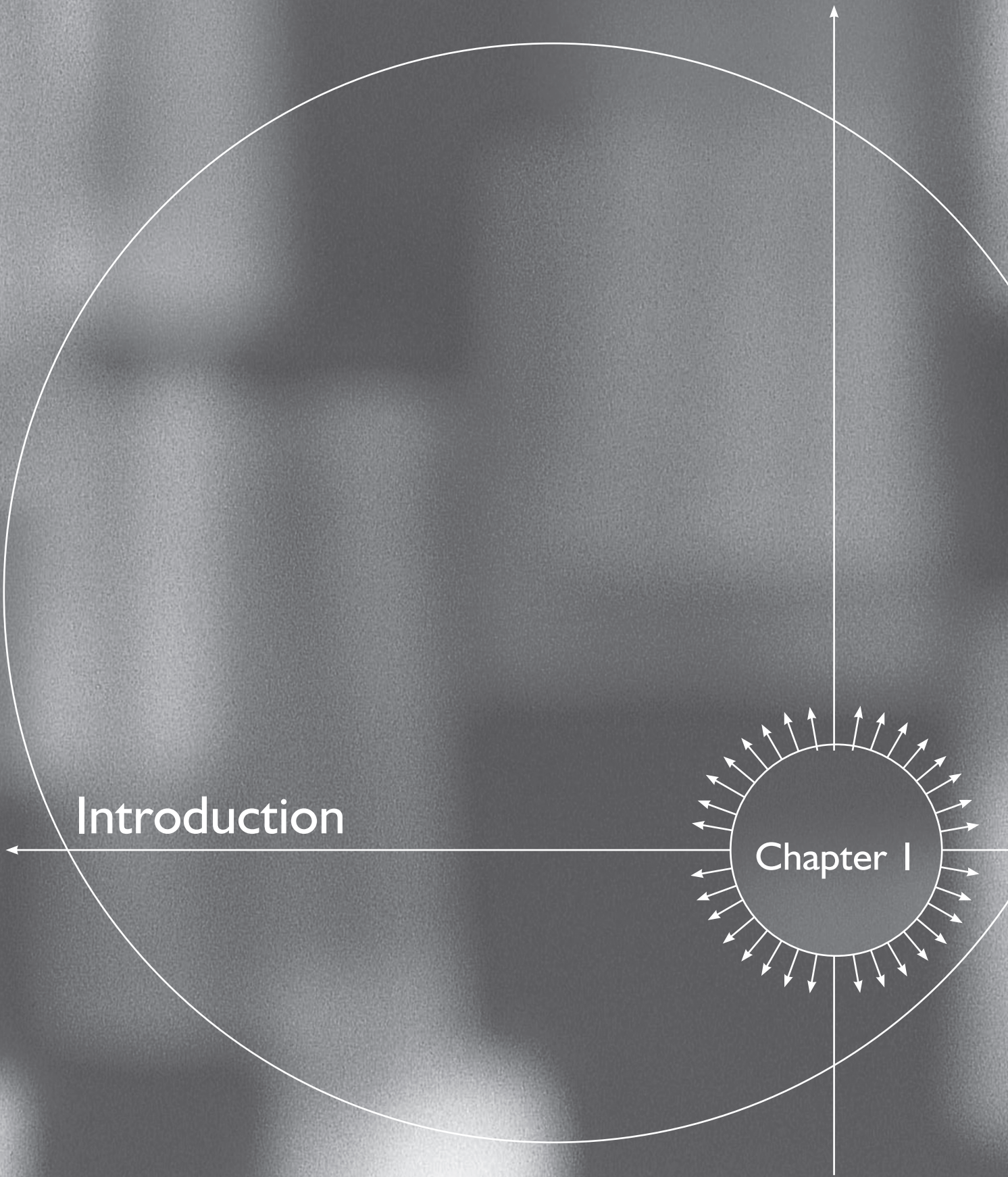
Introduction

Chapter 1

1 INTRODUCTION

Lisa Rutherford

1.1 INTRODUCTION

This report presents findings from the Knowledge, Attitudes and Motivations to Health (KAM) module included within the 2008 to 2011 Scottish Health Survey (SHeS). As detailed in full in Chapter 2, the KAM module was the successor to the Health Education Population Survey (HEPS), which ran in two waves annually between 1996 and 2007[1] and was intended to monitor progress in the process of achieving change in health behaviours through a health education approach. One significant difference between the two studies is that, whereas HEPS was a standalone survey, the KAM module was embedded within SHeS so can draw on a much wider pool of information about health-related behaviours, experiences and characteristics. This greatly expands the possibilities for analysis and for a robust examination of the links between knowledge, attitudes, motivations and actual behaviour.

Chapters 4-8 in this report make use of a well-known theory of behavioural change (the Trans-Theoretical Model – TTM) to try to understand the relationship between knowledge, attitudes, motivations and actual behaviour. The following discussion presents a brief overview of various models in this field, with a particular focus on the TTM. Chapter 3 is about perceptions of lifestyles and ability to influence health more generally, rather than about specific health behaviour change, so the TTM does not apply to these topics. Similarly, Chapter 9 looks at sexual health but does not include questions about behaviour, apart from one question about women's use of long-acting reversible contraception.

1.2 BACKGROUND: THEORIES OF CHANGE AND THE TRANS-THEORETICAL MODEL

As the links between specific behaviours and health outcomes started to be understood, early approaches to health education often focused narrowly on the role of information *per se* as the trigger to behavioural change. This was based on an assumption that if people had the relevant information (for example, that smoking causes lung cancer), they would – as rational beings – alter their actions.

The failure of simple information-based approaches to either predict or affect behaviour change led to a more nuanced understanding of the complexity of health-related behavioural change. Individual and societal level attitudes were seen as key moderators in the change process, and social cognition models and theories of change which focused on knowledge and attitudes as determinants of behavioural change became more prominent. In 2006, the National Institute for Health and Clinical Excellence (NICE) conducted a review of four theoretical models which have had particular prominence within health education/health promotion.[2] The models assessed were the Health Belief Model,[3] the Theory of Reasoned Action,[4] the associated Theory of Planned Behaviour,[5] and the TTM.[6] The TTM is described in more detail below because

it is of particular relevance to the KAM module; there is not space to describe the others in detail.

These models share a common focus on the role of social cognition as a vehicle for behavioural change, but there is wide variation in their conceptualisation of the ways in which individuals might be motivated or caused to change their behaviour.

Of these various approaches to the study and prediction of health related behaviour change, the TTM has assumed particular prominence in recent years. Like other approaches, this assesses an individual's readiness to act on a new behaviour, but it also provides concrete strategies or processes of change to guide the individual through the stages of change to action and maintenance.

The TTM is often referred to as the 'Stages of Change' (SoC) model as it defines the process of behavioural change as falling within six distinct, but linear phases. The appeal of TTM is well summarised in a review of the evidence relating to the SoC model conducted for NHS Health Scotland (then HEBS) which stated that:[7]

> *"[T]he model provided an interdisciplinary, cross-professional account of behaviour change, not limited or restricted to a single disciplinary approach. The model could be applied with equal pragmatism to a consideration of psychoanalysis or cognitive behaviour therapy. One aspect of the broad popular appeal of Stages of Change was its potential applicability in a range of fields and settings."*

The six stages of change are, in order:

1. Pre-contemplation – described as the state in which "people are not intending to take action in the foreseeable future, usually measured as the next six months".
2. Contemplation – the state in which "people are intending to change in the next six months".
3. Preparation – "people are intending to take action in the immediate future, usually measured as the next month".
4. Action – "people have made specific overt modifications in their life styles within the past six months".
5. Maintenance – "people are working to prevent relapse," a stage which is estimated to last "from six months to about five years".
6. Termination – "individuals have zero temptation and 100% self-efficacy... they are sure they will not return to their old unhealthy habit as a way of coping".

The questions in the KAM module can be used to assign people to the first five of the above stages in relation to smoking, drinking, physical activity, diet and weight. However, the extent to which people were at the termination stage was not ascertained, and the maintenance category includes people who have been working to prevent relapse within the past year (the reference period used in the survey), rather than the five year period set out in the SoC. In addition, for the purpose of this report a different final category has been used of 'long term maintenance' which includes people who displayed healthy behaviour for the

topics in question (e.g. were not a smoker, or had a healthy BMI), and did not mention having made any changes in the past year or wanting to make any future change to their health behaviour status.

1.3 CRITICISMS AND LIMITATIONS OF THE TTM

Although the TTM/SoC model has been very popular with health promotion practitioners – in part because it was seen as both accessible and useful as a planning tool for health behaviour interventions – the evidence of its validity in predicting and facilitating behavioural change is actually equivocal. This is particularly the case in relation to the stages of change construct itself, which it is suggested may not represent cognitive realities. Despite some evidence that the model can predict changes in smoking behaviour,[8] the NICE review concluded that:[2]

> *"there is little evidence that stage-based interventions are more effective than non-stage-based interventions."*

A further criticism of the model is that it assumes that behavioural change is both ordered and linear. The NHS Health Scotland review concluded that:[7]

> *"The stage categories are descriptive accounts rather than explanatory devices. This severely limits the predictive capacity of the model."*

There is a strong view that theoretically informed approaches to health-related behavioural change are likely to be more effective. However, although there is some evidence to support the role of theory-based interventions in terms of their ability to predict behaviour change, it remains the case that despite the plethora of research over a 25-30 year period, there is still little understanding of the general and specific predictors of personal, attitudinal, interpersonal, economic and societal factors on health-related behaviour change.[9]

The TTM – and, indeed, other approaches that focus primarily on knowledge, attitudes and motivations – can also be criticised for paying insufficient attention to the social and structural context within which individual health-related decision-making is located. As the following diagram, taken from 'Know, Feel, Do?' suggests,[10] there are also powerful influences on individual behaviour that lie beyond the scope of much conventional health promotion activity. As SHeS collects a wide range of measures of socio-economic status, and includes area level measures such as the Scottish Index of Multiple Deprivation (SIMD), the KAM module can assess the relative contributions of some of these structural determinants alongside its knowledge, attitudes and motivations measures. Though, as 'Know, Feel, Do?' acknowledges, a series of observational studies with different samples each time cannot be used to make definite conclusions about causation.[10]

Further consideration of the limitations of the TTM will be given in Chapter 10 – discussion.

Figure 1 A schematic behaviour change model[10]
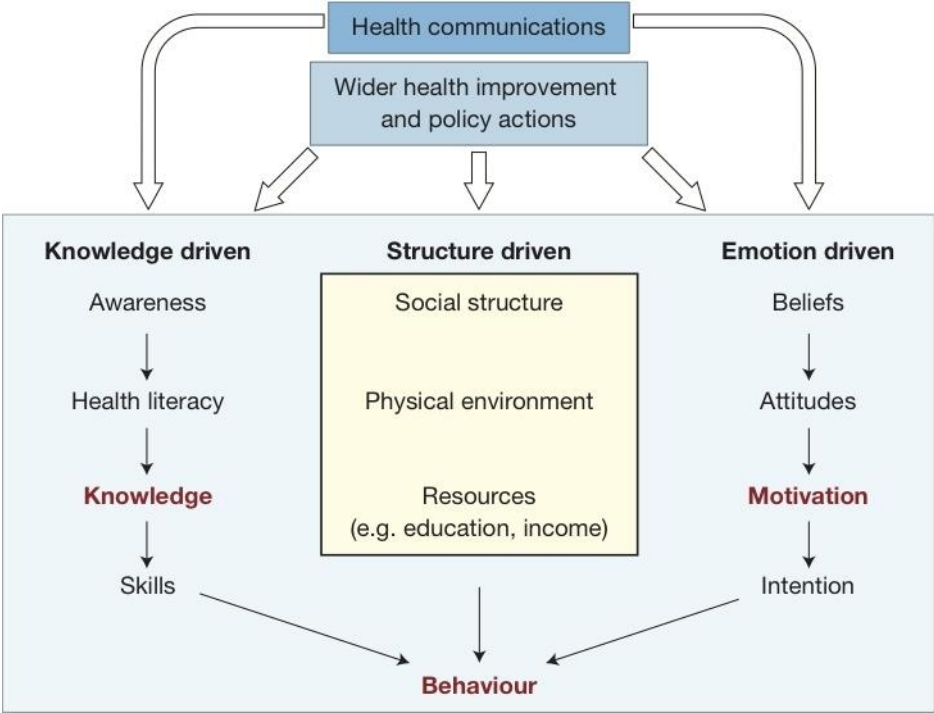
1.4   CONTENT OF THE REPORT

The remaining chapters in this report are as follows:

2. Methods
3. Influencing health behaviours
4. Alcohol
5. Smoking
6. Diet
7. Physical activity
8. Weight
9. Sexual health
10. Discussion

The analysis and reporting conventions broadly follow those used in the main SHeS annual reports.[11] Data for men, women and all adults are presented separately for each topic. Further breakdowns are presented by age group, and by Scottish Index of Multiple Deprivation (SIMD). For most topics analysis is also presented by a health behaviour measure, for example perceptions of alcohol consumption are shown by self-reported consumption in units. Headline figures for 2008, 2009, 2010 and 2011 are presented separately for most topics, however the analysis by sub-groups is largely based on data from the 2008 to 2011 surveys combined. This enables more detailed analysis by age and other sub-groups to be conducted. Chapter 2 includes further details of the survey design – including the transition from HEPS to KAM – and the analysis conducted.

References and notes

[1] With the exception of three waves which were suspended in 1999-2000.

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[8] Spencer, L., Pagell, F., Hallion, M. E., and Adams, T. B. (2002) Applying the transtheoretical model to tobacco cessation and prevention: a review of literature. *American Journal of Health Promotion*, vol. 17, no. 1, pp. 7-71.

[9] Christmas, S., Young, D., Skates, A., Millward, L., Duman, M., and Dawe, I. (2009) *Nine Big Questions about Behaviour Change*. Dept for Transport.

[10] Robinson, M. Gibbs, D. and Gruer, L. (2010) *Know, Feel, Do? Health Behaviour Change in Scotland 1996-2007*. Glasgow: NHS Health Scotland.

[11] See, for example: Rutherford, L., Sharp, C. and Bromley, C. (2012). *The Scottish Health Survey 2011*. Edinburgh: Scottish Government.

Methodology

Chapter 2
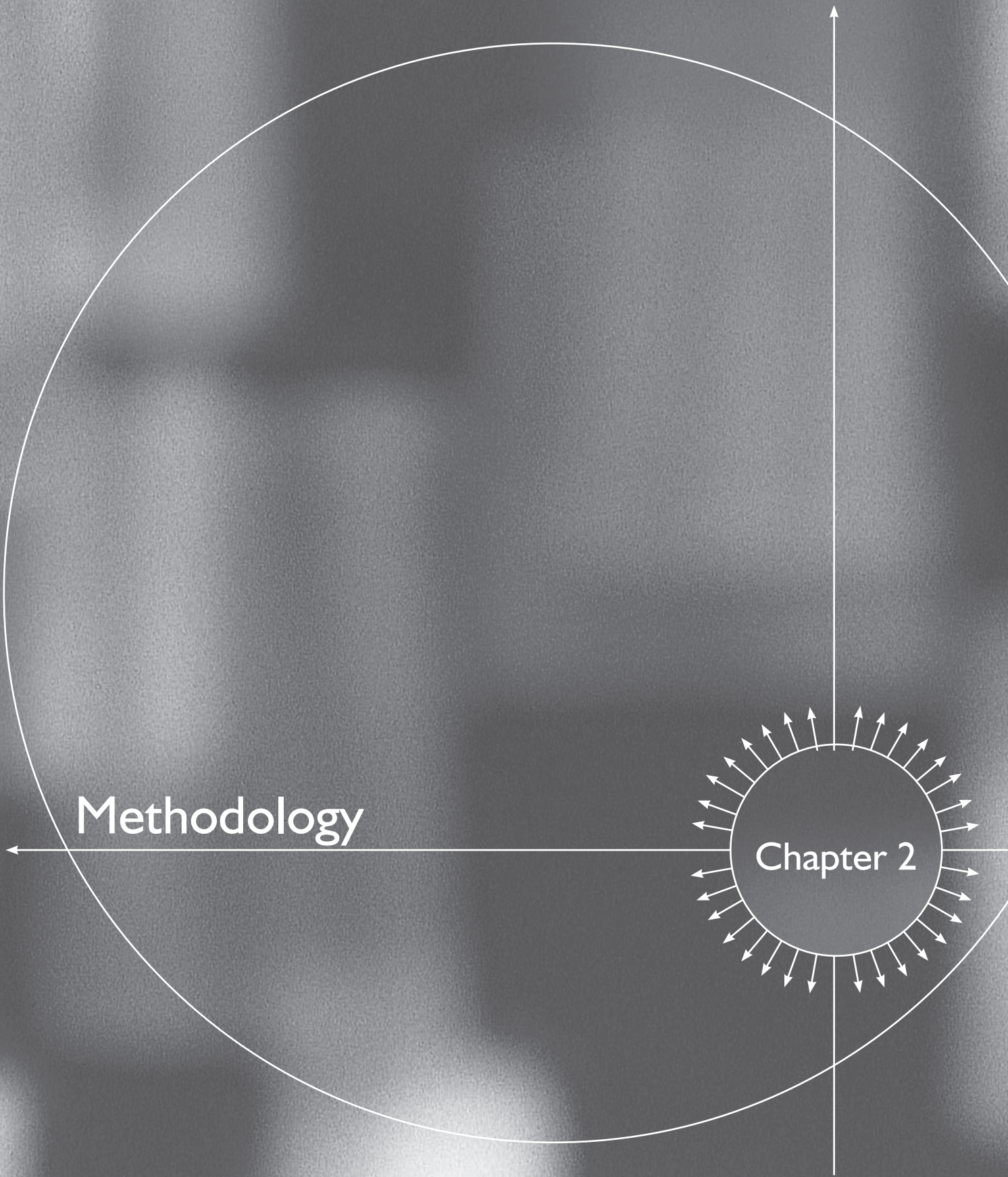
2 METHODOLOGY

Lisa Rutherford

SUMMARY

- The Knowledge, Attitudes and Motivations to Health (KAM) module was included in the Scottish Health Survey (SHeS) between 2008 and 2011. The module replaced the Health Education Population Survey (HEPS) conducted in Scotland between 1996 and 2007, on behalf of NHS Health Scotland.
- SHeS is a survey in which all adults and up to 2 children at each selected household are eligible to be interviewed. One adult in each participating household was selected at random to answer the questions in the KAM module.
- Participants' answers to questions in the KAM module can be analysed alongside the data collected in the main SHeS interview on health behaviours, including height and weight measures.
- The sample for HEPS included adults aged 16-74. In common with the main SHeS interview, adults aged 16 and over were interviewed for the KAM module.
- This report uses data collected in the 2008, 2009, 2010 and 2011 surveys, with most tables reporting figures based on the four years combined.
- Over the four years (2008 to 2011) 8,424 adults took part in the KAM module. Of these, 7,026 also completed a computer-assisted self-interview (CASI) containing more sensitive questions about sexual behaviour.
- Between 2008 and 2011, the response rates for the main KAM module ranged between 48% and 50%. The response rates including the CASI ranged between 39% and 42% in this same period.
- People aged 16-24 were the least likely age group to take part in the main SHeS interview. However, response to the KAM module among those who participated in the main SHeS interview was lowest among people aged 75 and over.
- The data were weighted to take account of the overall sample design and to adjust for non-response bias. The profile of the weighted sample for each year closely matches that of the mid-year household population estimates for Scotland. Separate weights were calculated for each of the four years separately and a weight for the four years combined (2008-2011) was also calculated.
- The socio-demographic analyses in this report are based on the Scottish Index of Multiple Deprivation (SIMD).

2.1 INTRODUCTION

This report is based on findings from the Knowledge, Attitudes and Motivations to Health (KAM) module of the Scottish Health Survey (SHeS). It also draws on health behaviours data and outcomes from the main SHeS interview. The KAM module included questions previously asked as part of the Health Education Population Survey (HEPS) conducted in Scotland between 1996 and 2007.[1] To minimise respondent burden and reduce data collection costs, the study was integrated into the SHeS survey between 2008 and 2011.

In addition to describing the methodological aspects of the KAM module, including overall design, sampling, and response rates, this chapter also discusses the analysis and reporting conventions used in this report.

2.1.1 Background to the module

HEPS was commissioned by the Health Education Board for Scotland in 1995 to provide data to support its health education and health promotion work. NHS Health Scotland, the successor body to the Health Education Board for Scotland, continues to need information about levels of public knowledge of health education messages, people's attitudes towards their own health as well as their motivations to change their lifestyle behaviours to improve their health.

NHS Health Scotland is a Special Health Board in NHS Scotland tasked with the remit of improving the health of the population. 'Better Health, Better Care,'[2] described NHS Health Scotland as the body that 'helps people to sustain and improve their health, especially in disadvantaged communities, ensuring better, local and faster access to health care.' Understanding more about the extent to which knowledge, attitudes and motivations to change health behaviours vary across different groups in society will help NHS Health Scotland to better target its health improvement activities and address inequalities where they exist.

For the HEPS, there were two waves of data collection each year (March and September) between 1996 and 2007. The exceptions were the disruptions to the time series in 1999 survey (no wave 2) and in 2000 (no wave 1 or 2 data collection). In 2006 and 2007, data collection took place in January and August so that data could be collected immediately prior to the introduction of the smoking ban in March 2006.

2.1.2 Topics in the KAM module

The topic areas covered by HEPS emerged over time from a series of policy documents dating back to the 1992 White Paper 'Scotland's Health – A Challenge to us All.'[3] Most of the areas covered in the KAM module, and included in this report, were included in HEPS since its inception, as factors such as poor diet, low activity levels, smoking and alcohol consumption have long been, and continue to be, public health concerns in Scotland. Emerging areas of concern, such as sexual health, knowledge of cancer risk factors, and mental wellbeing were introduced to the series in 2008.

2.1.3 The combined 2008-2011 KAM data

In common with the core topics covered in the main SHeS questionnaire, the KAM questionnaire did not change between 2008 and 2011. This report takes advantage of the ability to combine the data collected over this period to yield a larger overall sample and allow for more detailed analysis to be carried out. Estimates for the key measures covered in each chapter are presented for 2008, 2009, 2010

and 2011 separately. Data for the individual four years and the four years combined are available from the UK Data Archive.[4]

2.2 MEASURING HEALTH BEHAVIOURS AND OUTCOMES

In addition to monitoring health-related knowledge, attitudes and behavioural motivations, the HEPS series also included detailed questions about health behaviours such as physical activity levels, alcohol consumption, smoking behaviour, fruit and vegetable consumption and psychological wellbeing. These behavioural factors were used in the analysis of the knowledge, attitudes and motivation questions included in the survey. Integrating the KAM module into the existing SHeS eliminated the need to collect additional health behaviour data as much of it was already captured in SHeS using more detailed questions than was possible within the scope of the HEPS. In addition, SHeS takes direct physical measurements of participants' height and weight which HEPS did not include. Throughout this report the SHeS behavioural data is used to analyse the data from the KAM module.

2.3 THE SCOTTISH HEALTH SURVEY (SHeS) SERIES

2.3.1 The SHeS Series

The SHeS series was established by the Scottish Office in 1995 to provide data about the health of the population living in private households in Scotland. The full details of the background, methods and content of the SHeS can be found in the technical reports of the 2008-2011 surveys.[5] The key details of the study pertinent to the KAM module are presented here. Notable differences between HEPS and SHeS have also been highlighted, where relevant.

The first three rounds of SHeS were conducted in 1995, 1998 and 2003. Three of the key recommendations to emerge from the comprehensive review of the survey, carried out by the Scottish Executive, had a direct bearing on the KAM module.[6] The first was that the survey should be carried out on a more frequent basis. The second was that the interview should be structured around modules of topics, some of which would be asked of all participants in every year, while others would be asked of smaller sub-samples and would not necessarily need to be asked every year. These recommendations were adopted and the survey began running continuously in 2008 with a modular format. Increasing both the frequency of the survey, and the flexibility over the survey contents, meant that the third recommendation, to incorporate the knowledge, attitudes and motivation questions from the annual HEPS into the main SHeS, could be realised.

2.3.2 Survey design of the 2008-2011 surveys

Between 2008 and 2011 the SHeS had a two-stage study design, the first involved interviews with all adults and up to two children in each sampled household. In a sub-sample of addresses adult participants

were also invited to take part in a second stage, a visit from a nurse to take a range of physical measurements and biological samples. As noted above, a core and modular structure was introduced in 2008. Core questions were included in the survey every year. Module A was a 'rotating' biennial module. Module B, the KAM module on knowledge, attitudes and motivations to health, was included in the survey every year.

The majority of the key health behaviours that relate to the topics in the KAM module are collected in the core SHeS interview. One limitation of the modular approach is that it is not possible to analyse questions included in Module A alongside questions from KAM as each household was only asked one of these modules. Similarly, the nurse sub-sample is too small to be analysed in relation to the KAM findings, although some analysis might be possible using data from the combined four years data.

Since SHeS differs from HEPS in a number of ways there were some issues that had to be addressed prior to the launch of SHeS fieldwork in 2008. The biggest difference between the surveys was that the HEPS selected just one adult aged 16-74 per sampled household whereas on SHeS all adults and up to two children in sampled households were eligible to be interviewed. Many SHeS interviews take place concurrently with up to four household members able to be interviewed at the same time. This presents few problems for the kinds of data collected in the main SHeS study. Questions about people's attitudes were, however, felt to be more problematic as people might not want to reveal their opinions in the presence of other household members. It was also felt that asking people about their knowledge of key health messages would be affected if they could hear other people's answers first, and perhaps simply repeat those. To avoid these problems, and to ensure that the method of data collection for the KAM module more closely mirrored that used in HEPS, just one adult per household was selected at random to take part in the KAM module. So, whereas all adult participants in each household answered the core elements of the SHeS, just one person answered the KAM module questions.

The HEPS survey included a paper self-completion with questions about sexual behaviour. As the core SHeS interview already included a paper self-completion it was decided that the self-completion element of the KAM module should instead be asked via Computer Aided Self-interviewing (CASI) to reduce amount of paperwork participants were required to complete.

2.3.3   Sample design for the 2008-2011 surveys

The 2008-2011 surveys used a two-stage stratified probability sampling design with datazones selected at the first stage and addresses (delivery points) at the second. This differed from previous years of SHeS and HEPS where postcode sectors rather than datazones were the primary sampling units (PSUs).

Three samples were selected for the survey:

1. a general population (main) sample of addresses in which all adults (16+) and up to two children (aged 0-15) were eligible to be selected in each household;
2. a child boost sample in which up to two children (aged 0-15) were eligible to be selected in each household; and,
3. a Health Board boost sample in which all adults (16+) were eligible to be selected in each household.

The addresses selected for the main sample were classified as being either version A, or version B (KAM) addresses. The table below sets out the numbers selected each year. Random allocation was used to choose the version assigned. Core questions were asked of every participant; while those in version A addresses were also asked Module A, while in version B addresses a single adult, chosen at random, was asked the KAM module questions.

No. of addresses sampled per version	2008	2009	2010	2011	Total for 2008-2011 combined
Version A	2,708	2,928	2,827	2,831	11,294
Version B (KAM)	4,237	4,660	5,039	5,140	19,076

The sample of addresses was selected from the small user Postcode Address File (PAF). This sample frame was also used on HEPS. This is a list of nearly all the residential addresses in Scotland and is maintained by The Royal Mail. The population surveyed was therefore people living in private households in Scotland. People living in institutions, who are likely to be older and, on average, in poorer health than those in private households, were not covered. The very small proportion of households living at addresses not on the PAF was not covered.

All areas of Scotland where fieldwork could feasibly be carried out were covered, but some inhabited islands with very small populations were excluded. The inhabited islands that were included were mainland Orkney, mainland Shetland, Lewis, Harris, Skye, Bute, Islay, Mull and Arran.

The 2008-2011 SHeS sample was designed to enable detailed analysis of core questions by both Health Board Area and the 15% most deprived areas according to the Scottish Index of Multiple Deprivation (SIMD) after four years. The KAM module sample was too small to enable similar analysis, even after four years.

Full details of the sample design in the 2008-2011 are available in the technical volume of the SHeS annual technical report.[5]

2.4 SURVEY RESPONSE

Table 2.1 shows the overall household response to the KAM module for the 2008-2011 surveys. The row labelled 'Total eligible households' shows the number of private residential households found at the selected addresses (after selection of a single dwelling unit and, a household, when necessary).

Households described as 'co-operating' are those where at least one eligible person was interviewed at Stage 1, the interviewer visit. The row labelled 'Households in which KAM respondent completed main interview' refers to those in which the selected KAM respondent completed the core SHeS interview but did not complete the KAM module. Households in which the selected KAM respondent did complete the KAM module are labelled as 'households in which KAM respondent completed KAM interview'. Not everyone who completed the KAM module completed the CASI section. Those households where the selected KAM respondent completed the KAM module, including the CASI questions, are referred to as 'households in which KAM respondent completed KAM CASI'.

Table 2.1 presents response data for households allocated to the KAM sample for each of the four years between 2008 and 2011 (see also summary table below). In 2008, 60% (2,280) of KAM households took part. Sixty-three percent of KAM households took part in 2009 (2,692 households) and 2010 (2,872 households) and in 2011 66% (3,055 households) participated.

As the KAM respondent was chosen at random from all adults eligible to be interviewed for the main survey, non-response can happen in three ways: a whole household can refuse to take part, the person selected to be the KAM respondent can refuse to take part in the whole survey, or the KAM respondent can do the main SHeS interview but refuse to complete the KAM module. The response to the main KAM module (as a proportion of all eligible households) ranged between 48% and 50% between 2008 and 2011. The response including the CASI module ranged between 39% in 2011 and 42% in 2008 and 2009.

Table 2.1

Response to the KAM module	2008		2009		2010		2011	
	n	%	n	%	n	%	n	%
No. of participating households	2,280	60	2,692	63	2,872	63	3,055	66
KAM module completed	1,846	49	2,023	48	2,279	50	2,276	49
KAM module + CASI completed	1,591	42	1,715	40	1,886	42	1,834	39

Table 2.2 presents response data by Scottish Index of Multiple Deprivation (SIMD) quintiles for the 2008-2011 combined sample. The proportion of KAM households taking part in SHeS was lowest for the most deprived quintile (SIMD quintile 1) (57% compared with 61%-67% in SIMD quintiles 2 to 5). Similarly, compared with KAM respondents in other deprivation quintiles, those in the lowest quintile were less likely to complete the main SHeS interview (52% compared with 55%-61%); less likely to complete the KAM interview (45%

compared with 48%-54%) and less likely to complete the KAM interview including the CASI module (37% compared with 41%-45%).   **Table 2.2**

Table 2.3 shows the proportion of men and women in co-operating households who participated in the KAM module in each of the four years. The proportion of men that completed the module (but not necessarily the CASI self-completion section of the interview) ranged from 83% to 87% between 2008 and 2011. For women, the proportion that completed the module ranged between 87% and 91%.

Each year, response among those aged 16-74 varied a little but with no obvious patterns. It is worth noting that although response to the survey overall was lowest among those aged 16-24, people of this age were not the least likely to complete the KAM module. Across all four years, response among men declined with age from 65 onwards. For women, there was no clear pattern by age in 2008 and 2009 but in 2010 and 2011 response also declined from aged 65 onwards.

The proportion completing the module, including the CASI section, was lower. Between 71% and 77% completed the module (including CASI) between 2008 and 2011. Response declined more steeply with age and was lowest among those aged 75 and over (ranged between 40% and 46% between 2008 and 2011). The fact that the CASI section is completed via a laptop computer, and the sensitive nature of the questions (about sexual attitudes and behaviour), both contribute to the lower response among older people.   **Table 2.3**

2.5 WEIGHTING

As SHeS is comprised of a number of different samples (see Section 2.3.3), several different sets of weights have been provided for the survey. The SHeS 2008-2011 Technical Reports[5] provide full details of the household, adult and child weights that apply to the main survey data. Only the KAM weighting is described in detail here.

2.5.1 KAM weights – summary

KAM weights were calculated in a similar way to the main adult weights in that they combined selection weights, non-response weights and calibration. Each of the weights is described in detail below and the following bullets summarise the weighting strategy and indicate the name given to use in the archived dataset available from the UK Data Archive:

- calculate weights (w_1) for the differential selection of addresses;
- calculate weights for the selection of dwelling units at each address (w_2) and for the selection of households at each dwelling unit (w_3);
- calibrate the combined household weight ($w_1 \times w_2 \times w_3$) so that the weighted sample of household members matched population estimates for age/sex and health board (w_4);

- generate weights for whether an adult within a participating household responded to the main survey (w_5);
- calculate a weight (w_6) for the selection and response to the KAM module;
- combine w_5 and w_6 with the household weight (w_4) and calibrate the combined weight ($w_4 \times w_5 \times w_6$) to the population estimates. Scale this to give the final KAM interview weights for single years, kam08wt (2008 survey weight), kam09wt (2009 survey weight) kam10wt (2010 survey weight) and kam11wt (2011 survey weight);
- combine individual weights for each year (kam08wt, kam09wt, kam10wt and kam11wt) to create a combined year weight for analysis of the 2008-2011 data together, kam08091011wt.

2.5.2 Address, dwelling unit and household selection weights

Address selection weights (w1)

Selection weights were required to ensure that each area was in the correct proportion for national estimates. These selection weights differed from the corresponding selection weights for the main adult sample as the Health Board boost sample was not included.

Dwelling unit and household selection weights (w2 and w3)

A dwelling unit weight was calculated to correct for this discrepancy between the number of dwelling units found at the address and the number given by the Multiple Occupancy Indicator[7]. A household weight was also calculated to correct for the selection of households. These weights were the same as those calculated for analysis of the main sample.

Calibrating household weights (w4)

To be consistent with the weighting of the main adult sample, household weights were generated by calibrating the combined selection weights (w1×w2×w3) to estimates of the age/sex and health board distribution of the household population (the estimated population in private households) provided by National Records of Scotland[8]General Register Office Scotland (GROS). The calibration totals are given in Table 2.4 and Table 2.5. As with the main survey, the weights were also calibrated to ensure that the 15% most deprived SIMD areas were not under-represented because of non-response (as noted in Section 2.3.2, the survey is designed to provide estimates for these areas after four years).

Adult non-response weights (w5)

Non-response weights, to weight for participation in the survey had been calculated for the main survey. These weights (w5) were simply the reciprocal of the estimated probability of taking part.

KAM selection weights (w6)

Only one individual in a KAM address was selected for the KAM module and this had to be taken into account in the weighting. If this had not been done single-adult households would have been over-represented and large households under-represented. The KAM selection weight was simply the reciprocal of the number of adults in the household. To avoid extremely large weights this weight was trimmed so no weight was greater than 3.

Table 2.3 shows that, among those chosen for the KAM module, the response rate ranged between 85% and 89% in the 2008-2011 period. A further analysis was then performed to see which factors affected the response to the KAM module and a non-response rate weight was used.

KAM interview weights (kam08wt, kam09wt, kam10wt, kam11wt)

The next step was to calibrate the combined weight (w4×w5×w6) to the totals given in Table 2.5. This ensures that when national estimates are required the age/sex distributions of the adult sample match those of the population.

The calibrated interview weights were scaled so the sum of the weights equalled the sample size. This gave the final single year KAM weights kam08wt, kam09wt, kam10wt and kam11wt.

2.5.3 KAM combined interview weights (kam08091011wt)

The calculation of the combined weights followed the same procedure used for the single year weights. The pre-calibration weights that had already been calculated for the individual years (which took into account selection and non-response weighting), were combined and calibrated to age/sex population totals. The population totals used were the average of the 2008, 2009, 2010 and 2011 mid-year household population estimates (and tended to be very similar to the figures shown in Table 2.5).

2.6 COMPARING THE KAM AND HEPS SAMPLES

The SHeS and HEPS sample designs were very different. HEPS used an equal probability sample, clustered by postcode sector, with about 20 addresses selected in each sector. In contrast, the SHeS 2008-2011 series over-sampled some areas (mainly small Health Boards and addresses in deprived areas) and was designed to be unclustered over a four-year period. This meant that there were fewer than 20 addresses selected in each postcode sector, and only a fraction of them are KAM addresses.

HEPS also used a different weighting system; responses were cell-weighted by age and sex. Cell weighting by age and sex ensures that the weighted sample proportion in each age/sex group matches the population proportion. This differs from the procedure used for KAM where the non-response modelling took into account not just the age and sex of each individual, but also other

variables (such as the number of adults in the household, the health board, and whether or not the address was in a deprived area). Including these additional variables is likely to be more effective in reducing bias due to non-response.

A clustered, stratified multi-stage sample design was used on SHeS in the 2008-2011 series. In addition, weights were applied when obtaining survey estimates. The HEPS sample was also clustered and weights were applied. One of the effects of using complex design and weighting is that standard errors for survey estimates are generally higher than the standard errors that would be derived from an unweighted simple random sample of the same size. The calculations of standard errors shown in tables, and comments on statistical significance throughout this report, have taken the clustering, stratification and weighting into account.

2.7 AGE AND SEX PROFILE OF THE SAMPLE

Tables 2.6 to 2.9 show the age and sex profile of responding adults for each year of KAM and compare them with the mid-year population estimates for the relevant year. It is apparent from these tables that both men and women in the 16-24 age range were under-represented at both the main SHeS interview stage and the KAM module each year. It was noted in the 2008/2009 KAM report that this age-group was also under-represented in the HEPS sample.[9]

This is not because of a low response rate to the KAM module. It is partially because adults in these age ranges had a low response rate to the main interview, and partially because they tended to have a low selection probability for the KAM module - young adults tend to live in households that are larger than average and as a result their selection probability tended to be small.[10]

Tables 2.6 to 2.9

2.8 ANALYSIS CONVENTIONS IN THIS REPORT

2.8.1 Statistical significance and precision of estimates

Any differences highlighted in the chapter text as being significant are statistically significant at the 95% level. In addition, 95% confidence intervals for all the figures in the tables are presented to help assess the precision of the estimates. As noted above, the confidence intervals, and statistical tests, have taken account of the survey's complex design. If the confidence intervals for two estimates do not overlap (for example, the estimates for men compared with women, or 2008 versus 2009) then the two estimates are significantly different from each other. This means that we can be 95% certain that a real difference between these groups exists in the population. Overlapping confidence intervals do not necessarily signify that the groups are *not* significantly different to each other; further investigation is required to establish that.

The real value of a confidence interval is that it shows the likely range of the population value. For example, Table 3.1 in Chapter 3 shows that 55% of men aged 16-24 said they had a great deal of influence over

their own health. The 95% confidence interval for the estimate shows that the true value in the population could be as low as 47.3% or as high as 63.3%. Larger samples have narrower confidence intervals (and therefore more precise estimates), while smaller samples have wider intervals (less precise estimates).

2.8.2   Measure of deprivation used in analysis

HEPS reports used the deprivation category (DEPCAT)[11] measure of social deprivation based on the Carstairs index, derived from the 1991[12] or 2001[13] Census. As the Scottish Government and NHS Scotland now use the Scottish Index of Multiple Deprivation (SIMD) as their preferred measure of deprivation this report also uses SIMD.

The analysis was based on the 2009 version of the SIMD.[14] It is based on 38 indicators in seven individual domains of current income, employment, housing, health, education, skills and training, geographic access to services and crime. 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 comprehensive picture of relative area deprivation across Scotland. The index was divided into quintiles for the presentation of analysis within the report, a version divided into deciles is also available on the dataset. The full index is not available on the archived dataset due to concerns about its potential for identifying individual respondents or households.

2.8.3   Logistic regression

Regression modelling has been used in a number of chapters to examine the factors associated with selected outcome variables, after adjusting for other predictors. For instance in Chapter 4 binary logistic regression analyses have been performed to examine the association between maintaining positive steps taken to reduce alcohol consumption and a variety of predictor variables including age, household income, area deprivation and presence of other risk factors. A range of possible predictor variables were tested in each model. This gives an estimate of the independent effect of each predictor variable on the outcome when all the other independent variables were included in the model.

The results of the binary logistic regression analyses are presented in tables showing odds ratios for the final models, together with the probability that the association is statistically significant. The predictor variable is significantly associated with the outcome variable if $p<0.05$. The models show the odds of being in the particular category of the outcome variable (i.e. being in the maintenance or long-term maintenance stage of change) for each category of the independent variable (e.g. quintiles of equivalised household income). Odds are expressed relative to a reference category, which has a given value of 1. Odds ratios greater than 1 indicate higher odds, and odds ratios less than 1 indicate lower odds. Also shown are the 95% confidence

intervals for the odds ratios. Where the interval does not include 1, this category is significantly different from the reference category.

Missing values were included in the analyses, that is, people were included even if they did not have a valid answer, score or classification in one or more of the explanatory variables. Where this was a large number of people, the missing values were included as a separate category (e.g. income), and where there were few records with a missing value, these individuals were included with the category containing the largest number of cases. The treatment of missing values in the regression models is explained in the footnote section of the relevant tables.

References and notes

[1]   http://www.healthscotland.com/understanding/population/HEPS.aspx

[2]   http://www.scotland.gov.uk/Publications/2007/12/11103453/0

[3]   http://www.healthscotland.com/documents/1181.aspx

[4]   http://data-archive.ac.uk/

[5]   Technical reports for the 2008 to 2011 surveys can be found on the Scottish Government's Scottish Health Survey website: www.scotland.gov.uk/scottishhealthsurvey

[6]   Further information on the Scottish Health Survey review and recommendations adopted as a result of the review can be found on the Scottish Government SHeS website: www.scotland.gov.uk/Topics/Statistics/Browse/Health/scottish-health-survey

[7]   The Multiple Occupancy Indicator (MOI) is an estimate of the number of dwelling units at an address. Historically, tenement blocks were listed once in the Postcode Address File (PAF) with an MOI equivalent to the number of individual flats within the stair also noted. More recently, flats within tenements have started to be numbered and listed separately in the PAF, however this is not universal. To ensure that households at addresses that do not have an individual entry in the PAF were given an equal chance of selection to other households the likelihood of selecting each address was increased in proportion to the MOI.

[8]   NRS came into existence in April 2011. Prior to this population estimates were provided by General Register Office for Scotland (GROS).

[9]   Bromley et al. *Knowledge, Attitudes and Motivations to health – a module of the Scottish Health Survey*. NHS Health Scotland, 2010.

[10]   This would also have applied with the HEPS sample, but the overall selection probabilities also differed in that study due to the exclusion of people aged 75 and over.

[11]   The Carstairs index, on which the DEPCAT classification is based, was originally developed by Vera Carstairs and Russell Morris for use in Scotland. It is a postcode sector level index derived from the Census measures of social class, car ownership, overcrowding and employment status. DEPCAT splits postcode sectors into seven groups using their Carstairs score, ranging from 1 (most affluent) to 7 (most deprived). In contrast, SIMD is drawn from a larger range of data sources, many of which are not reliant on Census data, and can be updated at more regular intervals.

[12]   McLoone, P. (1994) *Carstairs Scores for Scottish Postcode Sectors from the 1991 Census*. Glasgow: Public Health Research Unit, University of Glasgow

[13]   McLoone, P. (2004 *) Carstairs scores for Scottish Postcode sectors from the 2001 Census*, Glasgow: Social and Public Health Science Unit, University of Glasgow.

[14]   www.scotland.gov.uk/Topics/Statistics/SIMD/Publications

Table list

Table 2.1   KAM sample household response, 2008, 2009, 2010, 2011

Selected KAM addresses/eligible households

Address and household outcome	2008		2009		2010		2011	
	N	%	N	%	N	%	N	%
Selected addresses	4237		4660		5039		5140	
Ineligible addresses[a]	441		406		511		490	
Addresses at which interview sought	3796		4254		4528		4650	
Extra households sampled at multi-household addresses	1		0		0		0	
Total eligible households	3797		4254		4528		4650	
Household response								
Co-operating households[b]	2280	60	2692	63	2872	63	3055	66
Households in which KAM respondent completed main interview[c]	2068	54	2325	55	2579	57	2664	57
Households in which KAM respondent completed KAM interview[d]	1846	49	2023	48	2279	50	2276	49
Households in which KAM respondent completed KAM interview and CASI[e]	1591	42	1715	40	1886	42	1834	39
Non-responding households	1517	40	1561	37	1656	37	1595	34
Non-contact (eligible)	114	3	182	4	216	5	232	5
Non-contact (unknown eligibility)	123	3	54	1	40	1	26	1
Refusal	922	24	1046	25	1099	24	1075	23
Other non-response (eligible)	332	9	274	6	296	7	259	6
Other non-response (unknown eligibility)	26	1	5	0	5	0	3	0

a Addresses where no private households were found
b Households where at least one person was interviewed
c Households in which the KAM respondent completed the core SHeS interview – but not necessarily the KAM module
d Households in which the KAM respondent completed the core SHeS interview <u>and</u> the KAM module
e Households in which the KAM respondent completed the core SHeS interview, the KAM module <u>and</u> the CASI section

Table 2.2   KAM sample response, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile, 2008-2011 combined

2008-2011 combined

Selected addresses/eligible households	Scottish Index of Multiple Deprivation quintile									
	5th (least deprived)		2nd		3rd		4th		1st (most deprived)	
	N	%	N	%	N	%	N	%	N	%
Household response	3032		3700		3889		3823		4632	
Addresses selected for KAM interview	201		368		413		380		486	
Ineligable addresses	2831		3332		3476		3443		4146	
Eligible KAM households										
	1721	61	2229	67	2214	64	2097	61	2347	57
Responding KAM households[a]	1543	55	2022	61	1999	58	1914	56	2158	52
KAM respondent completed main interview only	1350	48	1787	54	1724	50	1702	49	1861	45
KAM respondent complete main interview and KAM interview	1172	41	1497	45	1418	41	1402	41	1537	37
KAM respondent completed main interview KAM interview and KAM CASI	3032		3700		3889		3823		4632	

a Households where at least one person was interviewed

Table 2.3   Adults in co-operating households, response to KAM interview, 2008, 2009, 2010, 2011, by age and sex

Adults aged 16 or over in co-operating households   *2008, 2009, 2010, 2011*

	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
2008								
Responded to KAM interview	89	88	87	92	90	85	79	87
Responded to CASI	85	84	84	86	82	61	42	75
2009								
Responded to KAM interview	88	86	88	84	88	82	80	85
Responded to CASI	83	83	84	80	78	66	43	74
2010								
Responded to KAM interview	88	87	90	87	91	87	79	87
Responded to CASI	83	82	84	80	77	63	45	73
2011								
Responded to KAM interview	84	84	77	85	88	84	79	83
Responded to CASI	78	81	72	76	67	58	35	66
Women								
2008								
Responded to KAM interview	90	91	91	92	90	94	87	91
Responded to CASI	87	91	86	87	80	72	49	78
2009								
Responded to KAM interview	86	86	86	90	93	90	87	88
Responded to CASI	83	85	85	86	79	62	38	74
2010								
Responded to KAM interview	92	88	89	92	91	90	85	89
Responded to CASI	90	84	84	82	75	64	41	73
2011								
Responded to KAM interview	85	89	87	88	94	88	77	87
Responded to CASI	81	81	81	82	80	59	36	71
All adults								
2008								
Responded to KAM interview	90	90	89	92	90	90	83	89
Responded to CASI	86	88	85	87	81	67	46	77
2009								
Responded to KAM interview	87	86	87	87	91	86	84	87
Responded to CASI	83	84	84	83	79	64	40	74
2010								
Responded to KAM interview	90	88	89	90	91	89	83	88
Responded to CASI	87	83	84	82	76	63	43	73
2011								
Responded to KAM interview	84	87	83	87	91	87	78	85
Responded to CASI	91	87	79	78	71	57	43	71

Table 2.3   *- Continued*

Adults aged 16 or over in co-operating households   *2008, 2009, 2010, 2011*

	Age							**Total**
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (number selected for KAM interview):								
Men 2008	*62*	*104*	*163*	*165*	*158*	*140*	*119*	*911*
Men 2009	*60*	*118*	*178*	*181*	*182*	*174*	*123*	*1016*
Men 2010	*76*	*152*	*171*	*177*	*183*	*166*	*140*	*1065*
Men 2011	*73*	*135*	*170*	*200*	*217*	*184*	*142*	*1121*
Women 2008	*91*	*151*	*185*	*177*	*198*	*191*	*164*	*1157*
Women 2009	*98*	*190*	*229*	*189*	*218*	*192*	*193*	*1309*
Women 2010	*118*	*209*	*237*	*251*	*242*	*217*	*240*	*1514*
Women 2011	*113*	*210*	*264*	*248*	*235*	*241*	*232*	*1543*
All adults 2008	*153*	*255*	*348*	*342*	*356*	*331*	*283*	*2068*
All adults 2009	*158*	*308*	*407*	*370*	*400*	*366*	*316*	*2325*
All adults 2010	*194*	*361*	*408*	*428*	*425*	*383*	*380*	*2579*
All adults 2011	*186*	*345*	*434*	*448*	*452*	*425*	*374*	*2664*

Table 2.4   Mid-year adult household population estimates for Scotland, 2008, 2009, 2010, 2011, by Health Board

Health Board	2008	2009	2010	2011
Ayrshire & Arran	299,100	299,420	299,880	299,840
Borders	91,400	91,790	92,030	92,350
Dumfries & Galloway	122,000	122,160	122,220	122,130
Fife	289,300	291,590	293,180	295,260
Forth Valley	230,100	231,000	232,760	234,730
Grampian	432,900	436,450	441,550	445,520
Greater Glasgow & Clyde	966,200	970,110	975,050	980,690
Highland	250,800	250,360	250,980	253,200
Lanarkshire	450,000	450,970	451,880	452,840
Lothian	661,800	667,360	676,940	686,010
Orkney	16,300	16,380	16,560	16,640
Shetland	17,500	17,750	17,910	18,020
Tayside	321,000	322,070	325,060	326,910
Western Isles	21,400	21,420	21,470	21,470
Total	4,169,700	4,188,830	4,217,470	4,245,610

Table 2.5   Mid-year adult household population estimates[a] for Scotland, 2008, 2009, 2010, 2011, by age and sex,

Age Group	Male	Female
2008		
16-24	299,100	287,100
25-34	309,900	314,100
35-44	363,600	397,300
45-54	357,900	381,300
55-64	309,400	324,900
65-74	211,100	247,600
75+	140,700	225,600
Total	1,991,700	2,177,900
2009		
16-24	299,490	286,420
25-34	315,840	317,450
35-44	353,490	386,290
45-54	362,590	389,320
55-64	312,050	328,120
65-74	215,240	250,170
75+	144,460	227,900
Total	2,003,160	2,185,670
2010		
16-24	299,950	287,610
25-34	326,050	324,280
35-44	343,040	375,490
45-54	367,340	396,750
55-64	315,730	332,510
65-74	217,920	251,330
75+	148,550	230,900
Total	2,018,580	2,198,870
2011		
16-24	298,970	287,550
25-34	337,990	332,300
35-44	335,500	365,380
45-54	370,270	402,150
55-64	319,520	337,250
65-74	221,450	253,430
75+	152,370	231,530
Total	2,036,070	2,209,590

a 2008, 2009, 2010 and 2011 private household population
   for Scotland (Source: GRO Scotland)

Table 2.6   Age distribution of 2008 responding KAM sample, and 2008 mid-year population estimates for Scotland, by sex

Responding adults aged 16 and over

Age	Responding adult samples		
	SHeS 2008 main interview	KAM 2008 module	Mid-2008 population estimates[a]
	%	%	%
Men			
16-24	9	7	15
25-34	11	11	16
35-44	16	18	18
45-54	19	19	18
55-64	18	18	16
65-74	16	15	11
75+	11	12	7
All men	44	43	48
Women			
16-24	9	8	13
25-34	12	13	14
35-44	18	16	18
45-54	17	16	18
55-64	17	17	15
65-74	14	17	11
75+	11	14	10
All women	56	57	48
Bases:			
Men	*2842*	*795*	*1992*
Women	*3623*	*1051*	*2178*

a 2008 private household population for Scotland (Source: GRO Scotland).
   Base shown in thousands.

Table 2.7   Age distribution of 2009 responding KAM sample, and 2009 mid-year population estimates for Scotland, by sex

Responding adults aged 16 and over

Age	Responding adult samples		
	SHeS 2009 main interview	KAM 2009 module	Mid-2009 population estimates[a]
	%	%	%
Men			
16-24	8	6	15
25-34	12	12	16
35-44	17	18	18
45-54	18	18	18
55-64	17	19	16
65-74	16	17	11
75+	11	11	7
All men	44	43	48
Women			
16-24	9	7	13
25-34	14	14	15
35-44	18	17	18
45-54	17	15	18
55-64	17	17	15
65-74	13	15	11
75+	11	14	10
All women	56	57	52
Bases:			
Men	*3288*	*866*	*2003*
Women	*4243*	*1157*	*2185*

a 2009 private household population for Scotland (Source: GRO Scotland).
  Base shown in thousands.

Table 2.8   Age distribution of 2010 responding KAM sample, and 2010 mid-year population estimates for Scotland, by sex

Responding adults aged 16 and over

Age	Responding adult samples		
	SHeS 2010 main interview	KAM 2010 module	Mid-2010 population estimates[a]
	%	%	%
Men			
16-24	9	7	15
25-34	14	14	16
35-44	15	17	17
45-54	18	17	18
55-64	18	18	16
65-74	16	15	11
75+	11	12	7
All men	43	41	48
Women			
16-24	9	8	13
25-34	14	14	15
35-44	17	16	17
45-54	18	17	18
55-64	17	16	15
65-74	14	14	11
75+	11	15	11
All women	57	59	52
Bases:			
Men	*3115*	*927*	*2019*
Women	*4130*	*1352*	*2199*

a 2010 private household population for Scotland (Source: GRO Scotland).
  Base shown in thousands.

Table 2.9   Age distribution of 2011 responding KAM sample, and 2011 mid-year population estimates for Scotland, by sex

Responding adults aged 16 and over

Age	Responding adult samples		
	SHeS 2011 main interview	KAM 2011 module	Mid-2011 population estimates[a]
	%	%	%
Men			
16-24	9	7	15
25-34	12	12	17
35-44	16	14	16
45-54	18	18	18
55-64	18	20	16
65-74	16	17	11
75+	10	12	7
All men	43	41	48
Women			
16-24	9	7	13
25-34	13	14	15
35-44	17	17	17
45-54	19	16	18
55-64	17	16	15
65-74	14	16	11
75+	11	13	10
			13
All women	57	59	52
Bases:			
Men	*3281*	*933*	*2036*
Women	*4263*	*1343*	*2210*

a 2011 private household population for Scotland (Source: GRO Scotland).
   Base shown in thousands.

Influencing health
behaviours

Chapter 3
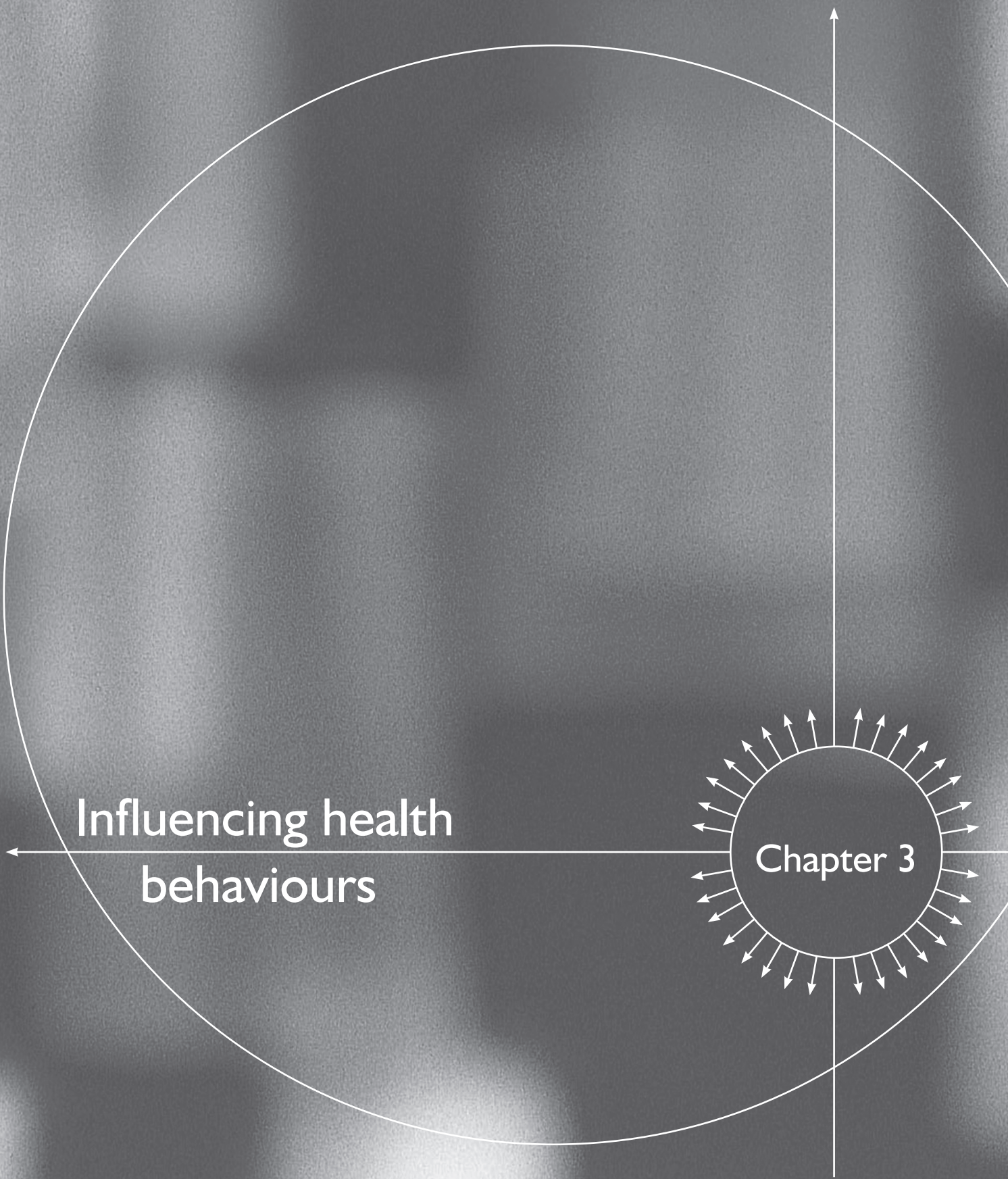
3   INFLUENCING HEALTH BEHAVIOURS

Jane Perry

SUMMARY

- In 2011, half (51%) of adults in Scotland felt they had 'a great deal' of influence over their own health. Forty-two percent felt they had 'quite a lot' while just 8% thought they had 'a little' influence or 'none at all'.

- The influence people perceived themselves as having over their own health did not vary significantly between 2008 and 2011.

- People aged 25 to 54 were most likely to feel that they had a great deal of control over their health (ranging from 56% to 58%).

- Those living in the 20% most deprived areas in Scotland were three times more likely than those living in the least deprived areas to report that they had little or no influence on their health (13% in SIMD quintile 1 compared with 3% in SIMD quintile 5).

- In 2011, the majority (87%) of adults believed they led a 'very' or 'fairly healthy' life while just 12% assessed their lifestyle as 'fairly' or 'very unhealthy'.

- Older people were most likely to describe their lifestyle as very healthy (20% of 65 to 74 year olds and 23% of those aged 75 or over).

- One in five of those living in the 20% most deprived areas of Scotland described the life they led as 'fairly' or 'very unhealthy', compared with one in ten (9%) of those living in Scotland's least deprived areas (SIMD quintile 5).

- In 2011, eight in ten (78%) adults felt there were steps they could take to make their life healthier. Four percent did not want to make any changes while 3% said it was too difficult.

- Those aged 25 to 44 were most likely to believe there were steps they could take to improve their health (88% to 89%).

- The most commonly mentioned steps that people could take to lead a healthier life were: be more physically active (59%); eat more healthily (48%) and control their weight (39%).

- Among those who thought they could improve their health, women were more likely than men to identify controlling weight (43% compared with 34%) and being more physically active (61% compared with 56%) as specific steps they could take. Whereas men were more likely to mention cutting down the amount of alcohol they drank (22% compared with 12%).

- People aged 65 or over were less likely than younger people to identify being more active (51% to 52% compared with 58% to 64% of those aged 16 to 54) or eating more healthily (27% to 31% compared with 40% to 69% of 16 to 64 year olds) as steps they could take to improve their health.

3.1   INTRODUCTION

In recent years the Scottish Government has placed increased emphasis on tackling health inequalities through preventative spending. Preventative spending focuses on the benefits of early interventions to address the causes of inequalities rather than simply dealing with the later consequences. Campaigns focusing on healthy living are a good example, aimed at tackling the health behaviours, such as poor diet and lack of exercise, which are precursors to more serious health conditions.[1]

The 'Take Life On' campaign, launched in Scotland in 2008, focuses on the importance of taking small steps towards longer term health outcomes. The focus is to provide health messages that people feel they can actually put into practice in their own lives.[2]

There are, however, serious challenges for such policies. Some evidence shows that interventions which directly influence the broader distribution of income and power in society are more effective at reducing health inequalities compared with those that rely on individual action. In addition, interventions which are rightly aimed at improving whole population health can inadvertently widen health inequalities as marginalised groups can experience greater barriers to engagement with campaigns or services.[3]

Such policies also assume that there is only a single means through which negative health outcomes will occur in more deprived groups, as they do not seek to change the 'fundamental causes' or underlying 'causes of the causes' such as inequalities in income, power and wealth which are known to make a wide range of health problems more likely through a variety of disparate mechanisms.[4]

This chapter uses data collected in the Knowledge, Attitudes and Motivations to Health (KAM) module of the Scottish Health Survey (SHeS) between 2008 and 2011. It explores how healthy people in Scotland believe they are and the extent to which they feel they can influence their own health. It also examines whether people believe there are actions they can take to improve their own health and, if so, what specific steps they feel they could take. The chapter considers trends between 2008 and 2011, as well as key differences by sex, age and area deprivation, as measured by the Scottish Index of Multiple Deprivation (SIMD).

3.2   DO PEOPLE BELIEVE THEY CAN INFLUENCE THEIR OWN HEALTH?

The 'Take Life On' campaign encourages people to take small steps to improve their health.[2] If health messages are to have the intended impact then people need to feel that they can put the advice into practice in their own lives. This is premised on the assumption that people believe they have some control or influence over the way they live their lives. To assess the extent to which people believe they can influence their own health, KAM participants were asked the following question:

How much influence do you think you have on your own health, by the way you choose to live your life? (a great deal, quite a lot, a little, none at all)

In 2011, the majority of adults in Scotland were positive about the ability they had to influence their own health, with more than nine in ten (93%) reporting they had more than a little influence over it. Half (51%) felt they had 'a great deal' of influence over their own health and a further 42% thought they had 'quite a lot' by the way they chose to live their life. Just 7% considered themselves as having 'a little' influence over their own health while only 1% thought they had no influence at all.

The extent to which people believed they could influence their own health did not vary greatly in the 2008-2011 period and the differences observed in Table 3.1 were not statistically significant. In both 2008 and 2011, 93% of people felt they had either 'a great deal' or 'quite a lot' of influence over their own health by the way they chose to live their life.   **Table 3.1**

3.2.1 Perceived influence on own health by age and sex

The 2008-2011 combined data indicates that men and women had very similar perceptions of the influence they had on their own health (92% of men and 93% of women felt they had 'a great deal' or 'quite a lot' of influence). While some of the figures presented in Table 3.2 suggest that the perceptions of men and women of particular age groups were quite different, these variations were not statistically significant.

The degree to which people thought they could influence their own health varied significantly by age. Among both men and women, it was those aged 25 to 54 that were most likely to feel they had a significant amount of control over their health (56% to 58% reported having 'a great deal' of influence over their own health compared with 47% of those aged 65 to 74 and 40% of those aged 75 or over. People aged 75 or over were most likely to feel they had little or no influence over their own health (11%).   **Table 3.2**

3.2.2 Perceived influence on own health by area deprivation (SIMD)

Perceptions of ability to influence health were significantly associated with area deprivation, measured by the Scottish Index of Multiple Deprivation (SIMD). People living in less deprived areas were most likely to believe they exerted a significant amount of control over their own health. Six in ten (59%) of those living in Scotland's 40% least deprived areas felt they had a 'great deal' of influence over their own health, compared with four in ten (41%) of those living in the 20% most deprived areas. Correspondingly, the likelihood of feeling that you had little or no influence increased in line with deprivation, with those living in Scotland's most deprived areas (SIMD quintile 1) more than three times as likely as those living in the least deprived areas (SIMD quintile 5) to feel this way (13% compared with 3%).   **Figure 3A, Table 3.3**

Perceived influence on own health by Scottish Index of
Mulitiple Deprivation (SIMD), 2008-2011 combined

■ A little influence/None at all
■ Quite a lot of influence
■ A great deal of influence
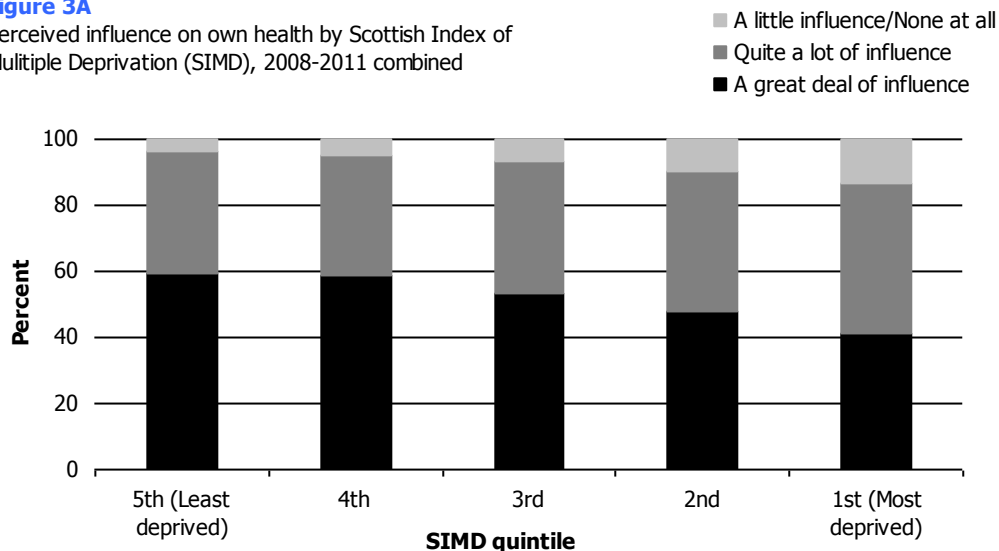
3.3 DO PEOPLE THINK THEY LEAD HEALTHY LIVES?

To gauge the public's perceptions of healthy behaviour, KAM participants were asked to assess how healthy a life they led. In 2011, most adults in Scotland had a very positive view of the life they led with three-quarters (74%) describing it as 'fairly healthy' and a further 13% reporting that they led a 'very healthy' life. Just one in ten (11%) viewed their lifestyle as 'fairly unhealthy' and only 1% concluded that they led a 'very unhealthy' life. Lifestyle assessments in 2011 were not significantly different to those seen in 2008, 2009 or 2010.   **Table 3.4**

3.3.1 Perceptions of lifestyle by age and sex

Analysis of the combined 2008-2011 data indicated that men and women assessed their lifestyles similarly. Eighty-four percent of men described their lifestyle as 'very' or 'fairly healthy' as did 88% of women. Men were, however, slightly more likely than women to consider their lifestyle as 'fairly unhealthy' (14% compared with 11%).

Table 3.5 indicates that lifestyle assessments varied by age. While the proportion of adults assessing their lifestyle as 'very unhealthy' was fairly constant across all age groups (1% to 2%), the proportion reporting that they led a 'fairly unhealthy' lifestyle reduced steadily with age, from 17% of 16 to 24 year olds to 6% of those aged 65 or over. The opposite was observed for those reporting a 'very healthy' lifestyle. Fourteen percent of 16 to 24 year olds reported leading a 'very healthy' life, rising to 20% of those aged 65 to 74 and 23% of those aged 75 and over.   **Table 3.5**

3.3.2 Perceptions of lifestyle by area deprivation (SIMD)

There was also a significant association between how deprived an area a person lived in and how they assessed their lifestyle. A fifth of those living in Scotland's most deprived areas (SIMD quintile 1) thought they lived a 'fairly' or 'very unhealthy' life compared with just 9% of those in the least deprived areas (SIMD quintile 5). Correspondingly, those living

in Scotland's least deprived areas were twice as likely as those living in the 20% most deprived areas to consider their lifestyle as 'very healthy' (19% compared with 10%). **Figure 3B, Table 3.6**

Figure 3B
Assessment of lifestyle by Scottish Index of Multiple Deprivation (SIMD), 2008-2011 combined

Legend:
- Very/Fairly unhealthy
- Fairly healthy
- Very healthy
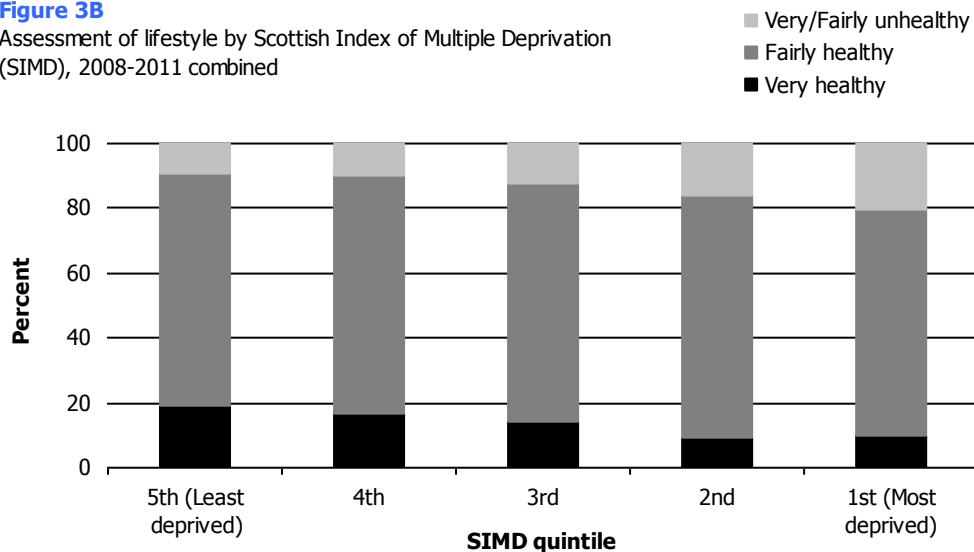
3.4 ABILITY TO MAKE IMPROVEMENTS TO HEALTH

It was noted in Section 3.2 that the vast majority (93%) of adults in Scotland believed they had 'a great deal' or 'quite a lot' of influence over their own health. In addition to asking about the level of influence or control people thought they had over their health, KAM participants were also asked if there were specific actions they could take to make their life healthier. In 2011, three-quarters (78%) of adults in Scotland thought there were things they could do to make their life healthier, while 15% thought they already led a healthy life and didn't think there were any further steps they could take. Four percent did not want to take any steps to make their life healthier and 3% felt it was too difficult for them to make changes. These findings were very similar to those seen in earlier years of the KAM module. **Table 3.7**

3.4.1 Ability to improve health by age and sex

The 2008/2009 KAM report noted that men were no more or less likely than women to report that there were steps they could take to improve their health.[5] This was consistent with analysis of the combined 2008-2011 data with 78% of men and 76% of women reporting that there were steps they could take to make their life healthier.

Analysis of the combined data also supported the earlier KAM findings that perceptions of ability to improve health also vary significantly by age. People aged 25 to 54 were most likely to believe that there were steps they could take to make their life healthier (86% to 89%), perceived ability then declined sharply among those aged 55 or over. Three quarters (76%) of those aged 55 to 64 felt they could do something to improve their health, falling to 57% among those aged 65 to 74 and further still to 32% among those aged 75 or over. This decline was mirrored with an increase in the proportion who felt they already led

a healthy life among the older population (from 17% of 55 to 64 year olds to 41% of those aged 75 or over). Older people (aged 65 or over) were also most likely to say that they didn't want to make changes (9% of those aged 65 to 74 to 13% of those aged 75 or over) and that it was too difficult for them to do anything (7% to 13%). **Tables 3.8**

Views on ability to improve health did not vary significantly by area deprivation (SIMD).

3.5   SPECIFIC STEPS TO LEAD A HEALTHIER LIFE

Participants who felt that there were things they could do to make their life healthier were presented with a list of specific actions they could take and asked to choose up to three they thought they could do. All of the options participants could choose from are presented in Table 3.9. As seen in previous years, in 2011 the actions most commonly mentioned by those who thought they could take steps to make their own life healthier were:

- o *be more physically active (59%)*
- o *eat more healthily (48%)*
- o *control weight (39%)*

One in six (17%) mentioned reducing stress as something they could do to make their life healthier. The proportions that chose steps relating to smoking or alcohol consumption reductions were also considerable given that neither are universal behaviours (19% mentioned stopping smoking as a possible step they could take and 18% chose cutting down on drinking alcohol). **Table 3.9**

3.5.1   Steps to lead a healthier life by age and sex

Analysis of the combined 2008-2011 data show that among those who said they could improve their health, men and women differed slightly in terms of the specific actions they thought they could take. In line with findings presented later in this report (see Chapters 7 and 8), women were significantly more likely than men to choose controlling weight as a step they could take (43% compared with 34%). This gender difference still held true when analysis was restricted to those who were overweight or obese (61% of women mentioned controlling weight as a specific step they could take, compared with 47% of men)(Data not shown).

Men were significantly more likely than women to mention cutting down on alcohol (22% compared with 12%) as a potential step they could take. Again, when the analysis was restricted just to those drinking outwith the government guidelines, this was still true (36% of men mentioned cutting down compared with 26% of women)(Data not shown).

Figure 3C: Steps that could be taken to make own life healthier by sex, 2008-2011 combined. Men (blue), Women (black).
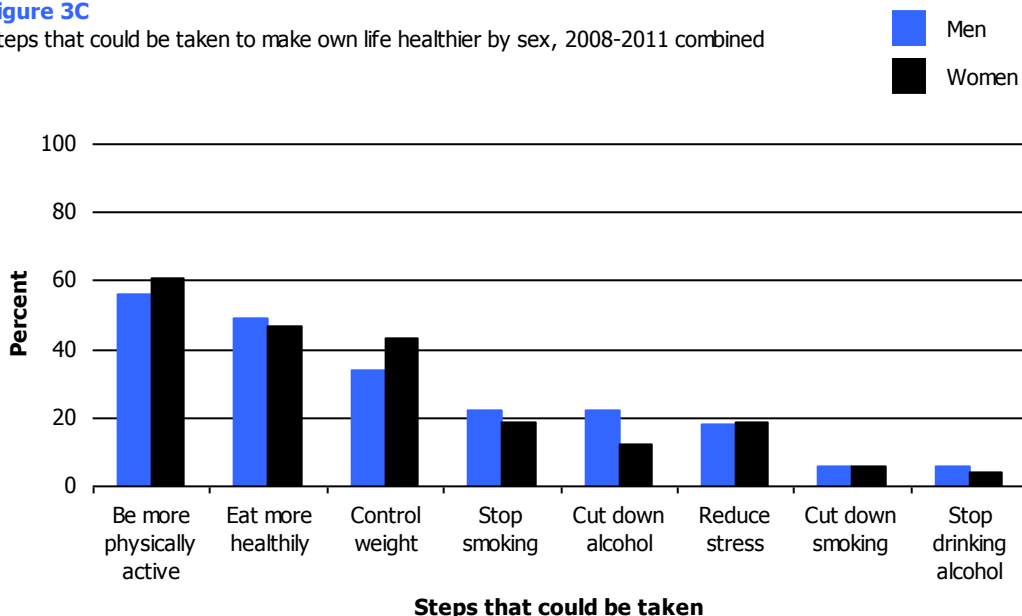
Similarly, the steps people said they could take to improve their health were not uniform across age groups and many of the differences observed here correspond with other findings presented throughout this report. Of those who thought that they could improve their health, 16 to 54 year olds were more likely than those aged 55 or over to view being more physically active as a specific action they could take. This was also the case when analysis was restricted to those falling short of the physical activity guidelines (51% of 55 to 74 mentioned being more active compared with 69% of 16 to 24 year olds) (Data not shown).

The proportion mentioning eating more healthily as a specific action they could take declined steadily with age among both men and women, with 16 to 24 year olds more than twice as likely as those aged 65 or over to mention it as a step they could take (69% compared with 27% to 31%). When the views of just those falling short of five-a-day target for fruit and vegetable consumption were examined the variation by age was even more pronounced (Figure 3D).   **Table 3.10**

% mentioning eating more healthily as specific step they could take to improve their health, 2008-2011 combined
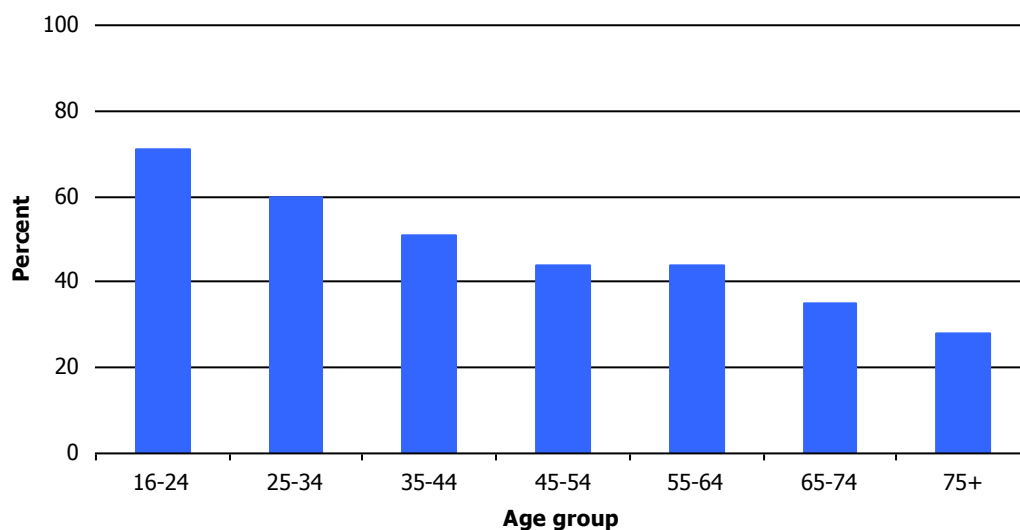
Base = Aged 16+ and consumed >5 portions of fruit and vegetables per day

The proportion mentioning weight control as one of the steps they could take to improve their health increased with age from 24% among 16 to 24 year olds to 51% of those aged 65 to 74, before dropping to 35% among those aged 75 and over (although it is important to note that the sample size for the 75 and over age group was quite small). A pattern by age was still evident when the views of just those who were overweight or obese were examined, with those aged 35 to 74 most likely to mention that taking steps to control weight was an action they could take to improve their health (ranging between 55% to 62% compared with 40% of 16 to 24 year olds and 45% of those aged 75 or over) (Data not shown). **Table 3.10**

Subsequent chapters explore in more detail just how motivated individuals were to take some of these steps and examine the extent to which motivation levels vary by gender and age.

3.5.2 Steps to lead a healthier life by area deprivation (SIMD)

Exploring differences by area deprivation revealed that, whilst the proportion reporting that they could take steps to control their weight was similar across the SIMD quintiles, people in the most deprived areas were more likely than those living elsewhere to mention eating more healthily.

Being more physically active was more frequently mentioned in less deprived areas (65% of those living in the least deprived areas - SIMD quintile 5, compared with 54% of those in the most deprived areas – SIMD quintile 1). When the analysis was restricted to those who fell short of the activity recommendations it was still the case that those in less deprived areas were most likely to mention being more active as a step they could take to make their life healthier (72% compared with 56% in the most deprived quintile) (Data not shown).

The most striking difference was in relation to smoking where 30% of people living in the most deprived areas mentioned quitting as a step they could take to improve their health, compared with only 12% in the least deprived area. When the views of just smokers were examined, quitting was more commonly mentioned than cutting down by smokers in all areas. However, smokers in the most deprived areas were less likely than those in less deprived areas to choose stopping smoking (65% of those in SIMD quintile 1 compared with 88% in SIMD quintile 5) and more likely than them to mention cutting down as a specific action they could take (26% compared with 13% in SIMD quintile 5) (Data not shown).

There was a much less marked, but still significant, relationship between reducing alcohol consumption and area deprivation. However, in relation to alcohol it was those in the least deprived areas who were more likely to have mentioned reducing their alcohol intake: 18% compared with 14% of those in the most deprived areas.   **Table 3.11**

3.6 DISCUSSION

The message that individuals can, in principle, influence their own health through their lifestyle choices seems to be commonly accepted, with over 90% of adults in Scotland believing they had 'quite a lot' or 'a great deal' of influence over their own health. While only a minority (13%) described themselves as 'very healthy', three-quarters (74%) of the population felt they were 'fairly healthy'. This suggests that people felt that there was more they could do to be healthy and is supported by the finding that 78% agreed that there were steps they could take to make their lives healthier.

It is therefore possible to conclude that a large majority of the Scottish population recognise that the lifestyle choices they make can contribute to better health. Subsequent chapters on alcohol, smoking, diet, physical activity and weight explore the relationship between knowledge, motivations to change and actual behaviour. These chapters highlight the policy challenge to understand why, if people recognise changes could be made they do not necessarily translate this into action.

There are different challenges presented by those who did not want to make any changes (4%) or who felt it was too difficult to do so (3%). Previous KAM reports showed that the main reasons people felt it was too difficult to make their life healthier were: poor health, mobility issues or old age.[5] This is consistent with this chapter's finding that older people are less likely than those under 55 to feel that they could influence their own health.

However, the proportion believing themselves to lead 'very healthy' lifestyles is lower during middle age, compared to both younger and older people. It may be that there are differing assessments of what constitutes 'healthy' among different generations and age groups or the difference may indicate that health behaviours are linked to stage of life as much as physical age. If the latter is the case, this may mean that campaigns to encourage better health behaviour need

to take full account of the lifestyles and pressures experienced by people of different ages.

Finally, the findings in this chapter reflect well known challenges regarding health and wider social inequality. The proportions feeling they had little or no influence over their health and that they led 'fairly' or 'very unhealthy' lives were both significantly higher in more deprived areas. The most recent SHeS annual report showed that in 2011 people in the most deprived areas were also more likely to exhibit a range of health behaviours that put them at risk of ill health e.g. more likely to be smokers and more likely to be in the 'low activity' group for physical activity.[6] However, encouragingly the proportion who felt able to make changes to improve their health did not vary by area deprivation. So although those living in more deprived areas were more likely to exhibit a range of health-damaging behaviours, suggesting that they are more likely to benefit from making changes to their behaviour, they were less likely than those in less deprived areas to be aware of the changes they could make to improve their health. The subsequent chapters will explore the relationship between people's knowledge of healthy behaviours, actual behaviour and motivations to change in more detail.

References and notes

[1] The current strategies for the public sector to tackle the root causes of health inequalities in Scotland are Equally Well, together with Achieving our Potential, and the Early Years Framework. In addition, the Christie Commission Report is a key driver for policy and budget allocation, since it emphasizes the need to address the causes of inequalities and the need for preventative spend. More details can be found at:
Equally Well - http://www.scotland.gov.uk/Publications/2008/06/25104032/0
Achieving Our Potential - http://www.scotland.gov.uk/Publications/2008/11/20103815/0
Christie Commission - http://www.scotland.gov.uk/About/Review/publicservicescommission
Source: http://www.healthscotland.com/equalities/health-inequalities/index.aspx

[2] http://www.takelifeon.co.uk/

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Table list

Table 3.1   Perceived ability to influence own health, 2008, 2009, 2010, 2011, by sex

Aged 16 and over   *2008, 2009, 2010, 2011*

Perceived ability to influence own health	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
Men				
A great deal	55	49	54	50
95% C.I.	(50.1-59.3)	(44.2-53.6)	(49.7-58.8)	(46.1-54.7)
Quite a lot	37	43	37	42
95% C.I.	(33.0-42.0)	(38.6-47.6)	(33.2-41.6)	(37.4-45.8)
A little	7	6	8	7
95% C.I.	(5.2-9.6)	(4.6-8.6)	(6.0-10.0)	(5.1-10.0)
None at all	1	2	1	1
95% C.I.	(0.4-1.6)	(1.0-3.0)	(0.3-1.2)	(0.3-0.4)
Women				
A great deal	54	54	51	51
95% C.I.	(50.6-58.1)	(50.7-57.8)	(46.9-54.0)	(47.9-55.0)
Quite a lot	38	40	42	42
95% C.I.	(34.4-41.3)	(36.1-43.2)	(38.8-46.0)	(38.3-45.1)
A little	7	6	6	6
95% C.I.	(5.1-8.8)	(4.4-7.3)	(4.7-7.7)	(4.5-7.8)
None at all	1	1	1	1
95% C.I.	(0.7-2.0)	(0.2-1.0)	(0.6-2.1)	(0.5-1.7)
All adults				
A great deal	55	52	52	51
95% C.I.	(51.6-57.5)	(48.7-54.6)	(49.5-55.1)	(48.0-53.9)
Quite a lot	38	41	40	42
95% C.I.	(34.8-40.5)	(38.4-44.1)	(37.3-42.7)	(38.9-44.4)
A little	7	6	7	7
95% C.I.	(5.6-8.4)	(4.9-7.3)	(5.7-8.2)	(5.3-8.1)
None at all	1	1	1	1
95% C.I.	(0.7-1.5)	(0.7-1.7)	(0.5-1.4)	(0.5-1.5)
Bases (weighted):				
Men	*882*	*967*	*1087*	*1089*
Women	*961*	*1053*	*1185*	*1182*
All adults	*1843*	*2020*	*2272*	*2271*
Bases (unweighted):				
Men	*795*	*865*	*923*	*930*
Women	*1047*	*1152*	*1345*	*1337*
All adults	*1842*	*2017*	*2268*	*2267*

Table 3.2   Perceived ability to influence own health, 2008-2011 combined, by age and sex

Aged 16 and over   *2008-2011 combined*

Perceived ability to influence own health	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
A great deal	55	57	54	52	48	48	44	52
95% C.I.	(47.3-63.3)	(50.9-62.6)	(48.8-59.1)	(47.0-56.9)	(43.5-52.7)	(43.4-53.3)	(38.8-50.3)	(49.8-54.4)
Quite a lot	38	37	38	39	44	44	44	40
95% C.I.	(30.3-45.6)	(31.4-42.8)	(33.2-43.3)	(33.8-43.5)	(39.4-48.5)	(38.8-48.4)	(38.7-49.8)	(37.7-42.1)
A little	7	6	7	8	7	6	9	7
95% C.I.	(4.0-12.0)	(3.5-8.8)	(5.1-9.8)	(6.0-11.9)	(4.6-9.4)	(4.3-8.4)	(6.7-13.1)	(6.1-8.2)
None at all	-	1	1	1	1	2	2	1
95% C.I.	-	(0.2-2.5)	(0.3-1.7)	(0.5-2.1)	(0.7-2.6)	(1.0-4.4)	(0.8-4.8)	(0.7-1.4)
Women								
A great deal	45	59	57	61	53	46	37	53
95% C.I.	(38.1-51.1)	(54.9-63.4)	(52.9-61.2)	(56.6-64.7)	(49.1-57.2)	(42.3-50.4)	(33.4-41.7)	(50.8-54.4)
Quite a lot	50	36	36	33	38	46	52	40
95% C.I.	(43.5-56.5)	(31.6-39.9)	(32.1-40.1)	(29.3-37.0)	(34.6-42.5)	(42.3-50.4)	(47.9-56.4)	(38.7-42.2)
A little	5	5	6	5	7	7	9	6
95% C.I.	(3.1-8.6)	(3.4-7.6)	(4.4-8.4)	(3.2-6.4)	(5.7-9.8)	(4.9-8.9)	(6.5-11.5)	(5.3-6.9)
None at all	0	0	1	2	1	1	2	1
95% C.I.	(0.1-1.3)	(0.0-0.5)	(0.3-2.4)	(1.0-3.0)	(0.4-1.8)	(0.3-2.0)	(1.0-3.2)	(0.6-1.2)
All adults								
A great deal	50	58	56	57	51	47	40	52
95% C.I.	(45.0-55.2)	(54.3-61.6)	(52.3-58.9)	(53.2-59.7)	(47.7-53.8)	(44.1-50.4)	(36.8-43.7)	(50.9-53.8)
Quite a lot	44	36	37	36	41	45	49	40
95% C.I.	(38.8-48.7)	(32.9-39.8)	(33.9-40.3)	(32.7-38.8)	(38.2-44.1)	(42.0-48.1)	(45.7-52.4)	(38.8-41.6)
A little	6	5	7	6	7	6	9	7
95% C.I.	(4.1-8.9)	(3.9-7.3)	(5.3-8.3)	(5.0-8.3)	(5.7-8.8)	(5.0-7.9)	(7.2-11.1)	(5.9-7.2)
None at all	0	0	1	1	1	1	2	1
95% C.I.	(0.0-0.6)	(0.1-1.2)	(0.4-1.6)	(0.9-2.2)	(0.7-1.8)	(0.8-2.5)	(1.1-3.1)	(0.7-1.2)
Bases (weighted):								
Men	*600*	*645*	*699*	*728*	*629*	*432*	*292*	*4025*
Women	*575*	*643*	*763*	*786*	*661*	*500*	*452*	*4381*
All adults	*1175*	*1287*	*1462*	*1514*	*1291*	*933*	*744*	*8406*
Bases (unweighted):								
Men	*236*	*437*	*583*	*626*	*660*	*559*	*412*	*3513*
Women	*370*	*668*	*804*	*783*	*820*	*756*	*680*	*4881*
All adults	*606*	*1105*	*1387*	*1409*	*1480*	*1315*	*1092*	*8394*

Table 3.3   Perceived ability to influence own health, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Perceived ability to influence own health	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
A great deal	59	59	54	48	41
95% C.I.	(56.2-62.6)	(56.0-61.9)	(50.6-56.7)	(44.8-51.2)	(38.3-44.5)
Quite a lot	37	36	40	42	46
95% C.I.	(33.7-40.1)	(33.4-39.3)	(37.0-43.0)	(39.3-45.5)	(42.5-48.8)
A little	3	4	6	9	11
95% C.I.	(2.5-4.7)	(2.9-4.8)	(4.4-6.9)	(7.2-10.8)	(9.7-13.3)
None at all	0	1	1	1	2
95% C.I.	(0.1-0.6)	(0.6-1.6)	(0.6-1.5)	(0.5-1.5)	(1.1-2.6)
Bases (weighted):	*1634*	*1793*	*1631*	*1678*	*1670*
Bases (unweighted):	*1347*	*1781*	*1719*	*1692*	*1855*

**Table 3.4   Perception of lifestyle, 2008, 2009, 2010, 2011,
by sex**

Aged 16 and over   *2008, 2009, 2010, 2011*

Assessment of lifestyle	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
Men				
Very healthy	15	12	15	11
95% C.I.	(11.7-17.9)	(9.4-14.7)	(12.4-19.1)	(9.1-14.3)
Fairly healthy	73	69	69	75
95% C.I.	(68.5-76.5)	(64.9-73.1)	(64.5-72.6)	(70.8-78.6)
Fairly unhealthy	12	17	15	12
95% C.I.	(8.9-14.8)	(13.9-21.2)	(11.7-18.4)	(9.7-15.9)
Very unhealthy	1	2	1	1
95% C.I.	(0.6-2.5)	(0.9-3.6)	(0.6-2.1)	(0.6-2.2)
Women				
Very healthy	14	14	15	15
95% C.I.	(11.9-16.7)	(11.7-16.5)	(12.9-17.3)	(12.6-17.2)
Fairly healthy	72	75	74	74
95% C.I.	(68.7-75.0)	(72.2-78.4)	(70.7-76.2)	(71.0-76.4)
Fairly unhealthy	13	10	10	10
95% C.I.	(10.3-15.4)	(7.5-12.2)	(8.2-12.1)	(8.4-12.6)
Very unhealthy	1	1	2	1
95% C.I.	(0.8-2.2)	(0.5-2.0)	(0.9-2.6)	(0.7-2.0)
All adults				
Very healthy	14	13	15	13
95% C.I.	(12.4-16.5)	(11.2-14.9)	(13.3-17.3)	(11.5-15.0)
Fairly healthy	72	72	71	74
95% C.I.	(69.7-74.8)	(70.0-74.8)	(68.8-73.5)	(71.9-76.6)
Fairly unhealthy	12	13	12	11
95% C.I.	(10.3-14.1)	(11.3-15.5)	(10.5-14.3)	(9.6-13.4)
Very unhealthy	1	1	1	1
95% C.I.	(0.9-2.0)	(0.8-2.3)	(0.9-2.0)	(0.7-1.7)
Bases (weighted):				
Men	*882*	*967*	*1090*	*1091*
Women	*963*	*1055*	*1188*	*1184*
All adults	*1845*	*2022*	*2278*	*2275*
Bases (unweighted):				
Men	*795*	*866*	*926*	*931*
Women	*1050*	*1155*	*1351*	*1342*
All adults	*1845*	*2021*	*2277*	*2273*

Table 3.5   Perception of lifestyle, 2008-2011 combined, by age and sex

Assessment of lifestyle	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Very healthy	16	11	9	9	14	19	22	13
95% C.I.	(10.8-23.5)	(7.9-14.3)	(6.7-12.7)	(6.7-12.5)	(11.3-17.7)	(15.8-23.0)	(18.3-27.1)	(11.9-14.9)
Fairly healthy	62	72	72	75	73	73	71	71
95% C.I.	(53.6-69.3)	(66.5-77.4)	(67.6-76.8)	(70.0-78.6)	(69.1-77.2)	(68.7-76.8)	(66.0-75.9)	(69.2-73.3)
Fairly unhealthy	21	16	17	15	11	7	5	14
95% C.I.	(15.1-28.1)	(11.5-21.1)	(13.0-21.0)	(12.3-19.2)	(8.5-13.9)	(5.2-9.7)	(2.8-7.6)	(12.5-15.9)
Very unhealthy	1	1	2	1	1	1	2	1
95% C.I.	(0.3-5.0)	(0.5-3.6)	(1.0-3.0)	(0.4-1.7)	(0.8-2.7)	(0.4-1.9)	(0.6-4.8)	(0.9-1.8)
Women								
Very healthy	12	11	10	11	18	21	23	14
95% C.I.	(8.0-17.3)	(8.9-14.4)	(7.6-12.4)	(9.1-14.3)	(15.3-21.7)	(18.0-24.5)	(19.4-26.2)	(13.4-15.7)
Fairly healthy	74	76	77	74	70	73	70	74
95% C.I.	(67.6-79.4)	(72.5-79.7)	(73.1-79.8)	(70.6-77.6)	(65.9-73.2)	(69.4-76.4)	(66.6-74.1)	(72.2-75.1)
Fairly unhealthy	14	12	12	11	11	6	6	11
95% C.I.	(9.7-19.1)	(9.1-14.7)	(9.6-14.8)	(9.1-14.4)	(8.5-13.4)	(4.0-7.8)	(4.5-8.8)	(9.5-11.7)
Very unhealthy	0	1	2	3	1	0	1	1
95% C.I.	(0.1-1.7)	(0.3-1.6)	(1.0-3.0)	(1.7-4.5)	(0.7-2.4)	(0.1-0.9)	(0.2-1.7)	(0.9-1.7)
All adults								
Very healthy	14	11	10	10	16	20	23	14
95% C.I.	(10.6-18.4)	(9.1-13.3)	(7.8-11.6)	(8.5-12.5)	(14.1-18.8)	(17.8-22.8)	(20.0-25.3)	(13.0-14.9)
Fairly healthy	68	74	75	74	71	73	71	73
95% C.I.	(62.7-72.3)	(70.9-77.4)	(71.7-77.3)	(71.5-77.1)	(68.7-74.1)	(70.2-75.6)	(67.7-73.6)	(71.3-73.7)
Fairly unhealthy	17	14	14	13	11	6	6	12
95% C.I.	(13.7-21.8)	(11.1-16.7)	(12.0-16.7)	(11.4-15.7)	(9.2-12.7)	(5.0-7.9)	(4.3-7.5)	(11.3-13.3)
Very unhealthy	1	1	2	2	1	1	1	1
95% C.I.	(0.3-2.5)	(0.5-2.1)	(1.2-2.5)	(1.2-2.8)	(0.9-2.1)	(0.2-1.0)	(0.5-2.2)	(1.0-1.6)
Bases (weighted):								
Men	*600*	*646*	*699*	*729*	*629*	*434*	*294*	*4030*
Women	*575*	*645*	*763*	*786*	*662*	*502*	*457*	*4391*
All adults	*1175*	*1291*	*1462*	*1515*	*1292*	*936*	*750*	*8420*
Bases (unweighted):								
Men	*236*	*438*	*583*	*626*	*659*	*561*	*415*	*3518*
Women	*370*	*671*	*804*	*783*	*822*	*759*	*689*	*4898*
All adults	*606*	*1109*	*1387*	*1409*	*1481*	*1320*	*1104*	*8416*

Table 3.6   Perception of lifestyle, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Assessment of lifestyle	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Very healthy	19	17	14	9	10
95% C.I.	(17.0-21.9)	(14.8-19.2)	(12.0-16.4)	(7.9-11.2)	(8.2-11.7)
Fairly healthy	72	73	74	74	70
95% C.I.	(68.5-74.3)	(70.8-76.0)	(70.7-76.4)	(71.5-77.0)	(67.0-72.4)
Fairly unhealthy	9	9	11	15	17
95% C.I.	(7.1-11.4)	(7.2-10.8)	(9.5-13.8)	(12.6-17.5)	(15.2-19.6)
Very unhealthy	0	1	1	1	3
95% C.I.	(0.1-0.5)	(0.4-1.5)	(0.5-1.4)	(0.8-2.2)	(2.3-4.3)
Bases (weighted):	*1637*	*1797*	*1633*	*1683*	*1671*
Bases (unweighted):	*1350*	*1786*	*1724*	*1701*	*1855*

Table 3.7   Ability to make own life healthier, 2008, 2009, 2010, 2011, by sex

Aged 16 and over   *2008, 2009, 2010, 2011*

Ability to make own life healthier	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
Men				
Yes	75	81	77	77
95% C.I.	(71.5-78.9)	(77.3-83.6)	(73.3-80.5)	(73.0-80.2)
No, already lead a healthy life	16	13	15	16
95% C.I.	(13.1-19.4)	(10.9-16.3)	(12.4-18.6)	(12.9-19.2)
No, don't want to make changes to life	5	3	5	4
95% C.I.	(3.4-6.7)	(2.0-5.0)	(3.3-7.1)	(2.4-6.5)
No, too difficult to do anything	4	3	3	3
95% C.I.	(2.6-5.5)	(1.9-4.2)	(1.9-4.0)	(2.3-5.2)
Women				
Yes	76	77	74	78
95% C.I.	(73.0-78.6)	(74.2-79.9)	(71.6-77.0)	(75.5-81.0)
No, already lead a healthy life	15	15	18	15
95% C.I.	(12.9-17.6)	(12.4-17.1)	(15.4-20.1)	(12.3-17.1)
No, don't want to make changes to life	5	4	3	4
95% C.I.	(3.7-6.6)	(3.0-5.6)	(2.5-4.8)	(2.6-5.3)
No, too difficult to do anything	4	4	5	3
95% C.I.	(3.1-5.4)	(3.0-5.4)	(3.5-5.9)	(2.5-4.4)
All adults				
Yes	76	79	76	78
95% C.I.	(73.3-77.9)	(76.5-81.0)	(73.3-77.9)	(75.2-79.9)
No, already lead a healthy life	16	14	17	15
95% C.I.	(13.7-17.6)	(12.3-16.0)	(14.5-18.6)	(13.2-17.4)
No, don't want to make changes to life	5	4	4	4
95% C.I.	(3.9-6.1)	(2.8-4.8)	(3.2-5.3)	(2.9-5.2)
No, too difficult to do anything	4	3	4	3
95% C.I.	(3.1-5.0)	(2.7-4.4)	(2.9-4.6)	(2.6-4.3)
Bases (weighted):				
Men	*879*	*965*	*1089*	*1085*
Women	*961*	*1053*	*1185*	*1182*
All adults	*1840*	*2018*	*2274*	*2268*
Bases (unweighted):				
Men	*792*	*864*	*925*	*926*
Women	*1046*	*1153*	*1348*	*1339*
All adults	*1838*	*2017*	*2273*	*2265*

Table 3.8   Ability to make own life healthier, 2008-2011 combined, by age and sex

Ability to make own life healthier	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Yes	82	89	87	86	77	55	33	78
95% C.I.	(74.8-87.9)	(84.2-91.9)	(83.3-90.5)	(82.7-89.5)	(72.6-80.4)	(50.7-60.1)	(27.6-38.4)	(75.8-79.3)
No, already lead a healthy life	14	10	10	8	16	27	41	15
95% C.I.	(8.8-21.1)	(6.8-13.3)	(6.8-13.3)	(5.8-11.5)	(12.8-19.6)	(23.4-31.8)	(35.5-46.3)	(13.7-16.7)
No, don't want to make changes to life	4	1	2	2	3	10	13	4
95% C.I.	(1.7-8.5)	(0.2-7.2)	(0.8-4.3)	(1.3-4.4)	(2.1-5.4)	(7.6-13.0)	(10.3-17.4)	(3.3-5.1)
No, too difficult to do anything	-	1	1	3	4	7	13	3
95% C.I.	-	(0.1-1.9)	(0.5-2.8)	(1.8-4.8)	(2.6-5.9)	(5.1-10.1)	(9.6-17.5)	(2.6-3.8)
Women								
Yes	86	89	89	85	75	58	32	76
95% C.I.	(81.2-90.1)	(86.0-91.4)	(86.5-91.7)	(82.0-87.9)	(71.8-78.8)	(53.8-61.8)	(27.7-35.9)	(75.0-77.8)
No, already lead a healthy life	9	9	7	9	17	28	42	15
95% C.I.	(6.2-13.9)	(6.8-11.9)	(5.1-9.3)	(7.2-12.1)	(14.2-20.4)	(24.1-31.2)	(37.6-46.1)	(14.3-16.7)
No, don't want to make changes to life	4	1	2	3	2	7	13	4
95% C.I.	(2.1-7.5)	(0.4-2.1)	(0.9-3.7)	(1.7-4.5)	(1.5-4.0)	(5.5-9.5)	(10.5-16.1)	(3.4-4.7)
No, too difficult to do anything	0	1	2	3	5	7	13	4
95% C.I.	(0.1-1.1)	(0.4-2.2)	(1.1-3.2)	(1.7-4.2)	(3.6-7.0)	(5.5-10.0)	(10.9-16.5)	(3.5-4.6)
All adults								
Yes	84	89	88	86	76	57	32	77
95% C.I.	(79.7-87.9)	(86.2-91.0)	(86.0-90.5)	(83.4-87.9)	(73.4-78.6)	(53.6-59.8)	(28.9-35.5)	(75.8-78.1)
No, already lead a healthy life	12	9	8	9	17	27	41	15
95% C.I.	(8.4-15.9)	(7.5-11.6)	(6.5-10.3)	(7.1-10.9)	(14.3-18.9)	(24.8-30.3)	(38.1-44.8)	(14.3-16.3)
No, don't want to make changes to life	4	1	2	3	3	9	13	4
95% C.I.	(2.4-6.6)	(0.4-3.2)	(1.1-3.2)	(1.8-3.8)	(2.1-4.2)	(7.0-10.3)	(11.2-15.5)	(3.6-4.6)
No, too difficult to do anything	0	1	2	3	4	7	13	4
95% C.I.	(0.1-0.5)	(0.4-1.5)	(0.9-2.5)	(2.0-3.9)	(3.5-5.8)	(5.8-9.2)	(11.2-15.8)	(3.2-4.0)

Continued…

Table 3.8 *- Continued*

Aged 16 and over *2008-2011 combined*

Ability to make own life healthier	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	*596*	*645*	*697*	*729*	*628*	*432*	*292*	*4019*
Women	*575*	*644*	*763*	*785*	*660*	*500*	*455*	*4382*
All adults	*1170*	*1289*	*1460*	*1514*	*1288*	*932*	*748*	*8401*
Bases (unweighted):								
Men	*234*	*437*	*581*	*626*	*656*	*560*	*413*	*3507*
Women	*369*	*670*	*805*	*782*	*820*	*755*	*685*	*4886*
All adults	*603*	*1107*	*1386*	*1408*	*1476*	*1315*	*1098*	*8393*

Table 3.9   Things that could be done to make own life healthier, 2008, 2009, 2010, 2011

Aged 16 and over who think they can make their life healthier   2008, 2009, 2010, 2011

Things that could be done to make own life healthier	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Cut down smoking	7	5	6	6
95% C.I.	(5.2-8.8)	(4.1-6.7)	(4.3-7.1)	(5.2-6.8)
Stop smoking	22	20	21	19
95% C.I.	(19.4-24.8)	(17.5-22.8)	(18.2-23.2)	(19.0-21.7)
Cut down the amount of alcohol I drink	18	16	15	18
95% C.I.	(15.6-21.3)	(13.9-18.7)	(12.4-16.8)	(15.6-18.1)
Stop drinking alcohol	5	4	4	6
95% C.I.	(4.0-7.5)	(2.8-6.0)	(2.8-5.3)	(4.1-5.6)
Be more physically active	58	59	57	59
95% C.I.	(55.1-61.4)	(55.5-62.1)	(54.2-60.6)	(56.9-60.0)
Control weight	39	39	42	39
95% C.I.	(36.0-42.2)	(35.3-41.7)	(38.7-45.0)	(37.3-40.4)
Eat more healthily	46	52	45	48
95% C.I.	(42.9-49.7)	(48.4-55.0)	(41.8-48.6)	(46.3-49.7)
Reduce stress	19	18	19	17
95% C.I.	(16.3-21.2)	(15.5-20.9)	(17.0-22.1)	(17.1-19.6)
None of these	2	2	2	2
95% C.I.	(1.1-2.7)	(1.0-2.3)	(1.2-2.9)	(1.3-2.1)
Bases (weighted):				
Men	*665*	*781*	*840*	*837*
Women	*732*	*813*	*883*	*928*
All adults	*1397*	*1593*	*1723*	*1765*
Bases (unweighted):				
Men	*562*	*648*	*685*	*677*
Women	*747*	*843*	*948*	*1005*
All adults	*1309*	*1491*	*1633*	*1682*

Table 3.10   Things that could be done to make own life healthier, 2008-2011 combined, by age and sex

Aged 16 and over who think they can make their life healthier   *2008-2011 combined*

Things that could be done to make own life healthier	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Cut down smoking	6	6	8	6	5	4	6	6
95% C.I.	(3.1-10.9)	(3.9-9.7)	(5.5-12.8)	(4.3-9.5)	(3.4-7.7)	(2.1-7.7)	(2.7-10.9)	(5.1-7.7)
Stop smoking	21	29	24	24	15	12	13	22
95% C.I.	(15.0-27.9)	(23.9-35.0)	(20.2-28.8)	(19.5-28.4)	(11.8-19.4)	(8.4-16.2)	(7.0-21.4)	(19.7-23.9)
Cut down the amount of alcohol I drink	27	23	19	22	19	21	13	22
95% C.I.	(19.8-35.8)	(18.1-28.5)	(15.5-23.5)	(17.8-26.8)	(15.3-23.4)	(16.5-27.2)	(7.6-20.3)	(19.6-23.8)
Stop drinking alcohol	11	5	7	6	3	3	3	6
95% C.I.	(6.5-18.0)	(2.5-8.0)	(4.8-10.5)	(4.4-9.3)	(1.7-5.3)	(1.1-6.5)	(1.0-7.6)	(4.8-7.4)
Be more physically active	55	59	61	54	50	55	56	56
95% C.I.	(46.1-62.8)	(52.4-64.6)	(55.4-65.6)	(48.7-59.5)	(44.8-55.4)	(48.5-61.7)	(46.5-65.2)	(53.3-58.3)
Control weight	22	23	37	37	50	45	27	34
95% C.I.	(15.9-30.7)	(17.9-29.2)	(32.3-42.4)	(31.7-42.5)	(44.8-55.4)	(38.4-52.0)	(18.7-36.3)	(32.1-37.0)
Eat more healthily	72	57	51	39	41	33	25	49
95% C.I.	(63.8-78.9)	(50.4-62.7)	(45.2-56.1)	(33.8-44.2)	(36.4-46.8)	(26.8-39.7)	(17.4-34.1)	(46.6-51.8)
Reduce stress	11	18	19	25	18	11	3	18
95% C.I.	(6.9-18.0)	(14.1-23.2)	(15.1-23.2)	(20.1-29.9)	(14.7-23.0)	(7.0-16.2)	(1.0-8.2)	(15.7-19.6)
None of these	1	1	0	2	2	2	10	1
95% C.I.	(0.2-3.0)	(0.4-2.8)	(0.1-1.8)	(0.6-4.5)	(1.1-3.5)	(0.5-4.3)	(5.0-17.8)	(1.0-2.1)
Women								
Cut down smoking	7	4	6	7	6	4	4	6
95% C.I.	(4.4-10.3)	(2.5-5.8)	(4.7-8.9)	(4.5-9.6)	(3.8-8.0)	(1.8-7.1)	(2.0-7.1)	(4.7-6.6)
Stop smoking	22	21	21	21	17	11	7	19
95% C.I.	(17.4-28.3)	(17.1-24.6)	(17.4-24.2)	(17.3-25.0)	(14.0-21.2)	(8.2-14.4)	(4.4-12.0)	(17.4-20.7)
Cut down the amount of alcohol I drink	14	15	14	14	10	6	4	12
95% C.I.	(9.9-19.9)	(11.8-18.4)	(11.2-17.3)	(11.0-16.9)	(7.4-12.8)	(3.6-8.4)	(2.0-9.1)	(11.0-13.7)
Stop drinking alcohol	6	3	4	4	3	2	-	4
95% C.I.	(1.5-3.7)	(0.8-1.7)	(0.8-2.5)	(0.9-2.5)	(0.9-2.0)	(0.8-1.1)	(0.0-0.0)	(0.4-3.0)
Be more physically active	66	70	61	62	55	47	49	61
95% C.I.	(59.3-72.6)	(65.7-74.0)	(56.5-64.8)	(57.4-66.1)	(50.8-60.0)	(42.0-52.7)	(41.0-56.6)	(58.9-62.9)
Control weight	25	31	47	50	53	56	41	43
95% C.I.	(19.4-31.2)	(26.7-35.3)	(42.4-50.7)	(45.8-54.7)	(48.0-57.1)	(50.5-61.3)	(33.5-49.0)	(40.9-44.8)
Eat more healthily	66	57	44	44	39	30	28	47
95% C.I.	(59.5-72.4)	(51.9-61.6)	(40.2-48.3)	(39.9-48.9)	(34.6-43.5)	(25.5-35.4)	(21.3-35.6)	(44.8-49.1)
Reduce stress	16	25	21	21	18	10	9	19
95% C.I.	(11.6-22.1)	(21.2-29.4)	(17.8-24.7)	(17.9-25.2)	(14.4-21.3)	(7.4-13.7)	(5.4-14.3)	(17.5-20.8)
None of these	1	1	2	1	2	4	9	2
95% C.I.	(0.2-3.2)	(0.2-1.7)	(0.8-3.3)	(0.4-3.1)	(1.0-3.8)	(2.5-7.2)	(5.3-13.7)	(1.4-2.4)

Continued…

Table 3.10   - Continued

Aged 16 and over who think they can make their life healthier   *2008-2011 combined*

Things that could be done to make own life healthier	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
Cut down smoking	6	5	7	7	5	4	5	6
95% C.I.	(4.3-9.2)	(3.6-6.9)	(5.6-9.7)	(4.9-8.6)	(4.0-7.0)	(2.4-6.1)	(2.8-7.2)	(5.2-6.8)
Stop smoking	22	25	22	22	16	11	9	20
95% C.I.	(17.6-26.1)	(21.5-28.5)	(19.7-25.2)	(19.5-25.2)	(13.8-19.0)	(9.1-14.0)	(6.4-13.7)	(19.0-21.7)
Cut down the amount of alcohol I drink	21	19	16	18	14	13	8	17
95% C.I.	(16.2-25.8)	(15.9-22.2)	(14.0-19.1)	(15.2-20.6)	(12.1-16.9)	(10.1-15.8)	(5.0-11.5)	(15.6-18.1)
Stop drinking alcohol	9	4	5	5	3	2	1	5
95% C.I.	(5.8-12.4)	(2.5-5.6)	(4.0-7.3)	(3.8-6.9)	(2.2-4.7)	(1.4-4.3)	(0.4-3.1)	(4.1-5.6)
Be more physically active	60	64	61	58	53	51	52	58
95% C.I.	(54.9-65.7)	(60.5-67.9)	(57.3-64.0)	(54.6-61.5)	(49.3-56.3)	(46.6-55.1)	(45.7-57.6)	(56.9-60.0)
Control weight	24	27	42	44	51	51	35	39
95% C.I.	(19.2-28.7)	(23.5-30.7)	(38.9-45.4)	(40.3-47.3)	(47.9-54.8)	(46.7-55.4)	(29.5-41.5)	(37.3-40.4)
Eat more healthily	69	57	47	42	40	31	27	48
95% C.I.	(63.8-73.9)	(52.7-60.6)	(43.9-50.6)	(38.4-45.2)	(36.9-43.6)	(27.6-35.6)	(21.6-32.4)	(46.3-49.7)
Reduce stress	14	22	20	23	18	10	7	18
95% C.I.	(10.4-18.0)	(18.7-24.9)	(17.5-22.7)	(20.1-26.1)	(15.5-20.8)	(8.0-13.3)	(4.1-10.1)	(17.1-19.6)
None of these	1	1	1	1	2	3	9	2
95% C.I.	(0.3-2.1)	(0.4-1.7)	(0.5-2.0)	(0.7-2.9)	(1.3-3.0)	(1.9-4.8)	(6.1-13.2)	(1.3-2.1)
Bases (weighted):								
Men	*494*	*572*	*611*	*631*	*482*	*240*	*97*	*3127*
Women	*496*	*574*	*682*	*668*	*498*	*291*	*146*	*3355*
All adults	*990*	*1146*	*1293*	*1299*	*980*	*531*	*242*	*6483*
Bases (unweighted):								
Men	*201*	*390*	*520*	*538*	*499*	*296*	*128*	*2572*
Women	*317*	*595*	*718*	*660*	*625*	*429*	*199*	*3543*
All adults	*518*	*985*	*1238*	*1198*	*1124*	*725*	*327*	*6115*

Table 3.11   Things that could be done to make own life healthier, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over who think they can make their life healthier　　　　*2008-2011 combined*

Things that could be done to make own life healthier	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Cut down smoking	2	5	6	5	12
95% C.I.	(1.3-3.4)	(3.3-6.3)	(4.5-8.3)	(4.0-7.0)	(9.6-14.3)
Stop smoking	12	14	20	27	30
95% C.I.	(9.5-14.6)	(11.8-16.7)	(17.3-23.5)	(23.4-29.9)	(26.8-32.9)
Cut down alcohol	18	19	18	14	14
95% C.I.	(15.5-21.4)	(16.7-22.6)	(15.1-21.0)	(11.3-16.2)	(12.1-17.2)
Stop drinking alcohol	4	4	6	5	5
95% C.I.	(2.6-5.7)	(2.9-6.1)	(4.6-8.4)	(3.5-7.0)	(3.5-6.9)
Be more physically active	65	61	55	57	54
95% C.I.	(61.4-68.8)	(57.7-64.2)	(51.7-58.8)	(53.0-60.1)	(50.2-57.2)
Control weight	38	42	37	39	38
95% C.I.	(34.1-41.3)	(38.7-45.7)	(33.6-40.8)	(35.2-42.0)	(35.0-41.6)
Eat more healthily	47	47	47	46	53
95% C.I.	(43.4-51.3)	(43.1-50.1)	(43.2-50.7)	(42.4-50.1)	(49.8-56.9)
Reduce stress	19	19	18	18	17
95% C.I.	(16.5-22.6)	(16.5-21.6)	(15.5-21.3)	(15.4-21.4)	(14.4-19.7)
None of these	2	1	1	2	2
95% C.I.	(1.2-3.3)	(0.9-2.3)	(0.9-2.4)	(1.1-2.9)	(0.9-2.6)
Bases (weighted):	*1273*	*1420*	*1237*	*1295*	*1257*
Bases (unweighted):	*987*	*1318*	*1236*	*1227*	*1347*

Alcohol

Chapter 4
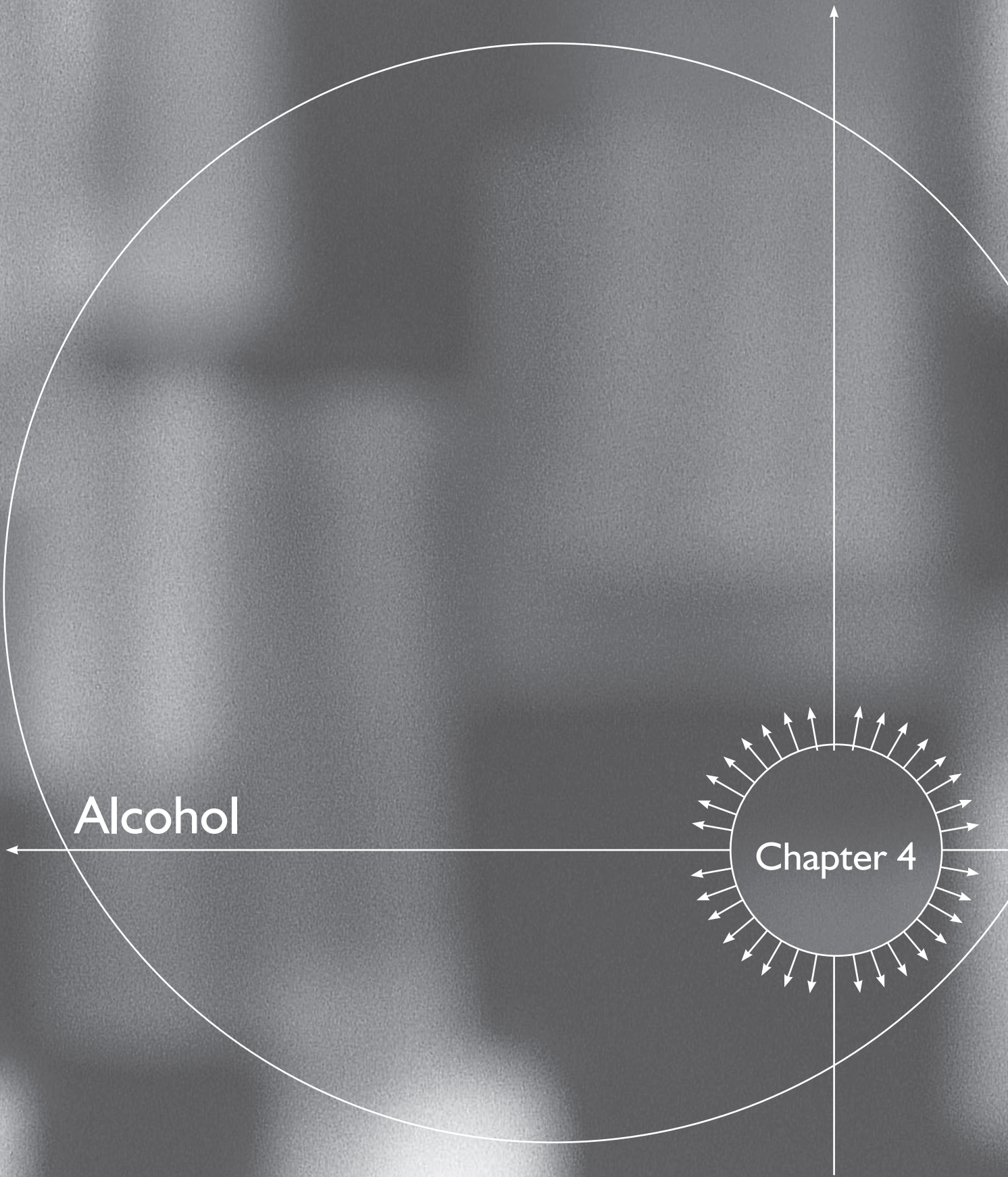
4 ALCOHOL

Jane Perry

SUMMARY

- In 2011, more than three-quarters (82%) of adults in Scotland described themselves as occasional, light or moderate drinkers, while just 4% considered themselves to be heavy or quite heavy drinkers.
- Awareness of the concept of measuring alcohol in units was very high with just 4% of adults in 2011 unfamiliar with the practice.
- Awareness of the existence of government advice on maximum daily unit consumption was also high in 2011, with just 3% stating that they did not know there were recommendations.
- Women, older people and those living in more deprived areas were least familiar with the existence of government recommendations on daily unit consumption.
- In 2011, one in six (17%) adults were able to correctly identify the recommended daily maximum number of units for their sex.
- Men were significantly more likely than women to know the recommended daily maximum number of units for their sex (20% compared with 11%). Women were more likely than men to underestimate the maximum number of units the government advised they consume (52% compared with 44%), whereas men were more likely to overestimate the maximum number of units advised (14% compared with 6%).
- Knowledge of the recommended maximum daily units was lowest among those aged 65 or over.
- In 2011, the majority of adults (62%) did not know that the government advise a certain number of alcohol-free days each week. Of those who had heard of the guidance, a fifth were broadly correct, stating either 1-2 or 2-3 days as the number of alcohol-free days advised. The advice is to have at least two alcohol free days per week.
- Knowledge of the number of alcohol-free days advised was highest among women, those aged 45 to 64 and those living in Scotland's less deprived areas.
- In 2011, around one in ten (11%) adults reported that they had taken action to reduce their alcohol intake in the previous 12 months. However, a third of adults (34%) had not taken any steps to reduce their consumption and weren't planning on doing so in the near future yet drank outwith the government's guidelines.
- Knowledge, behaviour and motivation to change behaviour in relation to alcohol consumption have all remained largely unchanged among the adult population in Scotland in the 2008 to 2011 period.

4.1 INTRODUCTION

The impact of alcohol misuse on a person's health and wellbeing is well documented. Excessive consumption contributes to a wide range of health problems, including high blood pressure, chronic liver disease and cirrhosis, pancreatitis, some cancers and mental ill health.[1,2,3] The burden of harm from misuse extends far beyond the individual however with vast and wide reaching consequences for families, communities and society as a whole.[4]

Scotland's relationship with alcohol has been troubled. Since the early 1980s, alcohol-related hospital admissions have quadrupled, and death rates have nearly tripled.[5] A report published in 2009 attributed 5% of deaths in Scotland to alcohol,[6] while the annual costs of excessive alcohol consumption are estimated to be £3.56 billion.[7] While the 'Monitoring and Evaluating Scotland's Alcohol Strategy Second Annual Report'[4] points to some improvements in recent years, it is also careful to stress that Scotland fairs poorly on alcohol-related harm when compared with the UK and central and western European counterparts.[8]

The Scottish Government's strategic approach to tackling the problem was published in 'Changing Scotland's Relationship with Alcohol: A Framework for Action.'[9] One of the four areas on which the framework proposed action was the fostering of positive public attitudes towards alcohol, making individuals better placed to make positive choices about the role of alcohol in their lives. Establishing a more positive relationship with alcohol requires improved knowledge and awareness of alcohol and its associated risks among the public.

Alcohol consumption patterns vary across the population and, to date; campaigns targeted at the public reflect this.[10] For example, messages aimed at young people have tended to focus on the negative consequences of excessive drinking on single occasions with an emphasis on severe drunkenness (e.g. 'Don't Let Alcohol Ruin A Good Night Out'); suggestions to alternate soft drinks with alcohol, and reminders of the potential for unsafe or regretted sexual behaviour. In contrast, the messages about alcohol in the 'Take Life On' campaign focus on aspects related to more moderate consumption on a regular basis, such as knowledge of alcohol units, the calorie content of drinks, the recommendation to have at least two alcohol-free days per week, and monitoring consumption levels at home. Most recently, the 'Drop a Glass Size' campaign encourages female drinkers in particular to opt for a smaller glass size as a way of reducing consumption.[11]

The questions in the Knowledge, Attitudes and Motivations to Health (KAM) module of the Scottish Health Survey (SHeS) were designed to assess public awareness and understanding of some of these key health communication campaigns. The chapter begins by examining how people in Scotland see their own alcohol consumption before moving on to explore public awareness and understanding of the Chief Medical Officer's recommended maximum daily consumption levels and the advice to have some alcohol-free days each week. People's motivation to reduce their consumption is then examined, before looking at the relationship between people's knowledge, motivations and behaviour towards alcohol. The chapter concludes with a brief discussion of the key findings presented in the chapter.

4.2   ALCOHOL CONSUMPTION IN 2011

The SHeS asks participants a series of detailed questions on what they drank to estimate usual weekly consumption as well as daily consumption on the heaviest drinking day in the week prior to interview.[10]

In 2011, four in ten (43%) adults in Scotland drank within the government's guidelines on maximum daily and weekly alcohol consumption. A similar proportion (42%) exceeded these guidelines while 15% did not drink at all.[10]

Adherence to weekly and daily drinking advice, SHeS 2011

All aged 16 and over	%
Never drunk alcohol	7
Ex drinker	8
Drinks within government guidelines[12]	43
Drinks outwith government guidelines[13]	42

4.3 HOW DO PEOPLE VIEW THEIR OWN ALCOHOL CONSUMPTION?

In addition to answering questions on self-reported alcohol consumption, participants of the KAM module were also asked to provide an assessment of the amount they drank by answering the following question:

Which of the phrases on this card best describes the amount of alcohol you drink now?
'A very light or occasional drinker'
'A light but regular drinker'
'A moderate drinker'
'Quite a heavy drinker'
'A very heavy drinker'
'Do not drink alcohol nowadays'

In 2011, most adults viewed their own alcohol consumption in light to moderate terms with 40% describing themselves as 'a very light or occasional drinker'. One in five (22%) viewed themselves as 'a light but regular drinker' and a similar proportion (20%) considered themselves to be 'a moderate drinker.' Just 4% assessed themselves as 'quite a heavy drinker' and fewer than 1% considered themselves 'a very heavy drinker'. Perceptions were very similar to those seen in earlier years of the KAM module and there was no statistically significant change in the way people viewed the amount they drink since the question was first asked in the SHeS in 2008.[14]

That 4% of adults describe themselves as a 'quite' or 'very heavy drinker' in 2011 is in contrast to the fact that 42% of people drank outwith the government's guidelines in this same period.[10] Thus, there appears to be a gap between actual alcohol consumption and how people perceive their consumption.

We know from previous KAM reports that while those who drink within the recommended guidelines tend to have fairly accurate assessments of the amount they drink, the same is not true for those exceeding the recommendations.[14] On the whole, people who exceed the government's

guidelines tend to describe the amount they drink in more modest terms than the data on their self-reported consumption would suggest.   **Table 4.1**

4.4   KNOWLEDGE OF GOVERNMENT GUIDELINES ON ALCOHOL CONSUMPTION

Public health campaigns in Scotland and across the UK have attempted to increase awareness of the recommended maximum daily consumption of alcohol, of 3 to 4 units for men and 2 to 3 units for women. The success of such campaigns relies on a number of steps. People need to be aware of, and understand, the concept of measuring alcohol in units and, secondly, they need to know that there are guidelines on daily unit consumption for their sex. Finally, in order to apply this knowledge in relation to their own drinking behaviour, people need to be able to estimate their own consumption accurately in terms of units.

This section assesses the first two of these stages: awareness of measuring alcohol in units and knowledge of the existence of guidelines on daily consumption for their own sex. To assess awareness of current advice, KAM participants were first asked whether they had heard of the concept of measuring alcohol in units and, if so, whether they had heard of the government's advice to limit daily alcohol consumption to within a certain number of units per day. Those who had heard of the advice were then asked what they thought the recommended maximum number of units per day was for both men and women.

4.4.1   Awareness of the concept of units and guidance on recommended maximum daily alcohol consumption

Knowledge of the concept of measuring alcohol in units was very high as was awareness of government advice on the maximum daily units that should be consumed. In 2011, just 4% of adults in Scotland had not heard of the concept of measuring alcohol in units, while 3% were unaware that the government had a recommendation to limit daily alcohol intake to a certain number of units. Awareness levels were also high in 2008 when the question was first asked in SHeS and there was no significant improvement in knowledge in the 2008 to 2011 period. During this period there was a significant decline in the proportion of people who said they had not heard of measuring alcohol in units (from 7% in 2008 to 4% in 2011).   **Table 4.2**

Awareness of the concept of measuring alcohol in units and the existence of guidelines on daily unit consumption was higher among some groups of people in society than others. Women were twice as likely as men to be unfamiliar of the concept of measuring alcohol in units (7% compared with 4%). Older people were also less familiar than others with the concept of units. For example, one in five (21%) of those aged 75 or over were not aware that alcohol was measured in units, the equivalent figure for other age groups ranged from just 2% of 45 to 54 year olds to 9% of 65 to 74 year olds. Older people were also more likely to report that they didn't know what the recommended daily maximum number of units was for their sex. For example, those aged

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75 or over were more than twice as likely as 16 to 64 year olds to report that they didn't know the daily recommendation (33% compared with 15% to 17%). **Table 4.3**

The likelihood of a person knowing that alcohol was measured in units was also significantly associated with how deprived an area they lived in. While 3% of those living in Scotland's least deprived (SIMD quintile 5) areas did not know that alcohol was measured in units, the equivalent figure for those living in the most deprived areas was 9% (SIMD quintile 1). **Table 4.4**

Awareness was lower among those groups (women, older people and those living in less deprived areas) known to contain higher proportions of moderate drinkers or non-drinkers.[10] Indeed, this is confirmed in Table 4.5 which shows that non-drinkers and ex-drinkers were significantly less likely than drinkers to have heard of units or the existence of daily consumption recommendations. Fourteen percent of men and 23% of women who did not drink had not heard of measuring alcohol in units compared with just 1% of men and women who drank outwith the government's daily guidelines. **Table 4.5**

4.4.2 Knowledge of number of recommended maximum daily units

Although familiarity with the basic idea of measuring alcohol in units may be high, along with awareness of the existence of guidelines on daily limits for alcohol consumption, this does not necessarily mean that people can correctly identify the maximum number they are advised to drink. Indeed, the majority (83%) did not know what the recommended daily limit was for their sex. Half (48%) provided an estimate which was lower than the recommended daily limit while 9% overestimated the maximum number of units advised. One in six (17%) correctly identified the recommended maximum daily units for their sex.[15] There has been no significant improvement in knowledge of the recommended maximum daily units since this question was first asked in the KAM module in 2008. **Table 4.2**

Knowledge of the daily guidelines varied somewhat across the population. Analysis of the combined data from 2008-2011 showed that, despite awareness being low among both sexes, men were significantly more likely than women to know the maximum daily number of units they were advised to consume (20% compared with 11%). Women were more likely than men to underestimate the recommended limit (52% compared with 44%), while men were more likely to overestimate (14% compared with 6% for women).

For both men and women, knowledge of the daily guidelines was highest among the youngest age group and lowest among older people. For example, 16 to 24 year olds were more than twice as likely as those aged 75 or over to know the maximum number of units they were advised to consume per day (20% compared with 8%). For men, the pattern by age was somewhat unclear, whereas the pattern among

women was linear with knowledge levels decreasing as age increased.
Figure 4A, Table 4.3

Proportion of adults who knew recommended daily maximum units for own sex, 2008-2011 combined, by age and sex
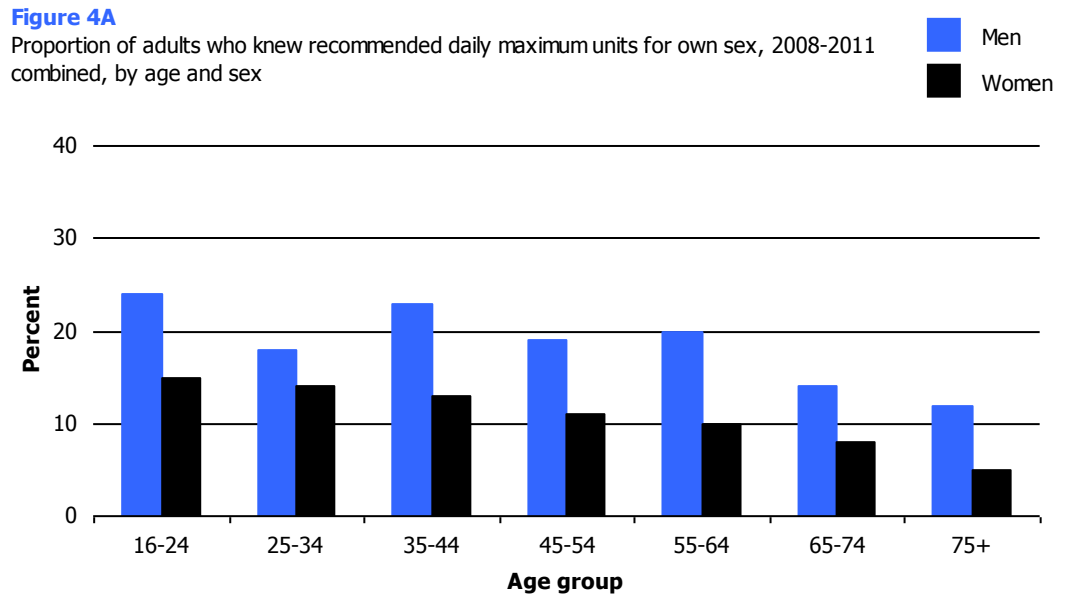
While awareness of the concept of measuring alcohol in units and the existence of advice on the maximum number of units to consume both varied significantly by deprivation, knowledge of what the recommendation actually was did not vary significantly.   **Table 4.4**

There is some evidence that the differences seen by age and sex in terms of accurately identifying the guidelines may, in part, be related to actual consumption behaviour. Knowledge of the advised maximum daily units was lowest among those who had never drunk. For example, 4% of women who had never drunk correctly identified the recommended maximum daily units compared with 10% of those who drank within the government's guidelines and 15% of those who exceeded them.

There were also some significant differences in knowledge levels among drinkers. Those who drank outwith the daily guidelines were more likely than those who drank within them to be familiar with the recommended maximum daily units for their sex. In addition, those who drank outwith the government's daily guideline for their sex were more likely than those drinking within it to know the recommended maximum number of units. For example, 23% of men who drank outwith the government guidelines correctly identified the recommended maximum daily units for men compared with 15% of those who drank within the guidelines.
Figure 4B, Table 4.5

Proportion of adults who knew recommended daily maximum units for own sex, 2008-2011 combined, by daily alcohol consumption and sex
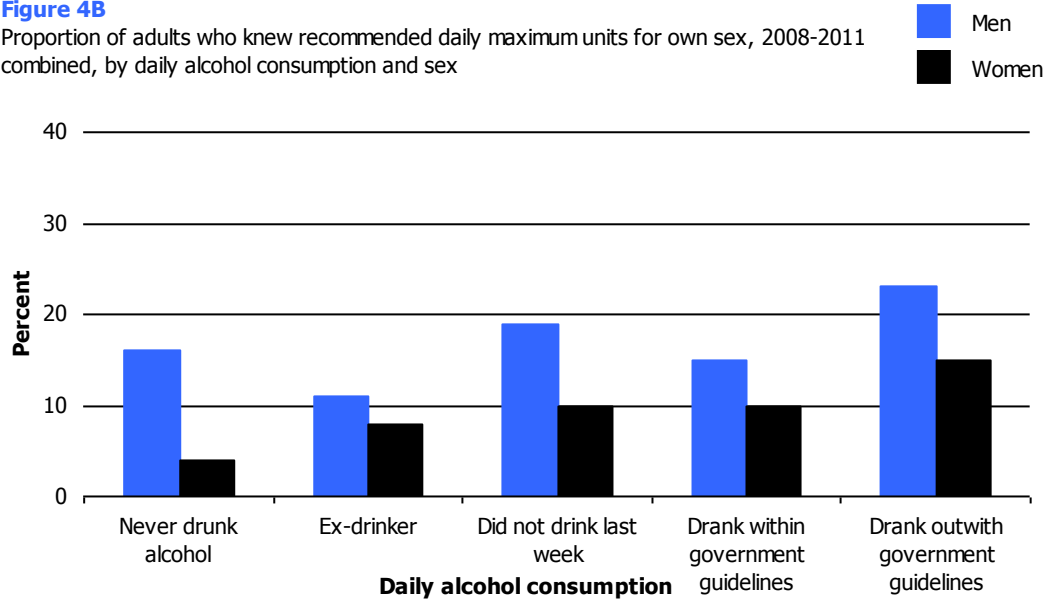
4.5 KNOWLEDGE OF GOVERNMENT GUIDELINE ON ALCOHOL-FREE DAYS PER WEEK

As well as recommending limiting daily alcohol consumption, the Scottish Government also advises that drinkers should have at least two alcohol-free days per week. To assess the public's awareness of this guidance, participants were asked: if they had heard of the advice to have a certain number of alcohol-free days per week, and if so, what they thought the recommended number of days was.

4.5.1 Awareness of the concept of alcohol-free days

In 2011, the majority of adults (62%) were unaware of the advice to have a certain number of alcohol-free days per week, with no significant change in awareness levels since the question was first asked in the KAM module in 2008 (63%). **Table 4.6**

While there were no significant differences in awareness of the guidance on alcohol-free days by gender observed in the 2008/2009 data,[15] analysis of the combined data for 2008-2011 showed that men were less likely than women to have heard of the advice (66% compared with 60%). There was also some evidence of awareness levels varying by age among both men and women. In terms of age, those in the 45 to 64 age groups were most likely to have been aware of the government's advice to have a certain number of alcohol-free days a week. For example, 55% to 56% of 45 to 64 year olds reported that they had not heard of the advice compared with between 64% to 73% of those in the other age groups. **Figure 4C, Table 4.7**

Figure 4C

Proportion of adults unaware of advice on alcohol-free days per week, 2008-2011 combined, by age and sex

Legend: Men (blue), Women (black)
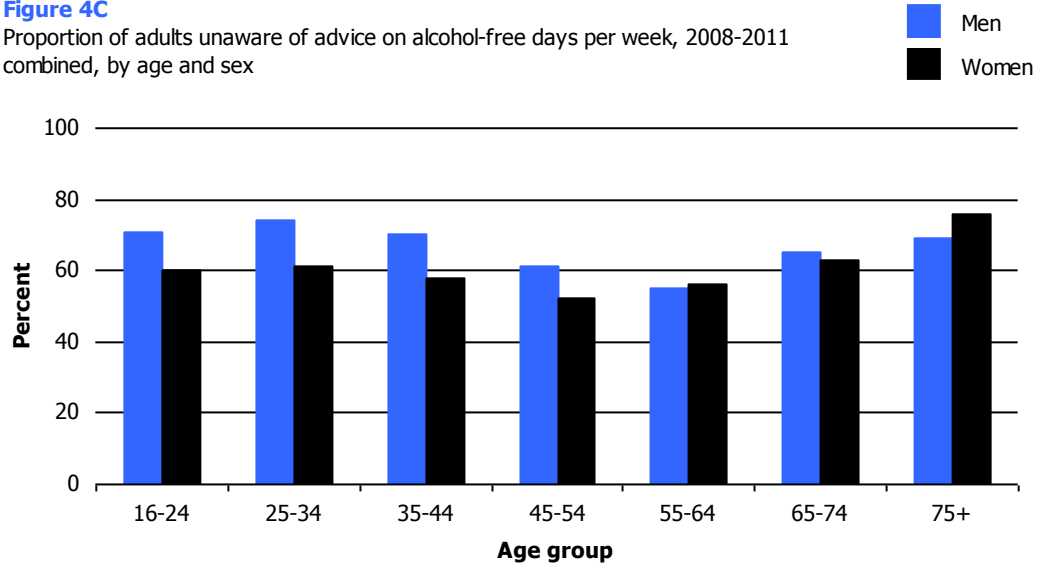
In addition, as illustrated in Figure 4D, awareness of the guidance on alcohol-free days also varied by area deprivation. Two-thirds of those living in the 40% most deprived areas in Scotland (SIMD quintiles 1 and 2) were unfamiliar with the advice. The equivalent figure for those living in Scotland's least deprived areas (SIMD quintile 5) was 56%

Figure 4D, Table 4.8

Figure 4D

Awareness and knowledge of advice to have a certain number of alcohol-free days each week, 2008-2011 combined, by SIMD quintile

Legend:
- Over-estimated number of days advised
- Broadly correct estimate of number of days advised
- Under-estimated numer of days advised
- Heard of advice but didn't know number of days advised
- Not heard of advice
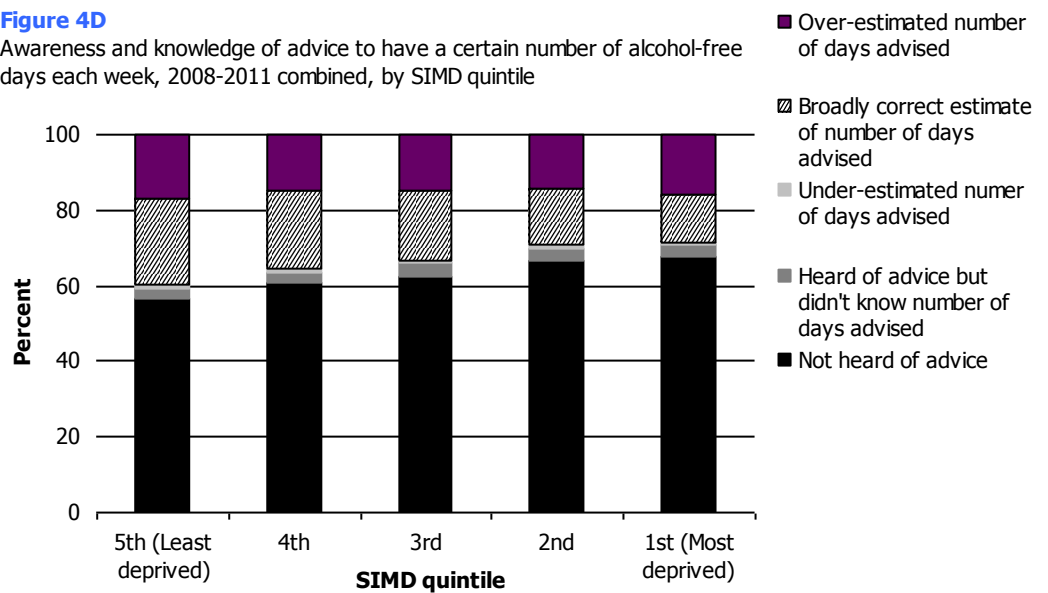
4.5.2 Knowledge of the recommended number of alcohol-free days per week

Those who were aware that there was a guideline on alcohol-free days were asked what they thought the recommended number of days was. The questionnaire presented a range of options for the number of days in groups, 0-1 day, 1-2 days, 2-3 days and so on. As such, the data offer a useful insight into the levels of understanding of the guidance, although it is not possible to determine the proportion of the adult population who knew the advice exactly (two days).

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In 2011, 7% of adults thought the government advised drinkers to have 1-2 alcohol-free days per week and a further 12% thought 2-3 alcohol free days were recommended. This means that fewer than one in five adults knew the advice regarding the number of alcohol-free days per week a drinker should have. Knowledge levels did not change significantly between 2008 and 2011.   **Table 4.6**

Analysis of combined data from 2008-2011 showed that knowledge of the number of alcohol-free days advised also varied across different groups of people in society. Awareness among men and women was similar with 6% of both genders reporting that the advice was to have 1-2 alcohol-free days per week, and 11% of men and 13% of women reporting the advice to be 2-3 days. Those aged 45 to 64 were more likely than others to identify the broadly correct number of days. For example, 23% chose either 1-2 days or 2-3 days compared with just 13% of those aged 16 to 24.   **Table 4.7**

Knowledge of the number of alcohol-free days drinkers are advised to have each week also varied significantly by area deprivation. People living in Scotland's least deprived areas were significantly more likely than those living in areas of greater deprivation to provide a broadly correct answer for the number of alcohol-free days advised. For example, one in five (22%) of those living in SIMD quintile 5 (20% least deprived areas in Scotland) thought that the government advice was to have either 1-2 or 2-3 alcohol free days each week, the equivalent figure among those living in Scotland's most deprived areas (SIMD quintile 1) was 13%.   **Figure 4D, Table 4.8**

4.6 MOTIVATIONS TO REDUCE ALCOHOL CONSUMPTION

An assessment of a person's motivation to reduce their alcohol consumption or stop drinking entirely was made by asking KAM participants:

- whether they had tried to cut down or stop drinking alcohol in the past year, and if so
    - whether they had managed to maintain this;
- whether they would like to cut down or stop drinking alcohol, and if so
    - whether they were thinking of doing this in the next six months.

As discussed in the introductory chapter, an individual's readiness to change a particular behaviour was determined by using their responses to the above questions to classify them according to DiClemente and Proschaska's 'Stages of Change' model.[16]

In this example, classifications range from 'no change to alcohol consumption desired, recently undertaken or planned' ('pre-contemplation'; see table below), through to 'alcohol consumption reduced and maintained' ('maintenance'). For the purpose of this analysis a further category of 'long term maintenance' has been added. It includes those who had not made any changes to their drinking behaviour in the past year, and did not plan to do so in the near future, but who either already drank within recommended limits or did not drink (50% of all

adults). The creation of this long term maintenance category means that everyone in the pre-contemplation group drank outwith the daily and weekly recommended limits.

The table below outlines the proportion of the adult population in Scotland in each of the six stages of change in 2011.

Stage of change	Definition of stage of change	2011 %
Pre-contemplation	Drinks more than recommended daily or weekly limits and has not stopped or reduced the amount of alcohol consumed in the previous 12 months and is not intending to do so in the next six months	34
Contemplation	Would like to stop drinking or reduce the amount of alcohol consumed, but is not intending to do so in the next six months	2
Preparation	Would like to stop drinking or reduce the amount of alcohol consumed and is thinking of doing so in the next six months	4
Action	Stopped drinking or reduced alcohol consumed in the previous 12 months but did not maintain these reduced levels	4
Maintenance	Stopped drinking or reduced alcohol consumption in the previous 12 months and maintained these reduced levels	7
Long term maintenance	Did not reduce consumption in previous 12 months and no desire to do so, but already drinks within recommended limits	50

Together the action and maintenance stages represent those who had been motivated to take action to reduce their alcohol consumption and had done so, albeit with varying degrees of success. In 2011, around one in ten (11%) reported that they had taken some action to reduce their drinking in the previous 12 months. Of these, most (7% of all adults) had managed to maintain their reduced levels, but a sizeable proportion had not (4% of all adults).

Half (50%) of adults in Scotland were classified as being at the long term maintenance stage; they had not reduced their consumption in the previous 12

months and did not intend to do so in the near future but already either drank within the recommended limits or did not drink.

A third (34%) of adults were in the pre-contemplation stage of change; they had not cut down on their drinking recently and did not plan on doing so in the near future, yet drank outwith the government's daily and/or weekly consumption recommendations.

There were no statistically significant changes in the motivation levels of adults to reduce their alcohol consumption between 2008 and 2011.

Previous analysis of the KAM module data highlighted that some groups of people in society are more motivated than others to reduce their alcohol consumption.[14] Women, for example, were more likely than men to be in the long term maintenance stage of change. Men were more likely than women to be in the pre-contemplation stage. With regards age, those aged 55 and over were less likely than younger people to be in the pre-contemplation stage.

Table 4.9

4.6.1 Factors associated with taking positive steps to reduce alcohol consumption

Multivariate logistic regression was used to examine the independent effect of a range of socio-demographic and behavioural characteristics on an individual's motivation to reduce their alcohol consumption. The regression model explored factors independently associated with successfully adopting or maintaining a reduction in consumption. This was defined as those classified as being in the 'maintenance' or 'long term maintenance' stages of change that is those who successfully took steps to reduce their alcohol consumption in the previous twelve months (maintenance) or those who didn't take or plan to take any steps to control their consumption but who already drank within the government guidelines or did not drink (long term maintenance). In the discussion that follows these groups will be referred to collectively as maintainers.

The odds ratios of being a maintainer are presented in Table 4.10. In these analyses, the odds of a reference group (shown in the table with a value of 1) are compared with that of the other categories for each of the individual factors. In this example, an odds ratio of greater than 1 indicates that the group in question has increased odds compared with the reference category of being a maintainer, and an odds ratio of less than 1 mean they have decreased odds. By simultaneously controlling for a number of factors, the independent effect each factor has on the variable of interest can be established. The regression model was run on the combined 2008-2011 data. A description of the factors included in the model is included in an endnote to the chapter.[17]

The factors found to be associated with being a maintainer were: sex, age, household income, educational attainment and presence of other risk factors. Neither area deprivation nor household NS-SEC were significantly related to motivation levels.

Once other factors were controlled for, sex was significantly associated with motivation to reduce alcohol consumption. The odds of a women being a maintainer were 1.24 times higher than for a man.

When compared with 16-34 year olds, those aged 55 or over had increased odds of being in the maintenance/ long term maintenance stages of change. The odds of being a maintainer were highest for those aged 75 or over (odds ratio 3.41 times higher than for the youngest age group).

Household income was also significantly associated with motivation levels; with those in the lowest three income quintiles (3rd, 4th and 5th quintiles) having significantly higher odds of being a maintainer than those in the highest income group (odds ratio of 1.37, 1.73 and 2.02 respectively). These associations with age and household income are perhaps not surprising given that self-reported consumption data from SHeS indicates that older people and those on lower household incomes are more likely than others to drink within the government guidelines and consequentially are less likely to need to take steps to reduce their consumption.[10]

When compared to those educated to degree level or above, those with no educational qualifications had increased odds of being in the maintenance/ long term maintenance stages of change (odds ratio of 1.47).

The number of other risk factors[17] a person had was also significantly associated with their motivation to reduce their alcohol consumption. Relative to those with none or one, those with four other risk factors had lower odds of being in the maintenance group (odds ratio of 0.70).

Table 4.10

4.7 KNOWLEDGE, BEHAVIOUR AND MOTIVATION TOWARDS ALCOHOL CONSUMPTION

This section draws on the findings already presented and examines knowledge of key public health messages on alcohol consumption and motivations to reduce consumption alongside actual drinking behaviour (defined as the proportion of the population drinking outwith the government's daily and/or weekly guidelines on consumption). In Figure 4E, knowledge, motivation levels and behaviour are tracked over the 2008-2011 period using the following measures:

- Knowledge – percentage that correctly identified the recommended maximum daily units for their own sex
- Behaviour – percentage that drank outwith the government's daily guidelines on consumption
- Motivation – percentage that took steps to reduce their alcohol consumption in the previous 12 months ('action' and 'maintenance' categories combined). Note that this measure of motivation differs from that

used in the multi-variate analysis discussed in Section 4.6.1 which focussed on those in the 'maintenance' and 'long term maintenance'
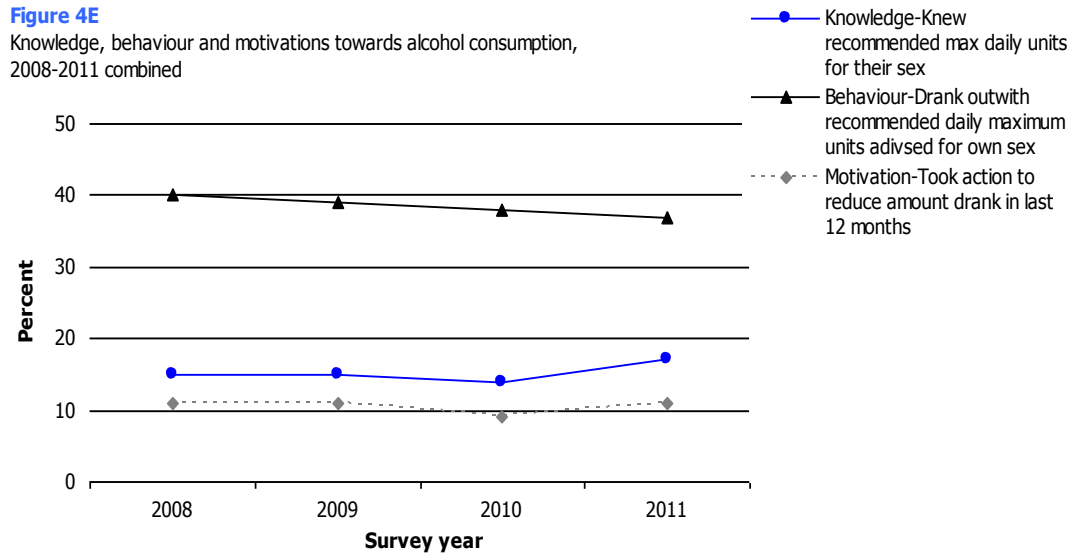
One of the first things to note from Figure 4E is the sizeable gap between drinking behaviour and both knowledge of advice on consumption levels and motivation to reduce alcohol consumption. In 2011, almost four in ten (37%) adults drank outwith the government's recommended daily guideline. Knowledge of the actual recommendation on daily consumption was much lower, with only around one in six able to correctly identify the recommended maximum daily units for their sex. Appetite to reduce consumption was similarly very low, with just one in ten reporting that they took steps to reduce their consumption in the previous year.

The lack of any significant change in drinking behaviour, knowledge levels or motivation levels over the 2008-2011 period is also clearly illustrated in Figure 4E. While the long term trend for self-reported alcohol consumption is one of declining consumption, between 2008 and 2011 there was no significant change in reported consumption levels. Since 2008, knowledge of recommended maximum daily units remained steady at between 14% and 16%. Motivation to drink less remained largely unchanged between 2008 and 2011. Over this four year period, the proportion reporting that they had taken steps to reduce their consumption remained at between 9% and 11%.

HEPS, the predecessor to the KAM module, also included questions on knowledge, behaviour and motivations between 1996 and 2007.[18] While the methodological differences between the two surveys mean that the results are not directly comparable, the time-series findings from HEPS offer some useful context here. According to HEPS, there was little change in the reported weekly drinking behaviour of all adults between 1996 and 2007, with one in six (14%) exceeding the recommended weekly limits in 2007. While HEPS showed an overall increase in people's knowledge of the recommended weekly limits from 9% in 1996 to 24% in 2007, the improvement was largely confined to the earlier years of the survey with little change in the latter years (fluctuating between 20% and 27% from 2001 to 2007). A similar pattern was seen with regards motivation to reduce alcohol consumption in HEPS; i.e., an overall increase in

motivation to cut down alcohol consumption during the life of the survey with less change in more recent years. The lack of change in the final years of the HEPS is concurrent with the lack of change in KAM between 2008 and 2011.

4.8   DISCUSSION

This chapter has explored people's perceptions of the amount they drink, knowledge of key public health messages around alcohol consumption and how motivated people are to change their drinking behaviour.

The Scottish Health Survey 2011 reported that 42% of adults in Scotland drink outwith government guidelines with no significant change in this indicator over the previous four years.[13] The KAM module, on the other hand, showed that only a small minority of adults in Scotland (4%) view themselves as 'heavy' or 'very heavy' drinkers and that many of those drinking outwith the guidelines describe themselves as 'light' drinkers. There are a number of possible explanations for this apparent inconsistency between the way people describe their drinking behaviour and their actual consumption.

The first is that, despite being able to report what they have drunk in the main SHeS interview, some people are simply unable to accurately quantify or contextualise this. It may also be the case that some are aware of how much they drink but are reluctant to describe their drinking behaviour in pejorative terms e.g. a 'heavy' drinker. However, the size of the gap suggests a significant disconnect between public and professional understanding of the labels applied to drinking behaviour. Any future research should perhaps consider using a less pejorative scale when trying to assess people's understanding of their own drinking behaviour.

In terms of knowledge of key alcohol-related messages, awareness of the concept of measuring alcohol in units and the existence of guidelines on maximum daily unit consumption continues to be almost universal, but knowledge of the actual guidance is low, and varied across different groups in the population.

The guidance on having at least two alcohol-free days each week was much less familiar to people than the recommendations on maximum daily unit consumption. Again, awareness was not uniform, although here levels of awareness were higher amongst women than men.

The public's motivation to reduce alcohol consumption showed no significant change between 2008 and 2011 with around a third reporting that they have not attempted to reduce their consumption and were not planning on doing so despite drinking outwith the daily guidelines. There was, however, some indication of higher levels of motivation to change drinking behaviour amongst women and older people (those 55 or over), both groups which already contain higher proportions of moderate and non-drinkers.

The KAM data show little positive change on any of the main alcohol indicators; knowledge of the key education campaign messages, motivation to reduce consumption and self-reported consumption between 2008 and 2011. This

suggests that there is still work to be done to encourage people to reduce their alcohol consumption and highlights the need to better understand the role of wider contextual influences in shaping Scotland's drinking culture.

References and notes

1   Babor, T. et al. *Alcohol: No Ordinary Commodity: Research and Public Policy*, OUP, 2010

2   Hart, C. and Davey Smith, G. 'Alcohol consumption and mortality and hospital admissions in men from the Midspan Collaborative cohort study' *Addiction* vol. 103, Issue 12, December 2008. pp. 1979–1986

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4   Beeston C, McAuley A, Robinson M, Craig N, and Graham L (on behalf of the MESAS project team). *Monitoring and Evaluating Scotland's Alcohol Strategy. 2nd Annual Report.* Edinburgh: NHS Health Scotland; 2012

5   http://www.healthscotland.com/topics/health/alcohol/index.aspx

6   Grant, I., Springbett, A., and Graham, L. *Alcohol attributable mortality and morbidity: alcohol population attributable fractions for Scotland*, 2009. ISD Scotland/Scottish Public Health Observatory. <www.scotpho.org.uk/alcoholPAFreport/>

7   http://www.healthscotland.com/topics/health/alcohol/index.aspx

8   Whyte, B. et al. *Still "the sick man of Europe"? Scottish Mortality in a European Context, 1950 – 2010: An analysis of comparative mortality trends.* GCPH / ScotPHO 2010. http://www.gcph.co.uk/work_programmes/understanding_glasgows_health/scottish_mortality_in_europe

9   *Changing Scotland's Relationship with Alcohol: A Framework for Action.* Edinburgh: Scottish Government, 2009.

10 Sharp, C. (2012). Chapter 3: Alcohol consumption. In Rutherford, L., Sharp, C. and Bromley, C. [eds.] *The 2011 Scottish Health Survey – Volume 1: Adults.* Edinburgh, Scottish Government. Available from: http://www.scotland.gov.uk/Publications/2012/09/7854

11 Full details of Scottish Government campaigns can be found at http://www.drinksmarter.org/

12 Drinks within guidelines = Drank no more than 4 units (men) or 3 units (women) on heaviest drinking day, and drank no more than 21 units (men) or 14 units (women) in usual week.

13 Drinks outwith guidelines = Drank more than 4 units (men) or 3 units (women) on heaviest drinking day, and/or drank more than 21 units (men) or 14 units (women) in usual week.

14 Bromley et al. *Knowledge, Attitudes and Motivations to Health – a module of the Scottish Health Survey*. NHS Health Scotland, 2010.

15 As described earlier the advice is commonly presented using a range (3 to 4 units for men, 2 to 3 units for women). The KAM question asked people about the maximum point of this range, rather than the range itself, which might have caused confusion and resulted in a higher proportion underestimating the daily limit.

16 The Stages of Change model (sometimes referred to as The Transtheoretical Model) is a model of health behaviour change developed initially by DiClemente and Proschaska in 1977. Here we refer to the version of the model which contains five 'stages of change' ranging from pre-contemplation to maintenance. For further reading on the 'Stages of Change model' see DiClemente, C.C., & Prochaska, J.O. (1982). 'Self change and therapy change of smoking behavior: A comparison of processes of change in cessation and maintenance' *Addictive Behavior* 7 (2): 133-42.

17 The socio-demographic factors included in the model were: age, SIMD, equivalised household income, educational attainment and household NS-SEC. smoking, not meeting the five-a-day fruit

and vegetable consumption target, BMI >= 25kg/m^2 and physical inactivity - not active at the recommended level. To create the risk scale each of the four behaviours was coded one if the risk factor was present and zero if not. The scale then summed the number of risks across the four categories, resulting in a five point scale from 0-4. The scale was only based on participants for whom data were available for each of the four measures; imputation was not used to handle missing cases. The final risk groups included in the model were: no other risk factors; 1-2 risk factors; 3 risk factors and 4 risk factors

[18] Bassett, C., Gilbey, N. and Catto, S.[ed] (2008) Health Education Population Survey: Update from 2007 survey, NHS HealthScotland. This survey was carried between 1996 and 2007, prior to the KAM module being introduced into the Scottish Health Survey.

Table list

Table 4.1   Self-assessment of alcohol consumption, 2008, 2009, 2010, 2011

Aged 16 and over   *2008, 2009, 2010, 2011*

Self-assessment of alcohol consumption	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
A very light or occasional drinker	37	39	41	40
95% C.I.	(34.1-39.6)	(36.0-41.2)	(38.1-43.8)	(37.1-42.9)
A light but regular drinker	21	22	21	22
95% C.I.	(19.4-23.5)	(19.6-24.2)	(18.4-22.8)	(19.5-24.3)
A moderate drinker	22	21	19	20
95% C.I.	(19.7-24.3)	(19.1-23.9)	(17.2-21.6)	(18.1-22.7)
Quite a heavy drinker	5	4	3	4
95% C.I.	(3.9-6.7)	(2.7-5.1)	(2.3-4.0)	(3.2-5.6)
A very heavy drinker	1	1	0	0
95% C.I.	(0.3-1.1)	(0.3-1.0)	(0.2-0.6)	(0.3-0.9)
Do not drink alcohol at all	14	14	16	13
95% C.I.	(12.3-16.4)	(12.1-16.1)	(14.0-18.1)	(11.5-15.2)
Bases (weighted):	*1834*	*2014*	*2273*	*2268*
Bases (unweighted):	*1835*	*2009*	*2270*	*2266*

Table 4.2   Knowledge of maximum number of daily units advised for own sex, 2008, 2009, 2010, 2011

Aged 16 and over   *2008, 2009, 2010, 2011*

Knowledge of maximum daily units for own sex (4 for men, 3 for women per day)	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Underestimated daily units	47	49	49	48
95% C.I.	(44.4-50.4)	(46.6-52.3)	(45.7-51.3)	(44.7-50.3)
Knew daily recommended units	15	15	14	17
95% C.I.	(13.3-17.5)	(13.2-17.4)	(12.0-16.0)	(14.6-19.1)
Overestimated daily units	11	11	10	9
95% C.I.	(9.2-13.1)	(9.3-13.4)	(7.8-11.9)	(7.3-10.6)
Didn't know daily units[a]	15	16	19	19
95% C.I.	(13.3-16.9)	(14.5-18.6)	(17.2-21.3)	(17.1-21.6)
Not heard of recommendation	4	3	3	3
95% C.I.	(3.1-5.5)	(1.9-3.8)	(2.4-4.4)	(2.6-4.3)
Not heard of or don't know of units	7	5	6	4
95% C.I.	(5.9-8.7)	(4.0-6.3)	(4.6-6.8)	(3.4-5.6)
Bases (weighted):	*1845*	*2022*	*2278*	*2276*
Bases (unweighted):	*1844*	*2021*	*2278*	*2276*

a This group were aware that advice about daily drinking existed, but did not know how many units were advised.

Table 4.3   Knowledge of the maximum number of daily units advised for own sex, 2008-2011 combined, by age and sex

Aged 16 and over   *2008-2011 combined*

Knowledge of maximum daily units for own sex (4 for men, 3 for women per day)	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Underestimated daily units	34	44	48	49	49	44	31	44
95% C.I.	(27.3-41.9)	(38.4-50.1)	(43.1-52.8)	(43.8-54.0)	(44.9-54.1)	(38.9-48.4)	(26.3-36.6)	(41.8-46.2)
Knew daily recommended units	24	18	23	19	20	14	12	20
95% C.I.	(17.8-32.3)	(13.8-22.1)	(19.2-28.2)	(15.8-23.4)	(16.5-24.0)	(10.6-17.8)	(9.1-16.9)	(17.7-21.4)
Overestimated daily units	21	19	13	14	11	14	6	14
95% C.I.	(14.9-27.8)	(14.6-24.2)	(9.8-16.8)	(10.7-17.1)	(8.7-14.9)	(10.6-17.3)	(3.9-9.5)	(12.9-16.2)
Didn't know daily units[a]	12	12	10	14	12	20	29	14
95% C.I.	(8.0-18.8)	(8.9-17.3)	(7.4-13.3)	(10.9-18.3)	(9.8-15.7)	(16.1-23.9)	(24.0-33.9)	(12.8-15.9)
Not heard of recommendation	4	4	4	2	3	3	7	4
95% C.I.	(1.9-8.9)	(2.3-7.3)	(2.2-6.3)	(0.9-4.0)	(2.0-5.5)	(2.0-5.3)	(4.6-10.7)	(2.9-4.6)
Not heard of or don't know of units	4	3	2	2	3	6	14	4
95% C.I.	(1.8-9.4)	(1.5-4.8)	(1.1-4.0)	(1.0-4.6)	(2.1-5.0)	(4.3-8.4)	(11.2-18.4)	(3.3-4.9)
Women								
Underestimated daily units	49	58	60	62	55	43	24	52
95% C.I.	(42.2-55.6)	(53.2-61.7)	(55.7-63.6)	(57.5-65.8)	(51.1-59.3)	(39.1-47.4)	(20.4-27.6)	(50.3-53.8)
Knew daily recommended units	15	14	13	11	10	8	5	11
95% C.I.	(11.2-19.9)	(11.7-17.6)	(10.6-16.0)	(8.5-13.9)	(8.3-13.2)	(6.4-10.9)	(3.2-6.8)	(10.3-12.5)
Overestimated daily units	12	5	6	5	6	5	3	6
95% C.I.	(8.1-18.1)	(3.5-7.5)	(4.0-7.8)	(3.8-7.7)	(4.3-9.1)	(3.1-6.7)	(1.7-4.3)	(5.2-7.1)
Didn't know daily units[a]	17	15	17	17	22	28	36	21
95% C.I.	(13.1-22.8)	(12.1-18.3)	(14.1-20.3)	(14.5-20.9)	(18.5-25.2)	(24.6-32.2)	(31.6-39.7)	(19.4-22.2)
Not heard of recommendation	1	3	2	2	3	4	9	3
95% C.I.	(0.4-2.5)	(1.8-5.1)	(0.9-3.4)	(1.2-3.6)	(1.6-4.2)	(3.0-6.3)	(6.4-11.6)	(2.5-3.6)
Not heard of or don't know of units	6	5	3	2	4	11	25	7
95% C.I.	(3.3-9.1)	(3.3-7.4)	(1.9-4.5)	(1.3-3.9)	(2.4-5.6)	(9.0-13.9)	(21.2-28.2)	(6.0-7.6)

Continued…

Table 4.3   *- Continued*

Knowledge of maximum daily units for own sex (4 for men, 3 for women per day)	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
Underestimated daily units	41	51	54	56	52	43	27	48
95% C.I.	(36.3-46.6)	(47.2-54.5)	(50.9-57.2)	(52.3-58.8)	(49.3-55.6)	(40.2-46.6)	(23.8-29.9)	(46.8-49.6)
Knew daily recommended units	20	16	18	15	15	11	8	15
95% C.I.	(15.7-24.6)	(13.5-18.8)	(15.5-20.8)	(12.8-17.5)	(13.0-17.5)	(9.0-13.2)	(6.0-9.8)	(14.2-16.3)
Overestimated daily units	17	12	9	9	9	9	4	10
95% C.I.	(12.6-21.4)	(9.6-15.0)	(7.3-11.2)	(7.6-11.3)	(6.9-11.1)	(7.0-10.8)	(2.9-5.6)	(9.2-11.1)
Didn't know daily units[a]	15	14	14	16	17	24	33	18
95% C.I.	(11.6-18.8)	(11.3-16.5)	(11.6-16.0)	(13.6-18.5)	(15.0-19.6)	(21.7-27.1)	(29.8-36.0)	(16.6-18.7)
Not heard of recommendation	3	4	3	2	3	4	8	3
95% C.I.	(1.3-5.0)	(2.4-5.3)	(1.8-4.1)	(1.3-3.1)	(2.1-4.2)	(2.9-5.2)	(6.3-10.2)	(2.9-3.9)
Not heard of or don't know of units	5	4	3	2	4	9	21	5
95% C.I.	(3.0-7.6)	(2.8-5.3)	(1.8-3.6)	(1.4-3.5)	(2.6-4.7)	(7.3-10.6)	(18.2-23.3)	(4.9-6.1)
Bases (weighted):								
Men	*599*	*646*	*699*	*730*	*629*	*434*	*293*	*4030*
Women	*575*	*645*	*763*	*786*	*662*	*502*	*458*	*4392*
All adults	*1174*	*1291*	*1462*	*1516*	*1292*	*936*	*751*	*8422*
Bases (unweighted):								
Men	*235*	*438*	*583*	*627*	*660*	*561*	*414*	*3518*
Women	*370*	*672*	*805*	*783*	*822*	*759*	*690*	*4901*
All adults	*605*	*1110*	*1388*	*1410*	*1482*	*1320*	*1104*	*8419*

a This group were aware that advice about daily drinking existed, but did not know how many units were advised

Table 4.4   Knowledge of the maximum number of daily units advised for own sex, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Knowledge of maximum daily units for own sex (4 for men, 3 for women per day)	Scottish Index of Multiple Deprivation quintile					Total
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)	
	%	%	%	%	%	%
All adults						
Below daily recommended units	55	50	50	47	40	48
95% C.I.	(51.5-58.5)	(47.0-52.9)	(46.3-52.8)	(43.4-49.7)	(37.3-42.8)	(46.8-49.6)
Daily recommended units	15	16	16	13	16	15
95% C.I.	(12.9-18.0)	(13.5-18.0)	(13.9-19.1)	(11.4-15.7)	(13.4-18.0)	(14.2-16.3)
Above daily recommended units	9	10	9	11	11	10
95% C.I.	(6.6-12.0)	(7.9-11.9)	(7.4-11.2)	(9.4-13.9)	(9.4-13.3)	(9.2-11.1)
Don't know daily recommended units[a]	15	18	16	19	19	18
95% C.I.	(13.4-17.8)	(16.0-20.6)	(14.1-18.4)	(16.6-21.6)	(17.2-22.0)	(16.6-18.7)
Not heard of or don't know daily recommendations	2	3	3	4	5	3
95% C.I.	(1.3-3.1)	(1.9-4.0)	(2.4-4.8)	(2.8-5.0)	(3.5-6.2)	(2.9-3.9)
Not heard of or don't know units	3	4	5	6	9	5
95% C.I.	(2.2-4.5)	(2.9-5.0)	(4.3-7.0)	(4.7-7.3)	(7.7-10.6)	(4.9-6.1)
Bases (weighted):	*1637*	*1797*	*1633*	*1682*	*1672*	*8422*
Bases (unweighted):	*1350*	*1787*	*1722*	*1701*	*1859*	*8419*

a This group were aware that advice about daily drinking existed, but did not know how many units were advised

Table 4.5   Knowledge of the maximum number of daily units advised for own sex, 2008-2011 combined, by reported daily alcohol consumption

Aged 16 and over   *2008-2011 combined*

Awareness of the daily drinking guidelines	Reported alcohol consumption on heaviest drinking day in last week[a]					Total
	Never drunk alcohol	Ex drinker	Did not drink last week	Drank outwith Govt. guidelines[b]	Drank within Govt. guidelines[c]	
	%	%	%	%	%	%
Men						
Below daily recommended units	20	33	37	47	51	44
95% C.I.	(11.5-31.3)	(26.8-40.3)	(32.9-42.1)	(43.8-50.7)	(46.8-55.0)	(41.9-46.4)
Daily recommended units	16	11	19	23	15	20
95% C.I.	(6.7-32.2)	(7.4-16.5)	(15.1-22.9)	(20.4-26.3)	(12.6-18.6)	(17.4-21.0)
Above daily recommended units	9	14	18	15	13	14
95% C.I.	(4.0-17.6)	(9.5-20.7)	(14.1-21.7)	(12.4-17.8)	(10.0-16.3)	(13.0-16.3)
Don't know daily recommended units[d]	32	25	15	10	15	14
95% C.I.	(22.1-44.6)	(19.0-31.8)	(11.8-19.1)	(8.5-12.8)	(12.2-17.7)	(12.9-16.0)
Not heard of or don't know daily recommendations	10	5	4	3	3	4
95% C.I.	(4.5-21.9)	(2.3-8.7)	(2.6-7.2)	(1.9-4.2)	(2.2-4.9)	(2.9-4.6)
Not heard of/don't know units	14	12	7	1	3	4
95% C.I.	(7.3-24.1)	(7.5-18.7)	(4.9-9.7)	(0.9-2.1)	(2.0-4.3)	(3.3-5.0)
Women						
Below daily recommended units	27	39	46	62	58	52
95% C.I.	(22.0-33.3)	(33.6-44.5)	(43.0-49.7)	(59.2-65.3)	(54.3-61.4)	(50.2-53.8)
Daily recommended units	4	8	10	15	10	11
95% C.I.	(2.7-7.3)	(5.5-11.4)	(8.3-12.1)	(13.3-17.7)	(8.4-12.6)	(10.2-12.4)
Above daily recommended units	5	4	7	7	5	6
95% C.I.	(2.6-8.9)	(2.5-7.5)	(4.8-8.9)	(5.5-8.5)	(3.4-6.4)	(5.1-7.0)
Don't know daily recommended units[d]	32	31	26	12	21	21
95% C.I.	(26.6-37.6)	(26.6-36.8)	(23.1-28.7)	(10.1-14.4)	(17.9-23.5)	(19.6-22.4)
Not heard of or don't know daily recommendations	8	5	3	2	2	3
95% C.I.	(5.7-12.4)	(2.8-7.5)	(2.2-4.2)	(1.4-3.0)	(1.3-3.0)	(2.5-3.7)
Not heard of/don't know units	23	13	8	1	5	7
95% C.I.	(18.8-28.2)	(9.6-16.4)	(6.8-9.9)	(0.9-2.2)	(3.3-6.2)	(6.0-7.6)
Bases (weighted):						
Men	178	230	811	1700	1066	4030
Women	366	335	1232	1456	921	4392
Bases (unweighted):						
Men	120	278	734	1397	962	3518
Women	420	441	1447	1493	1067	4901

a This measure is based on self-reported consumption on the heaviest drinking day in the last week
b Drank more than 4 units (men) or 3 units (women) on heaviest drinking day in last week
c Drank no more than 4 units (men) or 3 units (women) on heaviest drinking day in last week
d Aware that advice about daily drinking existed, but did not know how many units were advised

Table 4.6   Knowledge of advice on number of alcohol-free days per week, 2008, 2009, 2010, 2011

Aged 16 and over   *2008, 2009, 2010, 2011*

Awareness of advice on number of alcohol-free days per week (2 days)	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Not heard of non-drinking days advice	63	64	64	62
95% C.I.	(60.0-65.3)	(60.9-66.2)	(61.0-66.5)	(58.9-64.3)
Heard of but don't know the number	3	3	3	4
95% C.I.	(2.2-3.7)	(1.9-3.4)	(2.2-3.7)	(2.7-5.0)
0-1 days	1	1	1	1
95% C.I.	(0.8-2.1)	(0.4-1.3)	(0.4-1.2)	(0.3-1.1)
1-2 days	6	6	5	7
95% C.I.	(4.5-6.8)	(4.6-7.3)	(4.0-6.2)	(5.9-8.5)
2-3 days	11	13	13	12
95% C.I.	(9.1-12.5)	(10.9-14.6)	(10.8-14.4)	(10.8-14.2)
3-4 days	11	8	9	9
95% C.I.	(9.1-12.9)	(6.3-9.1)	(7.3-10.3)	(7.5-10.7)
4-5 days	5	5	5	5
95% C.I.	(3.4-6.0)	(4.3-7.0)	(3.7-5.9)	(3.7-6.0)
5-6 days	1	1	2	1
95% C.I.	(0.8-2.6)	(0.8-2.3)	(1.0-2.3)	(0.5-1.2)
6-7 days	0	0	0	0
95% C.I.	(0.0-0.8)	(0.2-0.7)	(0.1-0.8)	(0.0-0.3)
Bases (weighted):	*1845*	*2022*	*2278*	*2276*
Bases (unweighted):	*1844*	*2021*	*2278*	*2276*

Table 4.7 **Knowledge of advice on number of alcohol-free days per week, 2008-2011 combined, by age and sex**

Awareness of advice on number of alcohol-free days per week	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Not heard this advice	71	74	70	61	55	65	69	66
95% C.I.	(63.9-77.9)	(68.4-78.5)	(65.0-73.8)	(56.2-65.8)	(50.3-59.6)	(60.7-69.5)	(63.3-73.9)	(64.2-68.2)
Heard of but don't know the number	2	1	1	2	4	4	7	3
95% C.I.	(0.6-4.5)	(0.6-3.0)	(0.6-2.3)	(0.9-3.2)	(2.7-6.0)	(2.3-6.0)	(4.4-10.2)	(2.0-3.1)
0-1 days	1	0	1	1	1	0	2	1
95% C.I.	(0.1-5.7)	(0.1-0.9)	(0.4-2.6)	(0.2-1.6)	(0.6-2.6)	(0.2-1.6)	(1.1-4.6)	(0.6-1.3)
1-2 days	3	3	5	6	8	9	9	6
95% C.I.	(1.4-6.6)	(1.4-6.1)	(3.8-7.7)	(4.1-8.7)	(5.8-10.6)	(7.0-12.5)	(6.1-13.0)	(5.0-6.8)
2-3 days	8	8	10	15	13	10	7	11
95% C.I.	(4.9-13.3)	(5.4-11.4)	(7.3-13.0)	(11.7-18.5)	(10.6-17.0)	(7.7-13.1)	(4.9-10.9)	(9.4-11.9)
3-4 days	*9*	*8*	*9*	*10*	*10*	*7*	*4*	*8*
95% C.I.	(5.2-14.7)	(5.3-11.4)	(6.4-11.6)	(7.2-12.8)	(7.2-13.1)	(5.2-10.6)	(2.5-6.6)	(7.3-9.7)
4-5 days	4	5	3	4	8	3	1	4
95% C.I.	(2.0-8.5)	(3.2-7.8)	(2.0-5.4)	(2.6-6.7)	(5.7-11.2)	(1.5-4.7)	(0.5-4.0)	(3.6-5.4)
5-6 days	2	1	1	2	1	1	-	1
95% C.I.	(0.4-5.4)	(0.2-2.2)	(0.3-2.7)	(0.8-4.5)	(0.2-1.7)	(0.3-2.2)	(0.0-0.0)	(0.6-1.6)
6-7 days	0	0	0	0	0	-	0	0
95% C.I.	(0.0-1.8)	(0.0-2.4)	(0.0-0.5)	(0.0-0.5)	(0.0-0.2)	(0.0-0.0)	(0.1-1.5)	(0.1-0.4)
Women								
Not heard this advice	60	61	58	52	56	63	76	60
95% C.I.	(53.3-66.6)	(56.5-64.9)	(54.2-62.4)	(48.0-56.2)	(51.7-59.6)	(58.6-66.3)	(72.3-79.7)	(58.0-61.5)
Heard of but don't know the number	3	3	2	3	3	5	6	3
95% C.I.	(1.1-7.9)	(2.1-5.5)	(1.3-4.2)	(1.9-4.4)	(2.1-4.9)	(3.4-6.8)	(3.8-8.0)	(2.8-4.2)
0-1 days	0	1	0	1	1	1	0	1
95% C.I.	(0.0-1.7)	(0.5-2.6)	(0.0-1.8)	(0.5-2.1)	(0.4-1.9)	(0.8-2.6)	(0.2-1.6)	(0.5-1.1)
1-2 days	3	4	6	7	9	7	4	6
95% C.I.	(1.6-7.3)	(2.3-6.4)	(4.5-8.9)	(5.1-9.7)	(6.7-11.4)	(5.4-9.4)	(2.7-6.1)	(5.2-6.9)
2-3 days	12	14	13	17	16	13	6	13
95% C.I.	(8.2-17.4)	(11.0-17.1)	(10.7-15.9)	(14.4-20.5)	(13.2-19.2)	(10.7-16.3)	(4.0-8.1)	(12.3-14.8)
3-4 days	*11*	*9*	*10*	*12*	*10*	*7*	*5*	*10*
95% C.I.	(7.2-16.1)	(6.9-11.9)	(8.0-13.1)	(9.6-15.2)	(7.9-12.7)	(5.7-9.7)	(3.0-6.8)	(8.5-10.7)
4-5 days	7	6	7	7	4	3	2	5
95% C.I.	(4.3-10.7)	(4.0-8.2)	(5.0-9.0)	(4.8-9.3)	(2.8-6.4)	(1.8-4.5)	(1.2-3.5)	(4.6-6.1)
5-6 days	3	2	2	1	1	0	1	1
95% C.I.	(1.5-7.1)	(1.1-3.5)	(1.2-3.4)	(0.4-1.8)	(0.3-1.6)	(0.1-0.9)	(0.5-2.7)	(1.1-2.0)
6-7 days	0	0	1	-	0	0	0	0
95% C.I.	(0.0-0.5)	(0.0-1.3)	(0.1-2.4)	(0.0-0.0)	(0.1-1.6)	(0.0-1.6)	(0.0-1.3)	(0.1-0.5)

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Table 4.7   - Continued

Awareness of advice on number of alcohol-free days per week	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All Adults								
Not heard this advice	66	67	64	56	55	64	73	63
95% C.I.	(60.9-70.5)	(63.8-70.5)	(60.6-66.7)	(53.2-59.6)	(52.4-58.3)	(60.8-66.7)	(70.1-76.3)	(61.5-64.2)
Heard of but don't know the number	2	2	2	2	4	4	6	3
95% C.I.	(1.1-4.8)	(1.6-3.6)	(1.1-2.8)	(1.6-3.3)	(2.7-4.8)	(3.2-5.8)	(4.5-7.9)	(2.6-3.5)
0-1 days	1	1	1	1	1	1	1	1
95% C.I.	(0.1-2.6)	(0.3-1.4)	(0.3-1.4)	(0.4-1.5)	(0.6-1.8)	(0.6-1.7)	(0.6-2.2)	(0.6-1.1)
1-2 days	3	3	6	7	8	8	6	6
95% C.I.	(1.9-5.6)	(2.2-5.3)	(4.6-7.5)	(5.1-8.4)	(6.8-10.2)	(6.7-10.0)	(4.5-7.9)	(5.3-6.6)
2-3 days	10	11	11	16	15	12	6	12
95% C.I.	(7.4-13.5)	(8.9-13.2)	(9.7-13.6)	(13.9-18.5)	(12.7-17.0)	(10.0-13.9)	(4.9-8.2)	(11.2-13.0)
3-4 days	10	8	9	11	10	7	4	9
95% C.I.	(7.1-13.5)	(6.7-10.6)	(7.9-11.4)	(9.1-13.1)	(8.2-12.0)	(6.0-9.3)	(3.2-6.0)	(8.2-9.9)
4-5 days	5	5	5	6	6	3	2	5
95% C.I.	(3.7-8.1)	(4.0-7.2)	(4.0-6.6)	(4.2-7.2)	(4.7-7.9)	(1.9-4.0)	(1.1-3.0)	(4.3-5.5)
5-6 days	2	1	2	1	1	1	1	1
95% C.I.	(1.2-4.7)	(0.8-2.2)	(0.9-2.4)	(0.7-2.6)	(0.3-1.3)	(0.3-1.2)	(0.3-1.6)	(1.0-1.7)
6-7 days	0	0	0	0	0	0	0	0
95% C.I.	(0.0-0.8)	(0.1-1.1)	(0.1-1.2)	(0.0-0.2)	(0.1-0.8)	(0.0-0.9)	(0.1-0.8)	(0.1-0.4)
Bases (weighted):								
Men	599	646	699	730	629	434	293	4030
Women	575	645	763	786	662	502	458	4392
All adults	1174	1291	1462	1516	1292	936	751	8422
Bases (unweighted):								
Men	235	438	583	627	660	561	414	3518
Women	370	672	805	783	822	759	690	4901
All adults	605	1110	1388	1410	1482	1320	1104	8419

Table 4.8   Knowledge of advice on number of alcohol-free days per week, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Awareness of advice on number of alcohol-free days per week	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Not heard this advice	56	61	62	67	68
95% C.I.	(53.2-59.5)	(58.0-63.8)	(59.2-65.2)	(63.9-69.6)	(65.0-70.5)
Heard of but don't know the number	3	3	4	3	3
95% C.I.	(2.1-3.9)	(2.0-3.6)	(2.7-5.0)	(1.9-4.2)	(2.1-4.0)
0-1 days	1	1	1	1	0
95% C.I.	(0.5-1.5)	(0.5-1.5)	(0.4-1.4)	(0.5-2.1)	(0.2-1.0)
1-2 days	7	8	6	4	3
95% C.I.	(6.0-9.0)	(6.8-10.0)	(4.8-7.8)	(3.1-5.3)	(2.5-4.7)
2-3 days	15	12	12	11	10
95% C.I.	(13.2-17.8)	(10.6-14.3)	(10.4-14.2)	(9.2-13.3)	(8.1-11.2)
3-4 days	*11*	*8*	*10*	*8*	*8*
95% C.I.	(9.3-13.7)	(7.0-10.2)	(7.7-11.8)	(6.7-9.9)	(6.4-9.4)
4-5 days	5	5	4	5	6
95% C.I.	(3.8-6.7)	(3.7-6.6)	(2.9-5.3)	(3.6-6.1)	(4.5-7.2)
5-6 days	1	1	1	1	2
95% C.I.	(0.4-1.7)	(0.6-2.3)	(0.8-2.4)	(0.8-2.1)	(1.1-2.9)
6-7 days	0	0	0	0	1
95% C.I.	(0.0-0.4)	(0.1-0.9)	(0.0-0.3)	(0.0-0.2)	(0.2-1.2)
Bases (weighted):	*1637*	*1797*	*1633*	*1682*	*1672*
Bases (unweighted):	*1350*	*1787*	*1722*	*1701*	*1859*

Table 4.9   Motivation to reduce alcohol consumption, 2008, 2009, 2010, 2011

Aged 16 and over   *2008, 2009, 2010, 2011*

Motivation to reduce alcohol consumption	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Pre-contemplation	33	31	31	34
95% C.I.	(30.0-35.6)	(28.1-33.5)	(28.7-33.6)	(31.1-36.4)
Contemplation	2	3	1	2
95% C.I.	(1.7-3.5)	(2.2-4.3)	(0.9-2.0)	(1.3-2.8)
Preparation	3	2	2	4
95% C.I.	(2.0-4.3)	(1.8-3.4)	(1.5-2.9)	(2.7-4.6)
Action	4	4	3	4
95% C.I.	(3.0-5.3)	(3.2-5.8)	(2.1-3.7)	(2.9-5.2)
Maintenance	7	7	6	7
95% C.I.	(5.5-8.3)	(5.4-8.3)	(4.5-6.8)	(5.9-8.9)
Long-term maintenance	51	53	57	50
95% C.I.	(48.3-54.0)	(49.9-55.5)	(54.5-59.6)	(46.8-52.7)
Bases (weighted):	*1846*	*2023*	*2279*	*2276*
Bases (unweighted):	*1846*	*2023*	*2279*	*2276*

Table 4.10   Estimated odds ratios for being in maintenance/long-term maintenance stage of change, 2008-2011 combined, by associated risk factors[a]

Aged 16 and over   *2008-2011 combined*

Independent variables

	Base (weighted) 6592	Odds ratio	95% CI[b]
Sex		(p=0.001)	
Men	2970	1	
Women	3982	1.24	1.09, 1.42
Age		(p=<0.001)	
16-34	1405	1	
35-54	2349	1.06	0.89, 1.27
55-74	2361	1.32	1.09, 1.59
75+	837	3.33	2.53, 4.38
Equivalised household income quintile		(p=<0.001)	
1st (highest)	1297	1.0	
2nd	1295	1.20	0.99, 1.47
3rd	1234	1.37	1.11, 1.68
4th	1193	1.73	1.37, 2.19
5th (lowest)	1251	2.02	1.59, 2.57
Not categorised	682	1.49	1.13, 1.98
Highest education qualification		(p=<0.001)	
Degree or higher	1796	1.0	
HNC/D or equivalent	675	0.95	0.75, 1.19
Higher grade or equivalent	932	0.92	0.74, 1.15
Standard grade or equivalent	1213	1.12	0.91, 1.38
Other school level qualification	620	1.71	1.27, 2.30
No qualifications	1716	1.47	1.18, 1.82
Number of other risk factors[c]		(p=0.017)	
0-1 risks	1305	1.0	
2 risks	2396	0.97	0.80, 1.17
3 risks	2616	0.84	0.69, 1.01
4 risks	635	0.70	0.54, 0.91

a Factors included in the model were: sex, age, SIMD, equivalised household income, educational attainment, household NS-SEC and number of other risk factors present

b Confidence Interval

c The other risk factors included in the count were smoking, consuming fewer than five portions of fruit or vegetables per day, BMI >=25 kg/m^2 and physical inactivity-not being active at the recommended levels
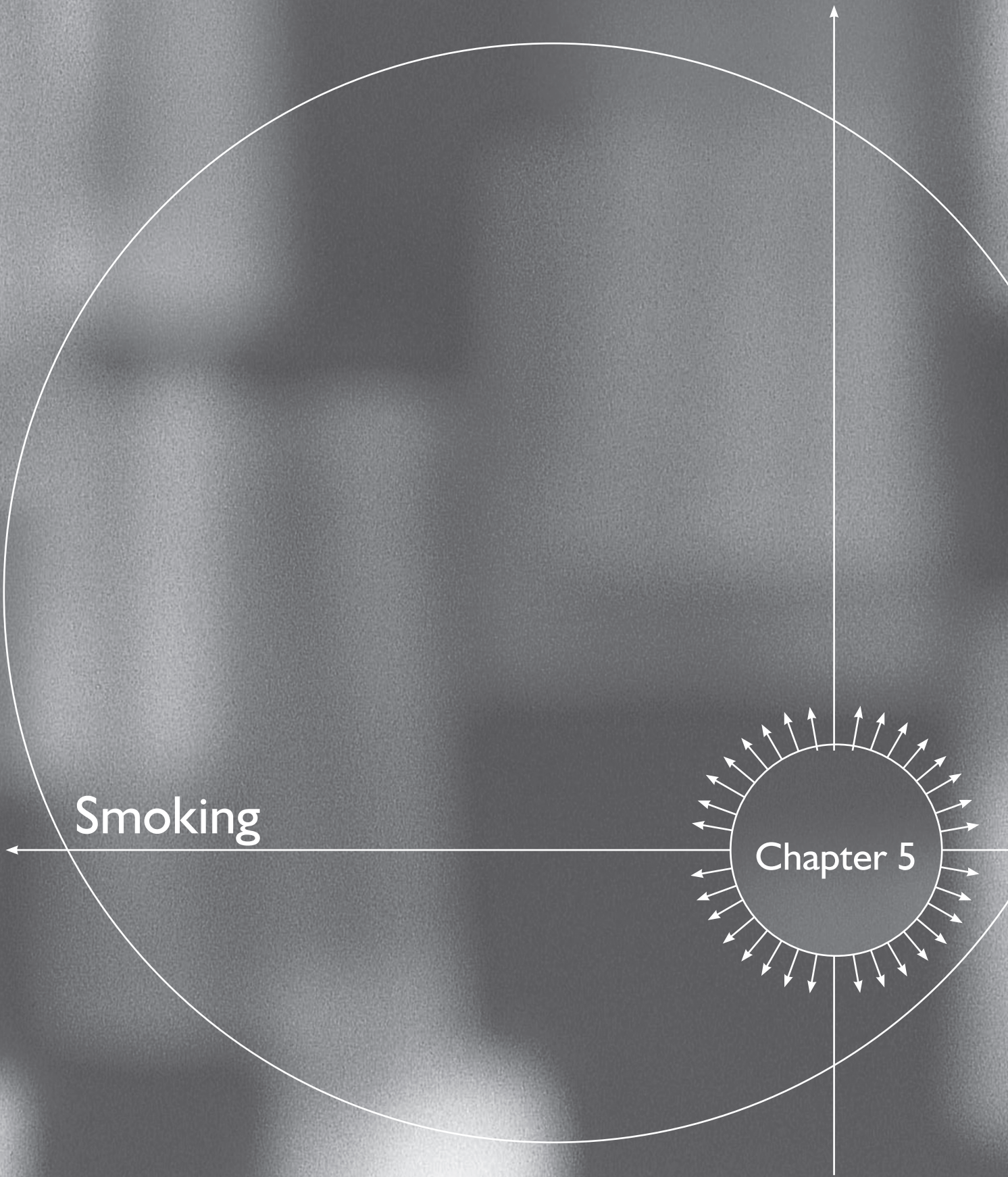
Smoking

Chapter 5

5 SMOKING

Rachel Whalley

SUMMARY
- Most smokers restricted their smoking behaviour when in the presence of non-smoking adults or children.
- When asked what they do when in the presence of non-smoking adults, the majority (91%) of smokers reported altering their behaviour in some way. Sixty-five percent said they would leave the room to smoke, while 14% would remain in the room but refrain from smoking.
- One in ten smokers said they would remain in the room and smoke the same number of cigarettes as usual when in the company of non-smoking adults.
- Smokers restricted their behaviour further when in the presence of children. Just 3% of smokers said they would smoke in a child's presence. Three-quarters (74%) would leave the room to smoke, while 22% said that they would remain in the room but not smoke.
- Both male and female smokers' adopted similar behaviours when in the presence of non-smoking adults and children.
- The most common action among smokers of all ages was to leave the room to smoke when in the presence of children.
- In 2011, 45% of smokers had taken action to try and cut down or stop smoking in the previous year. One in six smokers had managed to sustain a reduction in their smoking levels.
- Just over a quarter (27%) of smokers (in 2011) had made no attempt to cut down or quit smoking and had no plans to do so in the near future.

5.1 INTRODUCTION

Smoking is the health behaviour that has the greatest impact on preventable premature death and ill health in Scotland.[1] Smokers are at increased risk of heart disease, respiratory conditions, cancers, stroke and premature mortality.[2,3,4] Non-smokers exposed to second-hand tobacco smoke are at increased risk of developing lung cancer and heart disease. Around a quarter of all deaths each year (around 13,500) are attributable to smoking and the annual cost to the NHS is around £400 million.[5, 6]

Smoking related harm remains a significant public health concern in Scotland. The ban on smoking in public places is the most widely recognised of a suite of policy actions introduced the last decade to reduce the attraction of smoking. More recent actions have included an increase in the legal age for buying tobacco in Scotland to 18 years and a ban on the open display of tobacco products in shops which will be implemented from April 2013.[7] The Scottish Government National Performance Framework includes an indicator to 'reduce the percentage of adults who smoke.' There is a programme of support in place to encourage existing smokers to quit and one of the HEAT targets[8] for the NHS in Scotland relates to smoking cessation and has a focus on deprivation in recognition of the distinct social patterning to smoking rates in Scotland.[1]

Effective health education on the health risks of smoking is integral to the aspiration for a smoke-free Scotland. Strategies to reduce smoke-related harm

need to include effective use of the media to increase public awareness of the harms of smoking and to direct smokers to the cessation support available. Discouraging young people from taking up smoking is also vital if Scotland is to reduce tobacco use prevalence.

This chapter uses data from the Knowledge, Attitudes and Motivations to Health (KAM) module of the Scottish Health Survey (SHeS) to explore the behaviours and motivations of smokers. After a brief discussion on smoking prevalence in Scotland, the chapter examines smokers' behaviour in the presence both of non-smoking adults and of children. The motivation levels of smokers' to stop or cut down smoking is then explored and the chapter concludes with a brief discussion of key findings.

5.2 SMOKING PREVALENCE IN SCOTLAND IN 2011

The main SHeS interview includes questions for adults (aged 16 or over) on smoking status. In 2011, 23% of adults in Scotland smoked.[9] More than half (55%) had either never smoked, or used to smoke but not regularly, while one in five (22%) described themselves as an ex-regular smoker. Since 2003 there has been a five percentage point decline in the proportion of adults' smoking (28% in 2003).

Cigarette smoking status, SHeS 2011

All adults (aged 16+)	%
Current cigarette smoker	23
Ex-regular cigarette smoker	22
Never regular cigarette smoker/ never smoked at all	55

5.3 HOW DO SMOKERS' BEHAVE IN THE COMPANY OF NON-SMOKING ADULTS OR CHILDREN?

The introduction of a ban on smoking in public places has resulted in a marked reduction in non-smokers exposure to tobacco smoke.[9] Complete elimination of exposure to second hand smoke now, in large part, depends upon smokers themselves placing restrictions on their behaviour. To explore smokers' views about the acceptability of smoking in the presence of non-smokers, KAM participants who smoked cigarettes were asked whether they impose any restrictions on their behaviour when in a room with (a) non-smoking adults and (b) children. Smokers could choose from the following options:

- smoke the same number of cigarettes as usual;
- smoke fewer cigarettes;
- stay in the room and not smoke at all;
- leave the room to smoke.

5.3.1 Smokers' behaviour in the presence of non-smoking adults

It is clear from Table 5.1 that smokers were conscious of the impact their smoking had on non-smokers, or at least were aware that many non-smokers may dislike being exposed to smoke. In 2011, just one in ten (9%) adult smokers reported that, when in the company of non-smoking adults, they stay in the room and smoke the same number of cigarettes as usual. A further 10% said that they stay in the room and continue to smoke but smoke fewer cigarettes. One in six (14%) said they stay in the room but do not smoke while the majority (65%) said they would leave the room to smoke. How smokers' behaved in the company of non-smoking adults did not vary significantly in the 2008 to 2011 period. **Table 5.1**

5.3.2 Smokers' behaviour in the presence of non-smoking adults by age and sex

Male and female smokers adopted very similar behaviours when in the presence of non-smoking adults, although female smokers were significantly more likely than their male counterparts to remain in the room and refrain from smoking (18% compared with 13%).

While overall, the relationship between smoking behaviour and age was not significant there were some noteworthy differences. Older smokers were more likely than younger smokers to report that they would stay in the room and refrain from smoking when in the presence of non-smoking adults (21% of 55 to 74 year olds and 34% of those aged 75 or over compared with 12% of those aged 16 to 24). Conversely, smokers under 55 were more likely than older smokers to instead leave the room to smoke (68%-70% compared with 60% of those aged 55-74 and 47% of those aged 75 or over). It is important to note that there were a relatively small number of smokers in the 75 and over age group. **Table 5.2**

5.3.3 Smokers' behaviour in the presence of children

Smokers were even more conscious of the impact their smoking had on children (Table 5.3). In 2011, just 3% of smokers said they continue smoking when in a room with children. One percent reported they smoke the same number of cigarettes as usual while 2% continue to smoke but reduce the amount of cigarettes they smoke. Three quarters (74%) of smokers reported they leave the room to smoke and a further 22% said they would remain in the room and refrain from smoking.

Between 2008 and 2011 the increase in the proportion of smokers who said they would leave the room to smoke was not significant. However, there was a significant decline in the proportion of smokers that said they would stay in the room and smoke fewer cigarettes than usual (from 5% in 2008 to 2% in 2011). There was also a significant increase in the proportion of men that said they leave a room to smoke when in the company of children (from 66% in 2008 to 79% in 2011). **Table 5.3**

5.3.4 Smokers' behaviour in the presence of children by age and sex

How male and female smokers behaved in the presence of children did not differ, with around seven in ten of both genders reporting that they leave the room to smoke (72% of male smokers and 69% of female smokers). Similarly, a smoker's age was not significantly associated with how they behaved when in the company of a child. The most common action among smokers of all ages was to leave the room to smoke. Although smokers aged 35 to 54 were more likely than those aged 55 to 74 to leave the room (75% compared to 65%) and less likely than them to remain in the room and refrain from smoking (19% compared with 27%). **Table 5.4**

5.4 MOTIVATIONS TO STOP OR CUT DOWN SMOKING

The KAM module included questions designed to assess a smoker's motivation to stop or cut down on smoking. KAM participants were asked:

- whether they tried to cut down on or stop smoking in the past year, and if so
    - whether they managed to maintain this;
- whether they like to cut down on or stop smoking, and if so
    - whether they were thinking of doing this in the next six months.

The readiness of an individual smoker to change their behaviour was determined by using their responses to the above questions to classify them according to the DiClemente and Proschaska 'Stages of Change model'[10] discussed in Chapter 1.

Classification categories range from 'has not tried to cut down or stop smoking in the previous year and is not intending on doing so in the next six months' (the pre-contemplation stage; see table below), to 'took steps to cut down or stop smoking in the previous year and maintained this action' (the maintenance stage). For the purpose of this report a further category called 'long term maintenance' was added. This includes ex-cigarette smokers who did not mention having made any recent changes to their smoking status (i.e. those who stopped smoking cigarettes more than 12 months ago).

The table below outlines the proportion of current smokers in each of the six stages of change in 2011.

Motivations to cut down or stop smoking, 2011

Stage of change	Definition of stage of change	% current smokers 2011
Pre-Contemplation	Not cut down or stopped smoking in the previous 12 months and not intending to do so in the next 6 months	27
Contemplation	Would like to cut down or stop smoking but not intending to do so	11
Preparation	Would like to cut down or stop smoking and thinking of doing so in the next 6 months	17
Action	Cut down or stopped smoking in the previous 12 months but did not maintain these decreased levels	30
Maintenance	Cut down or stopped smoking in the previous 12 months and maintained these decreased levels	15
Long term maintenance	Does not currently smoke and did not cut down on or stop smoking in the previous 12 months	Not applicable

The action and maintenance categories together represent those who were motivated to take steps to cut down or stop smoking in the year prior to interview. In 2011, 45% of smokers had tried to stop or cut down on smoking in the previous twelve months. A third (15% of all smokers) of those who tried to cut down or quit were successful in maintaining the changes they made (although they classified themselves as current smokers at the time of interview indicating that they had not stopped smoking completely).

One in four (27%) smokers was in the pre-contemplation stage of change; they had not taken any steps to stop or cut down smoking in the year prior to interview and were not planning on doing so in the near future. A further 11% expressed a desire to stop or cut down, but were not intending to do so in the next six months. Seventeen percent hadn't taken in positive steps in the last year but were planning to do so in the next six months.
Table 5.6 shows that the vast majority of ex-smokers were classified as being in the long term maintenance stage of change indicating that they stopped

smoking more than twelve months ago. Ninety-two percent of ex-regular smokers and 97% of ex-occasional smokers stopped more than a year prior to interview. Seven percent of those who described themselves as an ex-regular smoker stopped smoking in the previous twelve months.

There was no significant change in smokers' motivation to cut down or quit smoking in the 2008-2011 period. **Tables 5.5 and 5.6**

5.4.1 Factors associated with taking positive steps to cut down or stop smoking

Multivariate logistic regression was used to examine the independent effect of a range of socio-demographic and behavioural characteristics on a smoker's motivation to cut down or stop smoking. The regression model explored factors independently associated with successfully taking or maintaining steps to cut down or quit. This was defined as those classified as being in the 'maintenance' or 'long term maintenance' stages of change; that is those who successfully took steps to cut down the amount they smoked in the previous twelve months (maintenance) or those who stopped or cut down more than twelve months ago or who never smoked (long term maintenance). In the discussion that follows these groups will be referred to collectively as maintainers.

Table 5.7 presents the odds ratios of being a maintainer. In these analyses, the odds of a reference group (shown in the table with a value of 1) are compared with those of the other categories for each individual factor. In this example, an odds ratio of greater than 1 indicates that the group in question has increased odds of being a maintainer compared with the reference category, and an odds ratio of less than 1 mean they have decreased odds. By simultaneously controlling for a number of factors, the independent effect each factor has on the variable of interest can be established. The regression model was run on the combined 2008-2011 data. A description of the factors included in the model is included in an endnote to the chapter.[11]

The factors significantly associated with being a maintainer; that is having never smoked, quit more than twelve months ago or successfully cut down in the last twelve months were; sex, age, educational attainment, socio-economic classification and area deprivation. Household income and presence of other risk factors[12] were not significantly and independently related to motivations towards smoking.

Sex was significantly associated with motivation to cut down or stop smoking. Women had significantly higher odds of being a maintainer than men (odds ratio of 1.23).

There was also a significant association between age and positive motivations towards smoking with those aged 55 or over having higher odds of being in the maintenance/ long term maintenance stages than

those aged 16-34 (odds ratio of 1.91 for those aged 55 to 74 and 3.15 for those aged 75 or over).

Motivations towards smoking were also significantly associated with educational attainment. Compared with those educated to degree level or above, those educated to higher or standard grade level had reduced odds of being a maintainer (odds ratio of 0.53 for those educated to higher level and 0.51 for those educated to standard grade level). Similarly, those with no qualifications had lower odds of being a maintainer than those with at least a degree (odds ratio of 0.41).

When compared with those living in managerial and professional households, those from semi-routine or routine households had decreased odds of being in the maintenance/ long term maintenance stages of change (odds ratio of 0.54).

Area deprivation was significantly associated with being a maintainer but the nature of the relationship was unclear. **Table 5.7**

5.5 DISCUSSION

That the majority of smokers report restricting their behaviour when in the presence of non-smoking adults and children suggests awareness of the harms of second-hand tobacco smoke is high. The further restrictions smokers impose on themselves when in the company of children implies they feel there is a greater need to take additional steps to avoid exposing children to smoke. It is possible that the decline in social acceptability of smoking meant that some smokers felt uncomfortable admitting that they smoke in front of other non-smoking adults or, in particular, in the presence of children. However, other subjective and objective measures collected in the SHeS interview support these findings.[9]

The chapter reinforces earlier findings from the KAM module that most smokers want to reduce or stop smoking.[13] However, a significant proportion of those who tried to cut back or quit were unsuccessful. This highlights the on-going need for tailored smoking cessation support to ensure that those who want to quit get the help they need to be successful.

A quarter of smokers expressed no desire to cut down or stop smoking suggesting that the public health messages on smoking related harms have either not reached them or were not convincing enough for them to change their behaviour. Continued efforts should be made to persuade these smokers to quit.

References and notes

[1]   http://www.healthscotland.com/uploads/documents/7930-TobaccoReport.pdf

[2]   Faraday, M.M., Elliot, B.M. and Grunberg, N.E. Nicotine's behavioural actions differ in adult vs adolescent rats. Nicotine and Tobacco research 2000; 2: 292

[3]   Weincke, J.K., Thurston, S.W., Kelsey, K.T., Varkonyi, A., Wain, J.C., Mark, E.J. et al. Early age at smoking initiation and tobacco carcinogen DNA damage in the lung. Journal of the National Cancer Institute 1999; 91: 614-19

[4]   Tobacco advisory group of the Royal College of Physicians. Nicotine Addiction in Britain. 2000. London, Royal College of Physicians of London

[5]   See: http://www.scotpho.org.uk/behaviour/tobacco-use/key-points

[6]   http://www.scotland.gov.uk/Resource/0039/00398204.pdf

[7]   See: http://www.scotland.gov.uk/News/Releases/2012/12/tobacco12dec

[8]   The 2007 Better Health, Better Care action plan for improving health and health care in Scotland set out how NHS Scotland's HEAT performance management system (based around a series of targets against which the performance of its individual Boards are measured) would feed into the Government's overarching objectives. The HEAT targets derive their name from the four strands in the performance framework: the Health of the population; Efficiency and productivity, resources and workforce; Access to services and waiting times; and Treatment and quality of services.

[9]   Dowling, S (2012). Chapter 4: Smoking in Rutherford, L., Sharp, C. and Bromley, C. *The Scottish Health Survey 2011,* Volume 1: Main Report. Edinburgh: Scottish Government.

[10]   The Stages of Change model (sometimes referred to as The Transtheoretical Model) is a model of health behaviour change developed initially by DiClemente and Prochaska in 1977. Here we refer to the version of the model which contains five 'stages of change' ranging from precontemplation to maintenance. For further reading on the 'Stages of Change model' see DiClemente, C.C., & Prochaska, J.O. (1982). Self change and therapy change of smoking behavior: A comparison of processes of change in cessation and maintenance. Addictive Behavior. 7 (2): 133-42.

[11]   The socio-demographic factors included in the model were: age, SIMD, equivalised household income, educational attainment and household NS-SEC. In addition, in order to assess the association with other behavioural characteristics explored in this report, the model also included a risk score variable measuring the presence of four of the other risk factors measured in the survey; drinking outwith the government's weekly and/or daily drinking guidelines, not meeting the five-a-day fruit and vegetable consumption target, BMI greater than 25 kg/m^2 and physical inactivity - not active at the recommended level. To create the risk scale each of the four behaviours was coded one if the risk factor was present and zero if not. The scale then summed the number of risks across the four categories, resulting in a five point scale from 0-4. The scale was only based on participants for whom data were available for each of the four measures; imputation was not used to handle missing cases. The final risk groups included in the model were: no other risk factors; 1-2 risk factors; 3 risk factors and 4 risk factors.

[12]   The model included an independent variable that measured how many other risk factors a person had. The risk factors included were exceeding the daily or weekly; an unhealthy BMI, failing to meet the physical activity recommendations and not consuming the recommended portions of fruit and vegetables per day. Categories ranged from 0 of these risk factors to all 4 risk factors present.

[13]   Bromley et al. *Knowledge, Attitudes and Motivations to Health – a module of the Scottish Health Survey.* NHS Health Scotland, 2010.

Table list

Table 5.1   Smoking behaviour of self-reported cigarette smokers in room with non-smoking adults, 2008, 2009, 2010, 2011, by sex

Current smokers aged 16 and over   *2008, 2009, 2010, 2011*

Smoking behaviour in room with non-smoking adults	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
Men				
Smoke the same number of cigarettes as usual	7	8	9	9
95% C.I.	(4.2-12.5)	(4.2-13.8)	(5.6-14.4)	(3.7-19.4)
Smoke fewer cigarettes than usual	10	8	6	10
95% C.I.	(6.3-15.7)	(4.7-13.7)	(3.3-9.0)	(5.9-16.3)
Stay in the room and don't smoke	14	14	11	12
95% C.I.	(9.7-20.0)	(8.7-22.9)	(7.8-16.3)	(8.2-17.7)
Leave the room	65	68	69	67
95% C.I.	(56.1-72.2)	(59.3-76.4)	(62.0-76.0)	(57.0-75.4)
Other	4	1	5	2
95% C.I.	(1.3-11.6)	(0.3-4.2)	(1.7-11.8)	(0.6-7.6)
	7	8	9	9
Women				
Smoke the same number of cigarettes as usual	5	4	5	9
95% C.I.	(3.1-8.6)	(2.4-6.9)	(3.5-8.4)	(5.0-14.6)
Smoke fewer cigarettes than usual	9	12	8	10
95% C.I.	(5.9-14.0)	(8.4-18.2)	(5.1-12.0)	(6.9-15.0)
Stay in the room and don't smoke	18	21	18	17
95% C.I.	(13.1-24.0)	(15.7-27.8)	(13.6-23.4)	(12.3-22.2)
Leave the room	66	62	68	63
95% C.I.	(59.0-72.3)	(54.4-68.2)	(61.4-73.3)	(55.9-69.6)
Other	2	1	1	1
95% C.I.	(0.5-5.8)	(0.3-2.3)	(0.3-2.9)	(0.4-4.5)
All adults				
Smoke the same number of cigarettes as usual	6	6	7	9
95% C.I.	(4.3-9.0)	(3.9-9.0)	(5.2-10.2)	(5.3-14.0)
Smoke fewer cigarettes than usual	10	10	7	10
95% C.I.	(7.0-13.1)	(7.5-14.1)	(4.8-9.2)	(7.3-13.9)
Stay in the room and don't smoke	16	18	15	14
95% C.I.	(12.6-20.2)	(13.6-22.8)	(11.6-18.2)	(11.3-18.3)
Leave the room	65	65	69	65
95% C.I.	(59.9-70.2)	(59.3-70.3)	(63.7-73.0)	(58.8-70.5)
Other	3	1	3	2
95% C.I.	(1.2-6.6)	(0.4-2.3)	(1.2-6.4)	(0.7-4.3)

Continued…

Table 5.1 *- Continued*

Current smokers aged 16 and over   *2008, 2009 , 2010, 2011*

Smoking behaviour in room with non-smoking adults	Total 2008	Total 2009	Total 2010	Total 2011
Bases (weighted):	*230*	*241*	*286*	*252*
Men	*236*	*243*	*277*	*258*
Women	*466*	*484*	*562*	*510*
All adults				
Bases (unweighted):				
Men	*215*	*231*	*269*	*235*
Women	*268*	*296*	*338*	*313*
All adults	*483*	*527*	*607*	*548*

Table 5.2 **Smoking behaviour of self-reported cigarette smokers in room with non-smoking adults, 2008-2011 combined, by age and sex**

Current smokers aged 16 and over   *2008-2011 combined*

Smoking behaviour in room with non-smoking adults	Age				Total
	16-34	35-54	55-74	75+	
	%	%	%	%	%
Men					
Smoke the same number of cigarettes as usual	6	10	8	4	8
95% C.I.	(3.6-11.3)	(6.0-15.7)	(4.7-13.2)	(1.4-13.0)	(5.9-11.0)
Smoke fewer cigarettes than usual	8	8	10	6	8
95% C.I.	(4.7-12.2)	(5.5-12.2)	(6.2-16.1)	(1.9-18.6)	(6.4-10.7)
Stay in the room and don't smoke	13	11	17	20	13
95% C.I.	(8.4-18.3)	(7.8-15.3)	(12.1-22.3)	(10.5-34.2)	(10.5-15.7)
Leave the room	69	68	64	66	68
95% C.I.	(61.2-76.0)	(61.3-73.6)	(57.1-71.1)	(51.0-78.7)	(63.4-71.5)
Other	4	3	1	3	3
95% C.I.	(1.5-11.4)	(1.5-6.6)	(0.3-2.5)	(0.8-12.7)	(1.7-5.7)
Women					
Smoke the same number of cigarettes as usual	6	4	8	12	6
95% C.I.	(3.2-9.9)	(2.7-6.6)	(4.8-12.0)	(6.3-23.0)	(4.4-7.6)
Smoke fewer cigarettes than usual	11	9	10	8	10
95% C.I.	(7.8-16.1)	(6.4-12.8)	(6.9-14.8)	(3.3-18.8)	(8.1-12.1)
Stay in the room and don't smoke	11	17	24	44	18
95% C.I.	(7.7-15.7)	(13.5-21.9)	(19.6-30.2)	(32.3-56.6)	(15.9-21.2)
Leave the room	72	68	57	33	65
95% C.I.	(65.4-77.3)	(62.2-72.4)	(50.3-62.9)	(21.8-46.0)	(61.3-67.9)
Other	0	2	1	2	1
95% C.I.	(0.0-1.3)	(0.9-3.9)	(0.2-4.6)	(0.6-9.5)	(0.6-2.2)
All adults					
Smoke the same number of cigarettes as usual	6	7	8	9	7
95% C.I.	(4.0-9.2)	(4.8-10.0)	(5.5-10.9)	(5.0-15.9)	(5.6-8.6)
Smoke fewer cigarettes than usual	9	9	10	7	9
95% C.I.	(6.9-12.4)	(6.6-11.2)	(7.5-13.6)	(3.6-14.5)	(7.8-10.7)
Stay in the room and don't smoke	12	14	21	34	16
95% C.I.	(9.0-15.6)	(11.6-17.4)	(17.5-24.9)	(25.7-43.6)	(13.8-17.6)
Leave the room	70	68	60	47	66
95% C.I.	(65.1-75.0)	(63.4-71.7)	(55.3-64.8)	(37.0-56.5)	(63.4-68.7)
Other	2	2	1	3	2
95% C.I.	(0.9-6.5)	(1.4-4.3)	(0.3-2.5)	(1.1-7.4)	(1.4-3.4)

Continued…

Table 5.2 *- Continued*

Current smokers aged 16 and over   *2008-2011 combined*

Smoking behaviour in room with non-smoking adults	Age				Total
	16-34	35-54	55-74	75+	
Bases (weighted):					
Men	*364*	*422*	*187*	*32*	*1006*
Women	*291*	*442*	*234*	*45*	*1012*
All adults	*654*	*864*	*422*	*77*	*2017*
Bases (unweighted):					
Men	*227*	*412*	*259*	*52*	*950*
Women	*333*	*484*	*329*	*69*	*1215*
All adults	*560*	*896*	*588*	*121*	*2165*

Table 5.3   Smoking behaviour of self-reported cigarette smokers in room with children, 2008, 2009, 2010, 2011, by sex

Current smokers aged 16 and over   *2008, 2009, 2010, 2011*

Smoking behaviour in room with children	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
Men				
Smoke the same number of cigarettes as usual	3	2	3	1
95% C.I.	(1.0-8.0)	(0.7-4.8)	(1.3-7.8)	(0.1-2.4)
Smoke fewer cigarettes than usual	5	2	2	1
95% C.I.	(2.6-9.5)	(0.7-3.7)	(1.0-5.3)	(0.2-5.1)
Stay in the room and don't smoke	24	22	23	18
95% C.I.	(17.5-31.8)	(15.3-31.9)	(17.0-30.1)	(13.1-25.2)
Leave the room	66	72	71	79
95% C.I.	(58.4-73.5)	(63.2-80.0)	(63.5-77.5)	(72.3-84.8)
Other	2	2	1	1
95% C.I.	(0.6-4.9)	(0.6-4.5)	(0.2-1.7)	(0.1-3.2)
Women				
Smoke the same number of cigarettes as usual	2	1	1	1
95% C.I.	(0.6-3.7)	(0.3-1.8)	(0.4-3.8)	(0.6-3.5)
Smoke fewer cigarettes than usual	4	3	3	3
95% C.I.	(2.2-7.6)	(1.7-6.4)	(1.6-6.9)	(1.2-5.4)
Stay in the room and don't smoke	26	23	25	25
95% C.I.	(19.6-32.7)	(18.0-29.8)	(19.8-30.6)	(19.2-31.8)
Leave the room	67	72	70	68
95% C.I.	(59.9-73.4)	(65.3-77.8)	(63.9-75.7)	(60.9-74.5)
Other	2	1	0	3
95% C.I.	(0.5-5.4)	(0.2-1.9)	(0.1-2.7)	(1.0-7.8)
All adults				
Smoke the same number of cigarettes as usual	2	1	2	1
95% C.I.	(1.0-4.6)	(0.6-2.7)	(1.1-4.6)	(0.5-2.1)
Smoke fewer cigarettes than usual	5	2	3	2
95% C.I.	(3.0-7.1)	(1.5-4.2)	(1.6-4.9)	(0.9-3.7)
Stay in the room and don't smoke	25	23	24	22
95% C.I.	(20.3-29.9)	(18.2-28.4)	(19.8-28.5)	(17.4-26.8)
Leave the room	67	72	71	74
95% C.I.	(61.6-71.4)	(66.6-77.2)	(65.7-75.0)	(68.3-78.3)
Other	2	1	1	2
95% C.I.	(0.7-4.1)	(0.5-2.5)	(0.2-1.4)	(0.7-4.3)

Continued…

Table 5.3 *- Continued*

Current smokers aged 16 and over   *2008, 2009, 2010, 2011*

Smoking behaviour in room with children	Total 2008	Total 2009	Total 2010	Total 2011
Bases (weighted):				
Men	*230*	*241*	*286*	*251*
Women	*236*	*243*	*277*	*258*
All adults	*466*	*484*	*562*	*510*
Bases (unweighted):				
Men	*215*	*231*	*269*	*234*
Women	*268*	*296*	*338*	*313*
All adults	*483*	*527*	*607*	*547*

Table 5.4   Smoking behaviour of self-reported cigarette smokers in room with children, 2008-2011 combined, by sex and age

Current smokers aged 16 and over   *2008-2011 combined*

Smoking behaviour in room with children	Age				Total
	16-34	35-54	55-74	75+	
	%	%	%	%	%
Men					
Smoke the same number of cigarettes as usual	1	3	4	2	2
95% C.I.	(0.3-3.5)	(1.1-6.1)	(1.7-8.0)	(0.2-10.6)	(1.3-3.8)
Smoke fewer cigarettes than usual	2	3	2	2	2
95% C.I.	(0.9-5.4)	(1.7-5.5)	(0.6-3.7)	(0.2-11.7)	(1.6-3.8)
Stay in the room and don't smoke	27	16	25	23	22
95% C.I.	(20.0-34.7)	(12.1-20.6)	(19.5-32.3)	(12.8-37.3)	(18.5-25.5)
Leave the room	70	77	68	72	72
95% C.I.	(61.5-76.7)	(71.2-81.3)	(60.9-74.5)	(57.5-83.3)	(68.5-75.9)
Other	0	2	1	2	1
95% C.I.	(0.1-1.3)	(0.8-3.7)	(0.5-3.2)	(0.2-10.4)	(0.6-2.1)
Women					
Smoke the same number of cigarettes as usual	1	1	2	2	1
95% C.I.	(0.5-2.5)	(0.5-2.1)	(0.6-4.3)	(0.3-14.4)	(0.8-2.0)
Smoke fewer cigarettes than usual	3	4	4	2	3
95% C.I.	(1.5-5.7)	(2.1-6.2)	(2.1-6.4)	(0.4-15.6)	(2.4-4.8)
Stay in the room and don't smoke	24	21	29	51	25
95% C.I.	(18.2-31.1)	(16.9-25.8)	(23.4-34.6)	(38.1-62.9)	(22.0-28.2)
Leave the room	72	73	63	44	69
95% C.I.	(64.7-77.7)	(68.2-77.7)	(56.5-68.7)	(31.6-56.4)	(65.7-72.2)
Other	0	1	3	1	1
95% C.I.	(0.0-1.1)	(0.4-3.2)	(1.4-7.2)	(0.2-7.5)	(0.7-2.6)
All adults					
Smoke the same number of cigarettes as usual	1	2	3	2	2
95% C.I.	(0.5-2.3)	(0.9-3.4)	(1.4-4.7)	(0.5-8.2)	(1.2-2.5)
Smoke fewer cigarettes than usual	3	3	3	2	3
95% C.I.	(1.5-4.4)	(2.2-5.0)	(1.7-4.3)	(0.5-8.9)	(2.2-3.8)
Stay in the room and don't smoke	26	19	27	39	23
95% C.I.	(20.8-30.9)	(15.6-21.9)	(23.2-31.6)	(30.2-48.7)	(21.1-25.9)
Leave the room	71	75	65	55	71
95% C.I.	(65.1-75.4)	(71.2-78.2)	(60.4-69.6)	(45.7-64.8)	(68.1-73.1)
Other	0	1	2	1	1
95% C.I.	(0.1-0.8)	(0.8-2.8)	(1.2-4.6)	(0.3-5.1)	(0.8-2.0)

Continued…

Table 5.4 *- Continued*

Current smokers aged 16 and over   *2008-2011 combined*

Smoking behaviour in room with children	Age				Total
	16-34	35-54	55-74	75+	
Bases (weighted):					
Men	*364*	*422*	*187*	*32*	*1005*
Women	*291*	*442*	*234*	*45*	*1012*
All adults	*654*	*863*	*422*	*77*	*2016*
Bases (unweighted):					
Men	*227*	*411*	*259*	*52*	*949*
Women	*333*	*484*	*329*	*69*	*1215*
All adults	*560*	*895*	*588*	*121*	*2164*

Table 5.5 Motivation to stop/cut down smoking (current smokers), 2008, 2009, 2010, 2011

Current smokers aged 16 and over   *2008, 2009, 2010, 2011*

Motivation to stop/cut down smoking	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Pre-contemplation	24	22	29	27
95% C.I.	(19.6-29.2)	(18.1-27.4)	(24.3-34.2)	(21.6-32.1)
Contemplation	13	9	6	11
95% C.I.	(9.5-17.4)	(6.4-12.8)	(4.3-8.4)	(8.4-15.2)
Preparation	13	18	17	17
95% C.I.	(10.0-17.9)	(14.3-23.0)	(11.8-18.8)	(12.5-22.7)
Action	38	38	30	30
95% C.I.	(32.9-43.5)	(32.1-43.3)	(29.8-40.1)	(25.2-35.7)
Maintenance	12	13	15	15
95% C.I.	(8.3-15.8)	(9.3-16.9)	(11.8-19.5)	(11.3-19.5)
Bases (weighted):	*478*	*489*	*588*	*538*
Bases (unweighted):	*490*	*529*	*617*	*561*

Table 5.6 Motivation to stop/cut down smoking, 2008-2011 combined, by self-reported cigarette smoking status (current and ex-smokers)

Current and ex-smokers aged 16 and over   *2008-2011 combined*

Motivation to stop/cut down smoking	Self-reported cigarette smoking status			Total
	Current smoker	Ex-regular smoker	Ex-occasional smoker	
	%	%	%	%
All adults				
Pre-contemplation	25	-	-	12
95% C.I.	(23.1-28.0)	-	-	(11.1-13.6)
Contemplation	10	-	-	5
95% C.I.	(8.2-11.5)	-	-	(4.0-5.5)
Preparation	16	0	1	8
95% C.I.	(14.1-18.4)	(0.0-0.4)	(0.2-3.7)	(6.9-9.1)
Action	35	1	-	17
95% C.I.	(32.2-37.5)	(0.3-1.6)	-	(15.7-18.5)
Maintenance	14	7	2	10
95% C.I.	(12.0-15.9)	(5.4-8.5)	(0.7-4.6)	(8.6-10.9)
Long-term maintenance	-	92	97	48
95% C.I.	-	(90.6-93.8)	(94.2-98.8)	(46.5-50.2)
Bases (weighted):	*2086*	*1835*	*410*	*4330*
Bases (unweighted):	*2197*	*2095*	*394*	*4686*

Table 5.7   Estimated odds ratios for being in maintenance/long-term maintenance stage of change, 2008-2011 combined, by associated risk factors[a]

Independent variables	Base (weighted)	Odds ratio	95% CI[b]
	7646		
Sex		(p=0.032)	
Men	3198	1	
Women	4448	1.23	1.02, 1.49
Age		(p=<0.001)	
16-34	1466	1	
35-54	2469	0.95	0.72, 1.25
55-74	2625	1.91	1.42, 2.57
75+	1086	3.15	2.11, 4.70
Scottish Index of Multiple Deprivation quintile		(p=<0.001)	
5th (least deprived)	1298	1	
4th	1669	1.06	0.72, 1.55
3rd	1585	0.78	0.54, 1.12
2nd	1516	0.58	0.40, 0.83
1st (most deprived)	1578	0.53	0.37, 0.77
Highest education qualification		(p=<0.001)	
Degree or higher	2044	1	
HNC/D or equivalent	715	0.79	0.51, 1.22
Higher grade or equivalent	1013	0.53	0.37, 0.76
Standard grade or equivalent	1266	0.51	0.36, 0.73
Other qualifications	710	0.69	0.43, 1.10
No qualifications	1898	0.41	0.29, 0.60
NS-SEC of household reference person		(p=0.001)	
Managerial & professional	2744	1	
Intermediate	786	0.72	0.50, 1.03
Small employers & own account workers	650	0.70	0.47, 1.04
Lower-supervisory & technical	785	0.82	0.57, 1.20
Semi-routine & routine	2474	0.54	0.40, 0.72
No classification	207	0.64	0.37, 1.10

a Factors included in the model were: sex, age, SIMD, equivalised household income, educational attainment, household NS-SEC and number of other risk factors present
b Confidence Interval

Diet

Chapter 6
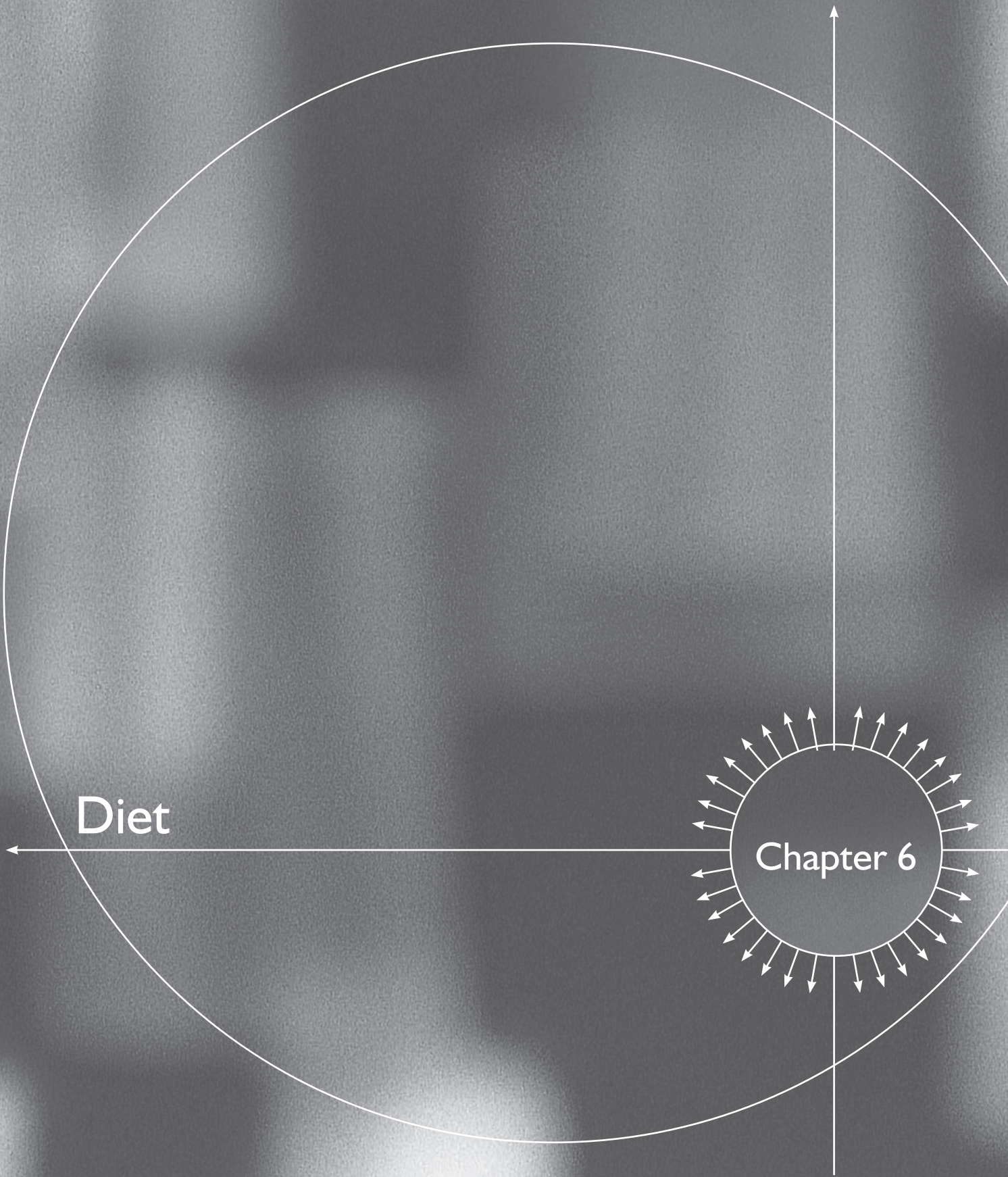
6 DIET

Anna Marcinkiewicz

SUMMARY

- In 2011, 14% of adults in Scotland described the food they ate as 'very healthy', while three quarters (74%) viewed their diets as 'fairly healthy'. Twelve percent described what they ate as 'fairly' or 'very unhealthy.'

- Between 2008 and 2011 there were no significant changes in the way people viewed their diets.

- Nine in ten (89%) adults were familiar with the advice to consume at least five portions of fruit or vegetables every day. Six percent underestimated the amount it was advised to consume while 4% did not know what the advice was.

- Men, older people and those living in the most deprived areas in Scotland were less familiar with the five-a-day guideline than other groups in society.

- In 2011, over a third (38%) of adults reported taking some steps to improve their diet in the previous year. However, a similar proportion had not made any positive changes to their diet and did not intend on doing so, yet fell short of the recommended target for fruit and vegetable consumption.

- There was no evidence that motivation levels to improve diet were any higher in 2011 than in 2008.

6.1 INTRODUCTION

Scotland's unhealthy diet is widely cited as a factor in its poor health record.[1,2,3,4] Improving diet is a critical part of the Scottish Government's 'Preventing overweight and obesity in Scotland route map.'[5] The long term aim of the route map is that the majority of Scotland's population be a healthy weight throughout life.

Reflecting a belief that relying solely on individuals to change their behaviour is not enough to tackle the obesity epidemic, the route map's action plan contains a series of cross-cutting commitments that include public sector, third sector and industry involvement. Included in the route map is a re-affirmation of the Scottish Dietary Goals laid down in the 'National Food and Drink Policy for Scotland'.[5] The extension of the Scottish Government's national 'Take Life On' campaign was also an acknowledgement of the role social marketing can play as a means of influencing social norms and empowering healthier food choices.

One of the Scottish Government's most established policies in relation to diet has been to promote the World Health Organisation recommendation that adults eat at least five portions of varied fruit and vegetables a day.[1] A lack of fruit and vegetables in the diet of people in Scotland has been shown to be a risk factor in a range of serious health problems, such as heart disease, cancer, type II diabetes and obesity.[5]

The questions in the Knowledge, Attitudes and Motivations to Health (KAM) module of the Scottish Health Survey (SHeS) were designed to explore the

public's awareness and understanding of some of the key health messages around diet as well as motivation to adopt a healthier diet. This chapter begins by exploring how people assess their own diets, and then moves on to explore knowledge of the five-a-day recommendation and how it relates to actual fruit and vegetable consumption. Differences in knowledge levels in relation to age, gender and area deprivation are also examined. The chapter concludes by exploring people's motivations to eat more healthily and the relationship between people's knowledge, motivations and behaviour.

6.2   FRUIT AND VEGETABLE CONSUMPTION IN SCOTLAND IN 2011

The main SHeS interview asked participants detailed questions about their fruit and vegetable consumption in the 24 hours preceding the interview, with the aim of monitoring adherence to the '5-a-day' recommendation. Fruit and vegetable consumption is, of course, only one aspect of a healthy diet. However, as a proxy measure for a healthy diet, the findings can help contextualize the main findings on this chapter on perceptions, knowledge, attitudes and awareness of diet and health.

In 2011, the mean number of portions of fruit and vegetables consumed per day by adults in Scotland was 3.2.[6] Mean daily consumption was higher for women (3.3) than for men (3.1). One in five (22%) adults met the recommended daily intake of five or more portions in the day preceding their interview, while 1 in 10 (9%) ate none. Again, women were more likely than men to have met the recommendation (23% compared with 20%).

Adult fruit and vegetable consumption, SHeS 2011

Aged 16 and over	%
None	9
Less than 1 portion	4
1 portion or more but less than 2	18
2 portions or more but less than 3	18
3 portions or more but less than 4	17
4 portions or more but less than 5	13
5 portions or more	22

6.3   HOW DO PEOPLE VIEW THEIR OWN DIETS?

In addition to being asked a series of detailed questions in the main SHeS interview about what food and drink they consume, participants in the KAM module were also asked to assess how healthy they thought their diet was by answering the following question:

Thinking overall about the things you eat, which of these best describes the kind of food you eat nowadays? (Very healthy, fairly healthy, fairly unhealthy or very unhealthy)

In 2011, most adults in Scotland assessed their diet in very positive terms. One in six (14%) considered the food they ate to be 'very healthy' and a further 74% assessed it as 'fairly healthy'. Just over one in ten (12%) described their diet as either 'fairly' or 'very unhealthy'. People's perceptions of how healthy their diets were did not change significantly from when the question was first asked in 2008. Between 2008 and 2011 the proportion of people describing the food they eat as 'fairly healthy' fluctuated between 73% and 76%.

The 2008/2009 KAM report noted that perceptions are not uniform across society.[7] Women, for example, were more likely than men to assess the food they ate as healthy. Similarly, older people had the most positive perceptions of their diet. People living in low income households or in areas of greater deprivation were less likely than others to describe the food they ate as healthy.

With the caveat noted above that fruit and vegetable consumption is only one aspect of a healthy diet, the apparent gap between people's beliefs about their diet and their actual behaviour highlighted in previous analysis was still evident in 2011.[7] Almost nine in ten (88%) adults described themselves as 'fairly' or 'very healthy' eaters, yet the SHeS found that only 22% of the population met the five-a-day target. While previous analysis identified those who met the five-a-day target as the group most likely to describe their diet as healthy, it also noted that a significant proportion (69%) of those who consumed no fruit or vegetables still considered their diet to be 'fairly' or 'very healthy'.[7]   **Table 6.1**

6.4   KNOWLEDGE OF THE FIVE-A-DAY GUIDELINE

As noted in the previous section, the 2011 SHeS showed that fewer than a quarter (22%) of adults in Scotland ate the recommended five portions of fruit or vegetables a day, while one in ten (9%) ate none.[6] To assess awareness of the five-a-day recommendation, KAM participants were asked how many portions of fruit and vegetables they thought people were advised to eat every day.

In 2011, most people in Scotland were not only aware that they should eat fruit and vegetables but also knew how many portions they were advised to consume every day. Nine in ten (89%) knew that the advice was to eat at least five portions every day while 6% thought that the guidance was to eat fewer portions than this and just 1% thought they should consume more than five portions. Just 4% reported that they did not know what the advice was. Between 2008 and 2011 knowledge of the recommendation remained unchanged, with the proportion correctly identifying the recommended level of consumption fluctuating between 86% and 89% across this period.   **Table 6.2**

6.4.1   Knowledge of the five-a-day guideline by age and sex

Analysis of the combined 2008-2011 KAM data confirmed the previous finding that despite high knowledge levels overall, knowledge levels still varied significantly across different groups of people in society.[7] As shown in Table 6.3, in 2008-2011 awareness of the five-a-day policy

was significantly higher among women than men (91% compared with 84%), with men more likely to underestimate how much they should consume (9% compared with 5%). Knowledge of the recommendation varied by age among both men and women, with those aged 75 or over least likely to know how many portions they should be eating every day (75% among all adults aged 75 or over). **Table 6.3**

6.4.2 Knowledge of the five-a-day guideline by area deprivation (SIMD)

Awareness of the five-a-day recommendation significantly declined in line with area deprivation. Nine in ten (92%) of those living in Scotland's least deprived areas (SIMD quintile 5) knew how many portions of fruit and vegetables they should eat everyday compared with 82% of those living in areas of greatest deprivation (SIMD quintile 1). In addition, people living in Scotland's most deprived areas (SIMD quintile 1) were most likely to both underestimate how much fruit and vegetables should be consumed daily (10% compared with 4% in SIMD quintile 5), and to say they didn't know what the recommendation was (7% compared with 2% in SIMD quintile 5). **Table 6.4**

6.4.3 Knowledge of the recommendation by self-reported fruit and vegetable consumption

In 2011, nine in ten (89%) adults in Scotland were aware that the government advised people to consume at least five portions of fruit or vegetables a day. Yet the fact that only one in five (22%) actually met the recommended target in this same period indicates a potentially large gap between knowledge and behaviour.[6]

Table 6.5 demonstrates that there was an association between knowledge of the five-a-day recommendation and actual fruit and vegetable consumption. People consuming five or more portions of fruit and vegetables had greatest awareness of the five-a-day guidance (91% compared with 80% of those who had not consumed any fruit or vegetables in the 24 hours prior to interview.) Those consuming no fruit and vegetables were most likely to report that they did not know how many portions a person should eat every day (9% compared with between 2% and 4% of those consuming at least some) and were also more likely than those who met the target to underestimate the recommended number of portions. However, while these variations in knowledge are important, it is worth noting that across the board awareness was still relatively high even among those falling short of the target. **Table 6.5**

6.5 MOTIVATIONS TO EAT MORE HEALTHILY

A person's motivation to eat more healthily was assessed by asking KAM participants the following questions:

- whether they had tried to eat more healthily in the past year, and if so
  - whether they had managed to maintain this;
- whether they would like to eat more healthily, and if so
  - whether they were thinking of doing this in the next six months.

As discussed in the introductory chapter, an individual's readiness to change a particular behaviour was determined by using their responses to the above questions to classify them according to DiClemente and Proschaska's 'Stages of Change' model.[8] The Stages of Change model offers an explanatory framework for behaviour change and suggests that people go through six different linear stages on their journey to changing their behaviour.

In this example, classification ranges from 'has not tried to eat more healthily in the previous 12 months and is not intending on doing so in the next 6 months' (the pre-contemplation stage in the table below), to 'took steps to eat more healthily and maintained the action' (the maintenance stage). For the purpose of this report a further category called 'long term maintenance' has been added. This includes those people who did not mention having made any changes to their diet in the past year or wanting to eat more healthily but who already consumed five portions of fruit or vegetables per day. The creation of this long term maintenance category means that all those in the pre-contemplation group did not meet the five-a-day target.

While it is important to bear in mind that people who meet the government's fruit and vegetables recommendation may not have healthy diets in other respects, it is nonetheless a useful proxy of healthy eating behaviour.

The table below outlines the proportion of the adults at each of the six stages of change in 2011.

Motivations to eat more healthily, 2011

Stage of change	Definition of stage of change	2011 %
Pre-contemplation	Not tried to eat more healthily in the previous 12 months and is not intending to do so in the next 6 months	39
Contemplation	Would like to eat more healthily but not intending to do so in next 6 months	4
Preparation	Would like to eat more healthily and is thinking of doing so in next 6 months	8
Action	Took steps to eat more healthily in previous 12 months but did not maintain this action	14
Maintenance	Took steps to eat more healthily in the previous 12 months and maintained this action	24
Long term maintenance	Did not take steps to eat more healthily in previous 12 months and no desire to do so in the next 6 months, and meets the five-a-day recommendation.	12

Base=All aged 16+

The action and maintenance groups, in combination, represent those who took some steps to adopt a healthier diet in the year prior to interview, albeit with varying success. Encouragingly, a quarter (24%) of adults said they had been motivated to adopt a healthier diet in the previous year and had also managed to maintain this. Fourteen percent had tried to eat more healthily but had not managed to maintain this. Twelve percent were at the long term maintenance stage, indicating that they were currently happy with their diets, were not attempting to make further changes and currently ate the recommended five portions of fruit and vegetables per day.

In 2011, four in ten adults (39%) were in pre-contemplation – that is they had not improved their eating habits in the previous year and did not intend on doing so in the next six months, despite not meeting the five-a-day recommendation at the time of interview. Four percent wanted to eat more healthily but were not intending to do so in the near future, while 8% were thinking of adopting a healthier diet in the next six months.

Motivation levels fluctuated between 2008 and 2011 but with no clear pattern. The significant increase in the proportion of people in pre-contemplation

between 2009 and 2010 (from 34% to 41%) was not maintained in 2011 (39%). Similarly, the significant decrease in the proportion of people in maintenance between 2008 and 2010 (from 28% to 22%) was not maintained in 2011 (24%).

Table 6.6

6.5.1 Motivations to eat more healthily by self-reported fruit and vegetable consumption

The relationship between a person's motivation to eat more healthily and their actual fruit and vegetable consumption is presented in Table 6.7. While the motivations questions asked about whether people wanted to eat more healthily in general, and fruit and vegetable consumption is only one aspect of a healthy diet, this is still a useful way of exploring the relationship between behaviour and people's motivations to improve their health.

Of those who had not eaten any fruit and vegetables in the 24 hours prior to interview, almost half (46%) expressed no desire or intention to adopt a healthier diet in the next six months (pre-contemplation).Over a third (36%) of those who didn't consume any fruit and vegetables said they had at least taken steps to improve their diet in the previous twelve months, with greater or lesser success. A similar pattern was seen among those that consumed some fruit and vegetables the previous day but not to the recommended level.

Of those who met the fruit and vegetables target, half (54%) had not made any dietary changes in the last year and were not intending to do so (long term maintenance), suggesting that other aspects of their diet were also positive. Seven percent wanted to adopt a healthier diet while four in ten (39%) had adopted a healthier lifestyle in the previous year, with varying success.

Table 6.7

6.5.2 Factors associated with taking positive steps to eat more healthily

Multivariate logistic regression was used to examine the independent effect of a range of socio-demographic and behavioural characteristics on an individual's motivation to improve their diet. The regression model explored factors independently associated with successfully taking or maintaining steps to eat more healthily. This was defined as those classified as being in the 'maintenance' or 'long term maintenance' stages of change; that is those who successfully took steps to eat more healthily in the previous twelve months (maintenance) or those who didn't take or plan to take any steps to eat more healthily and who already met the daily target of five or more portions of fruit or vegetables (long term maintenance). In the discussion that follows these groups will be referred to collectively as maintainers.

Table 6.8 presents the odds ratios of being a maintainer. In these analyses, the odds of a reference group (shown in the table with a value of 1) are compared with those of the other categories for each individual factor. In this example, an odds ratio of greater than 1 indicates that the group in question has increased odds of being a maintainer compared

with the reference category, and an odds ratio of less than 1 mean they have decreased odds. By simultaneously controlling for a number of factors, the independent effect each factor has on the variable of interest can be established. The regression model was run on the combined 2008-2011 data. A description of the factors included in the model is included in an endnote to the chapter.[9]

The factors found to be associated with being a maintainer were: sex, age, level of education and presence of other risk factors. Area deprivation, household income and socio-economic classification were not significantly associated with motivations to eat more healthily.

Sex was significantly associated with taking positive steps to eat more healthily, with women having higher odds of being a maintainer than men (odds ratio of 1.29).

When compared with those aged 16 to 34, those aged 75 or over had reduced odds of being in the maintenance/ long term maintenance stages of change (odds ratio of 0.75).

There was also a significant association between a person's educational attainment and the likelihood of them having taken positive steps to improve their diet. When compared with those educated to degree level or above, those with lower qualifications or no qualifications at all had decreased odds of being a maintainer. Odds were lowest for those with no qualifications (odds ratio of 0.40).

The number of other risk behaviours[9] a person had was also significantly associated with motivation to eat more healthily. People with two or more other risk factors had lower odds of being in the maintenance/ long term maintenance stages of change than those with one or none. Those with four other risk factors had the lowest odds of being a maintainer (odds ratio 0.61).   **Table 6.8**

6.6 KNOWLEDGE, MOTIVATION AND BEHAVIOUR TOWARDS EATING MORE HEALTHILY

This section draws on the findings presented in the earlier sections. It examines trends in knowledge of the five-a-day recommendation; fruit and vegetable consumption; motivation to adopt a healthier diet; and the relationship between them. In Figure 6A, knowledge, behaviour and motivation levels are tracked over the 2008-2011 period using the following measures:

  - Knowledge – percentage who correctly identified the recommended number of portions of fruit and vegetables to be consumed per day
  - Behaviour – percentage who consumed at least five portions of fruit and vegetables in the 24 hours prior to being interviewed
  - Motivation – percentage who took steps to eat more healthily diet in the previous 12 months (this combines the 'action' and 'maintenance' categories from the table above)

Figure 6A
Knowledge, behaviour and motivations towards diet,
2008-2011 combined

Legend:
- Knowledge - Aware of advice to consume at least 5 portions of fruit & veg every day
- Behaviour - Consumed at least 5 portions of fruit or veg on day prior to interview
- Motivation - Took action to eat more healthily in last 12 months

Y-axis: Percent (0 to 100)
X-axis: Survey year (2008, 2009, 2010, 2011)
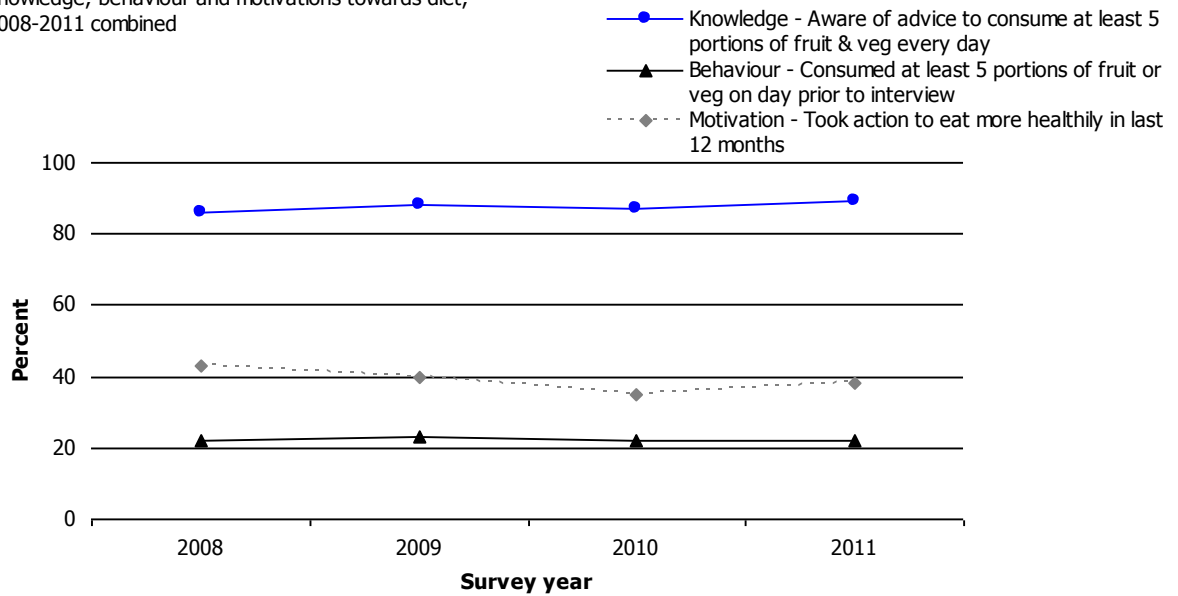
In 2011, 9 in 10 (89%) adults knew that the advice was to consume at least five portions of fruit and vegetables every day, making it the most widely recognised of the public health messages discussed in this report. However, with just 22% actually consuming the recommended amount in this same period, the size of the gap between knowledge of recommended consumption and actual consumption (labelled as 'behaviour') is considerable.[6] Similarly, motivations to adopt a healthier diet lagged somewhat behind knowledge with 38% indicating that they had taken steps to improve their diet in the year prior to interview.

What is also very apparent from Figure 6A is the lack of change on any of the measures in the 2008-2011 period. Since 2008, knowledge of the five-a-day guideline remained very high, at between 86% and 89%. At the same time, since 2008 there has been no improvement in the proportion actually eating five-a-day, fluctuating between 22% and 23% in the years since then. Nor has there been any evidence of increased motivation to adopt a healthier diet. In 2008, 43% reported taking steps to improve their diet and since then it has fluctuated between 35% and 40%. **Figure 6A**

While not directly comparable with KAM data, the findings from the Health Education Population Survey (HEPS), the predecessor to the module, nonetheless offer some useful insight into these measures prior to 2008.[10] HEPS included questions on healthy eating between 1996 and 2007 and during this period recorded significant increases in both knowledge of the five-a-day recommendation and actual fruit and vegetable consumption.[11] The increase was particularly pronounced with regards awareness of the guidelines, rising steadily from 21% in 1996 to 78% in 2007. Unlike SHeS, HEPS also noted a significant increase in the proportion of the population eating at least five portions of fruit or vegetables a day (from 18% in 1996 to 34% in 2007). The rate of increase, however, slowed down considerably in the latter years of the survey. In addition, it is also important to note that HEPS had a smaller sample size than SHeS.

6.7 DISCUSSION

This chapter explored how adults in Scotland view their diets, and also examined how familiar people are with one of the most long-standing messages in public health education; to consume at least five portions of fruit and vegetables every day. The extent to which people are motivated to adopt a healthier diet was also explored and the chapter concluded with a brief discussion on the relationship between healthy eating, knowledge, behaviour and motivations.

On the whole, adults in Scotland tend to view their diets positively. In 2011, most people (88%) described the food they ate as 'fairly' or 'very healthy'. Yet findings from the most recent SHeS show that in this same period just 22% actually met the fruit and vegetable recommendations.[6] One possible explanation for this gap between beliefs about diet and actual behaviour is that fruit and vegetable consumption is just one aspect of a healthy diet, and on its own, is not a sufficient measure of a person's overall diet. Nevertheless, given the recognised importance of fruit and vegetables in a healthy diet, the magnitude of the gap is such that it is also likely to indicate some level of disconnect between people's beliefs about the food they eat and what they actually eat.

One aspect of healthy eating that is already very familiar to the public is the guidance to eat at least five portions of fruit and vegetables every day. That nine in ten adults in Scotland are aware of how much they should be consuming, indicates just how successful the work to educate the public on this has been. While there are still some groups of people in society less familiar with the guideline than others (women, older people and those living in areas of greatest deprivation), across the board knowledge is high. With such a high proportion of the population already familiar with the recommendation, it is perhaps not surprising to see knowledge levels stabilise in recent years. The lack of change may indicate that public awareness of the guideline has now reached saturation point. Given that most people, including those consuming no fruit and vegetables, now know how much they should be consuming, perhaps future campaigns should begin to focus on educating people on how to meet the recommendation.

The health communications approach to behaviour change assumes that knowledge and motivation are important influences on behaviour.[11] If people are to change their behaviour and improve their diets then they need to have both the knowledge on how to do so that and the motivation to make the necessary changes. Yet, with just 38% reporting to have taken positive steps towards improving their diet in 2011 and a similar proportion expressing no desire to make any changes, there appears to be little appetite for a healthier diet among the public. Furthermore, since 2008 there has been no evidence of people becoming any more motivated to take positive steps towards a healthier diet.

Moreover, the findings show that over a third of those who fail to meet the 5-a-day target nonetheless say that they have taken steps to improve their diet in the last 12 months. That a significant proportion say their diet has got healthier but falls short of a key target is perhaps indicative of the limitations of assessing

the healthiness of a person's diet on the basis of fruit and vegetable consumption alone. These people may, of course, have made other healthy changes to their diet - but this finding does suggest that, in spite of high levels of awareness of the five-a-day recommendation, fruit and vegetable consumption is not always viewed as an essential component in eating healthier.

Government and NHS health education campaigns continue to convey the key messages about the importance of having a healthy diet. That 89% of adults in 2011 are now aware of how much fruit and vegetables they should be consuming is encouraging and is testament to how successful particular aspects of the education campaign have been. Nevertheless, fruit and vegetable consumption, a key component of a healthy diet, remains low and has shown no signs of improving in recent years. Motivation to adopt a healthier diet also remains low among the public. A better understanding of how people view and go about formulating assessments of their own diets could offer useful insights for any future education campaigns on healthy eating. Similarly, an exploration of why some groups in society are reluctant or unmotivated to make any positive changes to improve their diet could also help determine the shape those campaigns.

References and notes

1   http://www.who.int/dietphysicalactivity/publications/fruit_vegetables_report.pdf

2   http://www.who.int/whr/2002/en/whr02_en.pdf

3   http://whqlibdoc.who.int/trs/WHO_TRS_916.pdf

4   http://www.scotland.gov.uk/Resource/Doc/277346/0083283.pdf

5   Preventing Overweight and Obesity in Scotland: A Route Map Towards Healthy Weight. Edinburgh: the Scottish Government, 2010.

6   Whalley, R. (2012). Chapter 5: Diet. In Rutherford, L., Sharp, C. and Bromley, C. [eds.] The 2011 Scottish Health Survey – Volume 1: Adults. Edinburgh, Scottish Government. Available from: http://www.scotland.gov.uk/Publications/2012/09/7854

7   Bromley et al. *Knowledge, Attitudes and Motivations to Health – a module of the Scottish Health Survey*. NHS Health Scotland, 2010.

8   The Stages of Change model (sometimes referred to as The Transtheoretical Model) is a model of health behaviour change developed initially by DiClemente and Proschaska in 1977. Here we refer to the version of the model which contains five 'stages of change' ranging from pre-contemplation to maintenance. For further reading on the 'Stages of Change model' see DiClemente, C.C., & Prochaska, J.O. (1982). 'Self change and therapy change of smoking behavior: A comparison of processes of change in cessation and maintenance' *Addictive Behavior* 7 (2): 133-42.

9   The socio-demographic factors included in the model were: age, SIMD, equivalised household income, educational attainment and household NS-SEC. In addition, in order to assess the association with other behavioural characteristics explored in this report, the model also included a risk score variable measuring the presence of four of the other risk factors measured in the survey; smoking, drinking outwith the government's weekly and/or daily guidelines, BMI >=25 kg/m^2, and physical inactivity - not active at the recommended level. To create the risk scale each of the four behaviours was coded one if the risk factor was present and zero if not. The scale then summed the number of risks across the four categories, resulting in a five point scale from 0-4. The scale was only based on participants for whom data were available for each of the four measures; imputation was not used to handle missing cases. The final risk groups included in the model were: no other risk factors; 1-2 risk factors; 3 risk factors and 4 risk factors.

10   Bassett, C., Gilbey, N. and Catto, S.[ed] (2008) *Health Education Population Survey: Update from 2007 survey*, NHS Health Scotland. This survey was carried between 1996 and 2007, prior to the KAM module being introduced into the Scottish Health Survey.

11   http://www.scotpho.org.uk/downloads/scotphoreports/scotpho101027_kfd_report.pdf

Table list

Table 6.1   Self-assessment of own diet, 2008, 2009, 2010, 2011

Aged 16 and over   *2008, 2009, 2010, 2011*

Self-assessment of own diet	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Very healthy	16	12	15	14
95% C.I.	(13.6-17.7)	(10.5-13.9)	(13.5-17.6)	(12.6-16.4)
Fairly healthy	74	76	73	74
95% C.I.	(71.1-76.1)	(73.7-78.5)	(70.5-75.6)	(71.7-76.4)
Fairly unhealthy	10	10	10	10
95% C.I.	(8.3-12.1)	(8.5-12.5)	(8.7-12.5)	(8.2-12.0)
Very unhealthy	1	1	1	2
95% C.I.	(0.4-1.5)	(0.7-2.7)	(0.6-1.5)	(0.9-2.5)
Bases (weighted):	*1844*	*2022*	*2279*	*2273*
Bases (unweighted):	*1841*	*2020*	*2278*	*2272*

Table 6.2   Knowledge of fruit and vegetable recommendations, 2008, 2009, 2010, 2011

Aged 16 and over   *2008, 2009, 2010, 2011*

Knowledge of recommendations (5 or more portions per day)	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Underestimated recommendation	8	7	6	6
95% C.I.	(6.6-10.0)	(5.4-8.0)	(5.1-8.0)	(5.0-7.8)
Knew recommendation	86	88	87	89
95% C.I.	(83.9-87.9)	(85.6-89.2)	(84.9-89.0)	(86.8-90.3)
Overestimated recommendation	1	1	2	1
95% C.I.	(0.7-2.0)	(0.8-1.7)	(1.1-3.1)	(0.9-2.0)
Didn't know recommendation	5	5	5	4
95% C.I.	(3.7-5.9)	(3.6-6.1)	(3.6-6.0)	(3.0-4.9)
Bases (weighted):	*1846*	*2022*	*2279*	*2274*
Bases (unweighted):	*1846*	*2022*	*2279*	*2273*

Table 6.3 Knowledge of fruit and vegetable recommendations, 2008-2011 combined, by age and sex

Knowledge of recommendations (5 or more portions per day)	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Underestimated recommendation	7	12	8	8	7	11	13	9
95% C.I.	(3.6-12.0)	(8.0-17.0)	(5.6-10.8)	(6.0-11.2)	(5.5-10.2)	(8.5-15.1)	(9.6-16.3)	(7.8-10.4)
Knew recommendation	88	83	87	86	85	77	68	84
95% C.I.	(81.6-92.4)	(78.1-87.7)	(83.4-90.0)	(82.4-89.4)	(81.9-88.2)	(72.6-80.8)	(63.1-73.4)	(82.1-85.3)
Overestimated recommendation	3	1	1	2	2	1	1	2
95% C.I.	(0.8-8.3)	(0.5-2.7)	(0.6-2.8)	(0.8-4.0)	(0.9-3.1)	(0.4-2.3)	(0.5-3.7)	(1.1-2.4)
Didn't know recommendation	3	4	4	4	5	11	18	6
95% C.I.	(1.2-6.1)	(2.0-6.2)	(2.2-6.4)	(2.1-6.4)	(3.9-7.8)	(8.2-13.9)	(13.8-22.3)	(4.8-6.6)
Women								
Underestimated recommendation	3	4	4	4	4	7	8	5
95% C.I.	(1.8-6.1)	(2.9-6.5)	(2.7-6.4)	(2.6-5.9)	(3.0-6.5)	(5.6-9.7)	(5.7-9.9)	(4.1-5.6)
Knew recommendation	92	91	93	94	93	88	79	91
95% C.I.	(87.4-94.4)	(88.2-93.3)	(90.2-94.7)	(91.5-95.5)	(91.2-95.1)	(85.5-90.5)	(75.5-81.9)	(89.7-91.6)
Overestimated recommendation	2	1	1	1	1	1	2	1
95% C.I.	(0.7-3.8)	(0.6-2.7)	(0.8-2.6)	(0.5-1.8)	(0.4-1.7)	(0.6-2.3)	(0.8-3.0)	(0.9-1.6)
Didn't know recommendation	4	3	2	1	1	3	12	3
95% C.I.	(1.8-7.2)	(1.9-5.4)	(0.8-3.2)	(0.7-2.9)	(0.7-2.1)	(2.0-5.0)	(9.7-14.8)	(2.7-3.9)
All adults								
Underestimated recommendation	5	8	6	6	6	9	9	7
95% C.I.	(3.2-7.8)	(6.0-10.9)	(4.5-7.7)	(4.6-7.7)	(4.7-7.5)	(7.5-11.3)	(7.8-11.5)	(6.1-7.6)
Knew recommendation	90	87	90	90	89	83	75	87
95% C.I.	(86.1-92.5)	(84.3-89.7)	(87.9-91.8)	(87.9-92.0)	(87.6-91.1)	(80.5-85.3)	(71.9-77.6)	(86.4-88.3)
Overestimated recommendation	2	1	1	1	1	1	1	1
95% C.I.	(0.9-4.7)	(0.7-2.2)	(0.9-2.2)	(0.8-2.4)	(0.8-2.0)	(0.6-1.8)	(0.8-2.6)	(1.1-1.8)
Didn't know recommendation	3	3	3	3	3	7	14	4
95% C.I.	(1.9-5.4)	(2.3-5.0)	(1.8-4.1)	(1.6-4.0)	(2.4-4.5)	(5.3-8.4)	(12.1-16.7)	(3.9-5.0)

Table 6.3 *- Continued*

Knowledge of recommendations (5 or more portions per day)	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	*600*	*646*	*699*	*728*	*629*	*434*	*293*	*4029*
Women	*575*	*645*	*763*	*786*	*662*	*502*	*458*	*4392*
All adults	*1175*	*1291*	*1462*	*1514*	*1292*	*936*	*751*	*8421*
Bases (unweighted):								
Men	*236*	*438*	*583*	*627*	*660*	*561*	*414*	*3519*
Women	*370*	*672*	*805*	*783*	*821*	*759*	*691*	*4901*
All adults	*606*	*1110*	*1388*	*1410*	*1481*	*1320*	*1105*	*8420*

Table 6.4   Knowledge of fruit and vegetable recommendations, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Knowledge of recommendations (5 or more portions per day)	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Underestimated recommendation	4	6	6	7	10
95% C.I.	(2.6-5.4)	(5.0-7.9)	(4.9-7.8)	(5.9-9.1)	(8.6-12.7)
Knew recommendation	92	88	88	87	82
95% C.I.	(90.1-94.0)	(85.8-89.8)	(86.2-90.1)	(84.8-88.7)	(79.1-83.9)
Overestimated recommendation	2	2	1	2	1
95% C.I.	(0.8-3.2)	(1.0-2.7)	(0.7-2.2)	(1.0-2.3)	(0.5-1.7)
Didn't know recommendation	2	4	4	4	7
95% C.I.	(1.6-3.4)	(3.0-5.6)	(3.3-5.5)	(3.4-5.5)	(5.7-8.5)
Bases (weighted):	*1637*	*1795*	*1633*	*1683*	*1673*
Bases (unweighted):	*1350*	*1786*	*1723*	*1702*	*1859*

Table 6.5   Knowledge of fruit and vegetable recommendations, 2008-2011 combined, by reported fruit and vegetable consumption

Aged 16 and over   *2008-2011 combined*

Knowledge of recommendations	Fruit and vegetable consumption			Total
	None	Less than 5 portions	5 portions or more	
	%	%	%	%
All adults				
Underestimated recommendation	10	7	5	7
95% C.I.	(6.9-13.1)	(6.3-8.0)	(3.8-6.4)	(6.1-7.6)
Knew recommendation	80	87	91	87
95% C.I.	(75.5-83.6)	(85.9-88.1)	(89.7-92.9)	(86.4-88.3)
Overestimated recommendation	1	1	2	1
95% C.I.	(0.5-2.7)	(1.0-1.9)	(1.0-2.3)	(1.1-1.8)
Didn't know recommendation	9	4	2	4
95% C.I.	(7.0-12.5)	(3.9-5.2)	(1.5-3.1)	(3.9-5.0)
Bases (weighted):	*768*	*5726*	*1926*	*8421*
Bases (unweighted):	*707*	*5722*	*1990*	*8420*

Table 6.6   Motivations to eat more healthily, 2008, 2009, 2010, 2011

Aged 16 and over   *2008, 2009, 2010, 2011*

Motivations to eat more healthily	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Pre-contemplation	34	34	41	39
95% C.I.	(31.1-36.4)	(31.1-36.4)	(37.8-43.2)	(35.8-41.3)
Contemplation	3	4	3	4
95% C.I.	(2.6-4.6)	(2.7-5.0)	(2.2-4.2)	(3.1-5.3)
Preparation	7	9	8	8
95% C.I.	(5.8-8.9)	(7.8-11.5)	(0.8-6.6)	(6.6-9.6)
Action	15	16	13	14
95% C.I.	(12.9-16.9)	(13.9-18.4)	(11.5-15.5)	(11.8-15.8)
Maintenance	28	24	22	24
95% C.I.	(25.7-31.0)	(22.1-26.7)	(20.2-24.7)	(21.4-26.6)
Long-term maintenance	12	13	13	12
95% C.I.	(10.7-14.2)	(11.1-14.7)	(11.1-14.4)	(10.3-13.6)
Bases (weighted):	*1846*	*2022*	*2279*	*2276*
Bases (unweighted):	*1846*	*2022*	*2279*	*2276*

Table 6.7   Motivations to eat more healthily, 2008-2011 combined, by reported fruit and vegetable consumption

Aged 16 and over   *2008-2011 combined*

Motivations to eat more healthily	Fruit and vegetable consumption			Total
	None	Less than 5 portions	5 portions or more	
	%	%	%	%
All adults				
Pre-contemplation	46	48	-	37
95% C.I.	(41.1-51.0)	(46.3-49.7)	-	(35.5-38.2)
Contemplation	7	4	2	4
95% C.I.	(4.8-10.1)	(3.0-4.3)	(1.2-3.1)	(3.1-4.1)
Preparation	11	9	5	8
95% C.I.	(8.4-14.5)	(7.9-10.0)	(3.8-6.4)	(7.4-9.1)
Action	19	15	11	14
95% C.I.	(15.2-23.6)	(13.6-16.1)	(9.5-13.3)	(13.4-15.4)
Maintenance	17	25	28	25
95% C.I.	(13.2-21.3)	(23.1-26.1)	(25.2-30.2)	(23.4-25.8)
Long-term maintenance	-	-	54	12
95% C.I.	-	-	(51.4-57.0)	(11.6-13.3)
Bases (weighted):	*769*	*5726*	*1928*	*8423*
Bases (unweighted):	*708*	*5722*	*1992*	*8423*

Table 6.8   Estimated odds ratios for being in maintenance/long-term maintenance stage of change, 2008-2011 combined, by associated risk factors[a]

Independent variables	Base (weighted)	Odds ratio	95% CI[b]
	6174		
Sex		(p=<0.001)	
Male	2702	1	
Female	3472	1.29	1.13, 1.48
Age		(p=0.016)	
16-34	1135	1	
35-54	2048	0.92	0.76, 1.11
55-74	2189	1.03	0.84, 1.26
75+	802	0.75	0.59, 0.95
Highest education qualification		(p=<0.001)	
Degree or higher	1609	1	
HNC/D or equivalent	569	0.89	0.69, 1.15
Higher grade or equivalent	814	0.75	0.60, 0.94
Standard grade or equivalent	1033	0.51	0.42, 0.63
Other school level qualification	580	0.47	0.36, 0.60
No qualifications	1569	0.40	0.33, 0.48
Number of other risk factors[c]		(p=<0.001)	
0-1 risks	1835	1	
2 risks	2658	0.83	0.71, 0.97
3 risks	1423	0.64	0.53, 0.77
4 risks	258	0.61	0.43, 0.84

[a] Factors included in the model were: sex, age, SIMD, equivalised household income, educational attainment, household NS-SEC and number of other risk factors present

[b] Confidence Interval

[c] The other risk factors included in the count were smoking, drinking outwith government's daily and/or weekly guidelines, BMI >= 25 kg/m^2, and physical inactivity (not being active at the recommended levels)
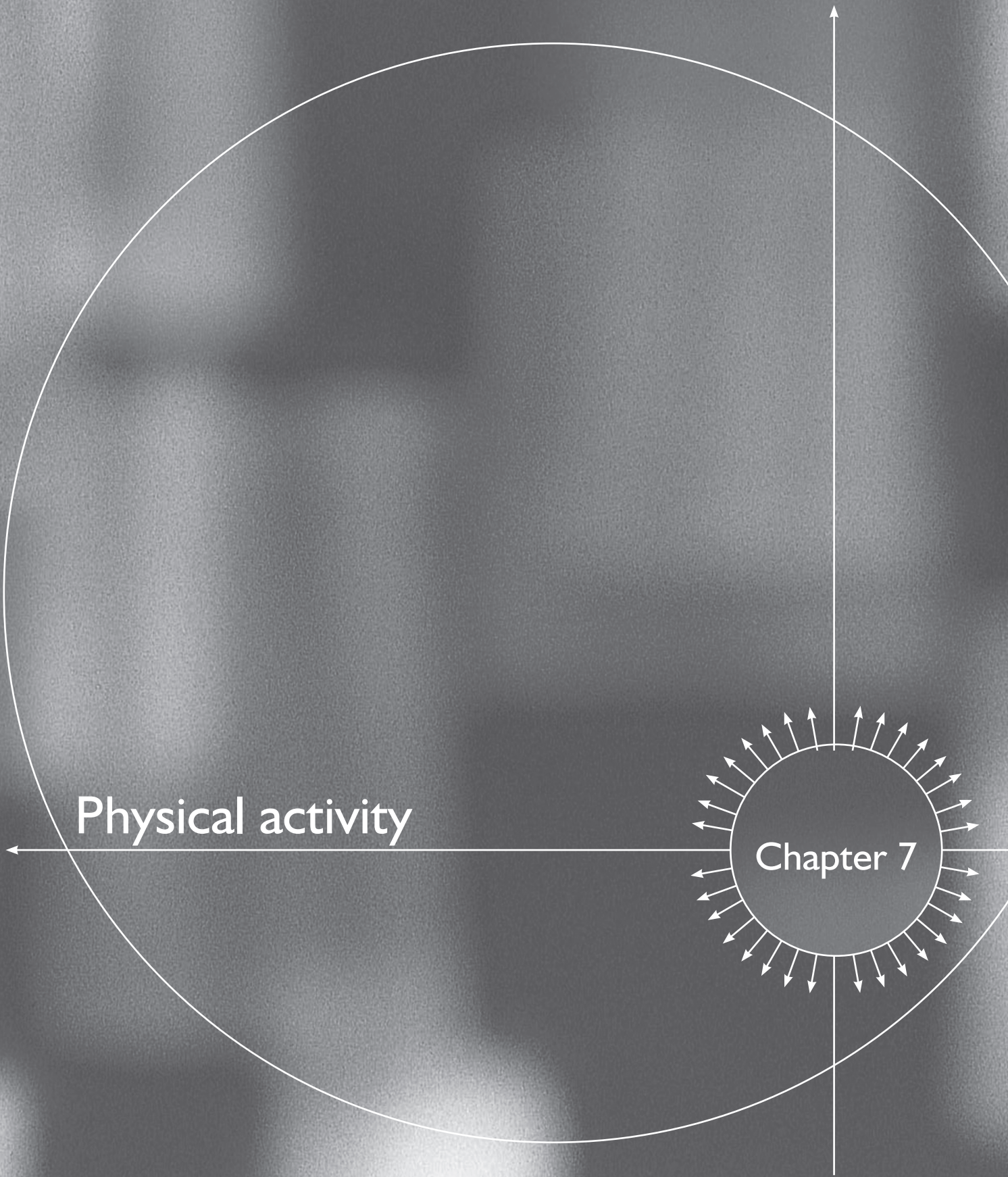
Physical activity

Chapter 7

7   PHYSICAL ACTIVITY

Shanna Dowling

SUMMARY

- In 2011, more than half of adults (55%) thought that they did sufficient physical activity to keep healthy, with no significant change reported in people's perceptions over the period 2008 to 2011.

- Over a third (36%) of those that fell short of the recommended level of activity thought that they did enough activity to stay healthy.

- Only a quarter (27%) of adults in Scotland knew how much physical activity the government advised people to do. People most frequently underestimated the amount of physical activity advised.

- Knowledge of government recommendations on physical activity was highest – although still low - amongst those who met the guidelines (27%).

- Both age and area deprivation were identified as factors significantly associated with knowledge of the guidelines, with older people and those in the most deprived areas least likely to know the recommended levels of physical activity.

- Knowledge of the health benefits of physical activity was lowest amongst older people and those living in more deprived areas.

- In 2011, a third of adults in Scotland had not taken any steps towards increasing the amount of physical activity they undertook in the previous twelve months, and had no plans to do so in the near future, despite not doing the recommended amount of activity at the time of interview.

- More than a third of adults in 2011 (37%) reported having taken steps to increase their levels of physical activity in the previous twelve months, more than half of whom had managed to maintain these increased levels.

- Each year between 2008 and 2011, lack of time was cited as the main barrier to undertaking more physical activity.

- Knowledge of the recommendations on physical activity increased among adults in Scotland over the period 2008 to 2011; there was not, however, any significant change in reported activity levels or motivation levels to be more active in the same period.

7.1   INTRODUCTION

Inactive people are at increased risk of a range of health conditions including becoming overweight or obese, developing cardiovascular disease, high blood pressure and diabetes and having poorer mental wellbeing. The World Health Organisation has identified physical inactivity as the fourth leading risk factor in global mortality.[1]

In recent years, various policy initiatives and strategies to increase levels of physical activity across the population have been pursued in Scotland. The review of the strategy 'Let's Make Scotland More Active'[2] recommended improving awareness of the benefits of undertaking a certain level of activity (at least 30 minutes of moderate activity on most days of the week for adults). A target of 50% of adults meeting the recommended levels of physical activity by 2022 was set and, following on from this, the Scottish Government introduced a new indicator – to increase physical activity – to the revised National

Performance Framework in 2011.[3] Increasing physical activity levels is also central to the success of the Scottish Government's 'Preventing Overweight and Obesity in Scotland: a Route Map Towards Healthy Weight.'[4]

As well as the longstanding 'Take Life On' campaign, which promotes physical activity and provides tips for increasing activity levels, there are also plans to incorporate physical activity initiatives and advice into the healthcare system with the piloting of physical activity brief interventions in primary care.[5] However, there is some evidence to suggest that the most effective interventions for increasing physical health may be linked to structural changes to the environment and transport systems (e.g. creating safe and accessible walking and cycling routes, providing accessible outdoor spaces).[6]

This chapter examines data collected in the Knowledge, Attitudes and Motivations to Health module (KAM) included in the Scottish Health Survey (SHeS) between 2008 and 2011. People's views of their own physical activity levels are presented along with their assessments of whether they think they are doing enough activity to maintain good health. Perceived activity levels are also examined alongside actual reported behaviour (measured in the main SHeS interview). Knowledge of the government's guidance on physical activity is also explored along with awareness of the various health benefits of being physically active. The chapter then moves on to discuss how motivated people are to be more physically active before concluding with a brief discussion on the relationship between people's knowledge, behaviour and motivations on physical activity.

7.2 PHYSICAL ACTIVITY LEVELS IN SCOTLAND IN 2011

In the main SHeS interview participants are asked a series of detailed questions on the types of physical activity they do; how frequently they are active and for how long each time. Answers to these questions help monitor what proportion of the adult population is active at the recommended levels. In 2011, four in ten adults met the government's physical activity recommendation; that is they were active for thirty minutes or more on at least five days a week.[7] A further three in ten did some activity but fell short of the recommended level. A third (32%) fell well short of the guideline and spent fewer than thirty minutes a week doing moderate of vigorous activity.

Physical activity levels, SHeS 2011

Aged 16 and over	%
Meets recommendations - 30 minutes or more on at least 5 days a week	39
Some activity – 30 minutes or more on 1 to 4 days a week	29
Low activity – fewer than 30 minutes a week	32

7.3 DO PEOPLE THINK THEY DO ENOUGH PHYSICAL ACTIVITY TO STAY HEALTHY?

The 2011 SHeS reported that four in ten (39%) adults in Scotland met the government's recommended level of physical activity.[7] In addition to answering detailed questions on activity levels, participants in the KAM module were also asked the following question to assess whether they thought they did enough physical activity to stay healthy:

For your age, do you think you do enough physical activity to stay healthy?

More than half (55%) of adults (aged 16 and over) in 2011 thought that they did a sufficient amount of activity to keep healthy, 43% did not, while 3% were not mobile. Comparison with the figures for reported levels of physical activity (see table above) shows this to be notably higher than the proportion who actually met the government's recommended levels in this same period.

Actual physical activity levels did not change significantly in the period 2008 to 2011 period and nor did people's perceptions of whether they did enough physical activity to stay healthy.[7] In 2008, over half of adults (54%) thought they did enough to stay healthy dropping, but not significantly, to 52% in 2009 and 2010 before rising again to 55% in 2011. Alongside that, the proportion of the population who thought they were active enough also remained stable over this same period.   **Table 7.1**

7.3.1 Perceptions of activity level by reported activity

One of the advantages of including the KAM module in the SHeS interview is that it enables a comparison between a person's perception of their activity level (i.e. whether they thought they did enough to stay healthy) and their actual activity (collected in the main SHeS interview) to be made. The 2011 findings, presented in Table 7.2, lend weight to the argument that many people are not aware of how much physical activity they need to do to remain healthy. When asked, over a third (36%) of those falling significantly short (doing fewer than 30 minutes of moderate or vigorous activity a week) of the recommended activity levels said they did enough activity to stay healthy. Over half (55%) of the least active did, however, acknowledge that they did not do enough to keep healthy.

Among those who did some activity (30 minutes or more on one to four days a week), around half (53%) recognised that they didn't do enough to stay healthy but a similar proportion (46%) believed they were active enough. The majority (71%) of those that met the government's physical activity recommendations said they did enough to keep healthy, although three in ten (29%) of this group still felt they could be more active.   **Table 7.2**

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7.4 KNOWLEDGE OF THE GOVERNMENT GUIDELINES ON PHYSICAL ACTIVITY

Public health campaigns in Scotland and across the UK have attempted to increase awareness of the level of physical activity required to stay healthy. To assess the success of such campaigns, participants in the KAM module were asked how much time they thought the government advised people to spend each week doing moderate physical activity.

7.4.1 Knowledge of physical activity guidelines

In 2011, only a quarter (27%) of adults in Scotland knew how much time the government advised people to spend doing moderate physical activity each week. Most people (44%) underestimated what is advised, 14% overestimated and one in six (15%) said they did not know what was advised. Although awareness was low, it is notable that a higher proportion of adults (39%), nevertheless met the recommendation (see Section 7.2).

Knowledge of the physical activity recommendations for each year since 2008 is presented in Table 7.3. While the proportion of adults correctly identifying the recommended activity levels remained low in this period, it did increase significantly between 2008 and 2011 (from 22% to 27%). In this same period, there was a simultaneous significant decrease in the proportion underestimating the recommendations (from 51% in 2008 to 44% in 2011). This increase is in line with findings from the Health Education Population Survey (HEPS) which, although not directly comparable with the KAM findings, also identified a small increase in awareness of the physical activity guidelines between 1996 and 2007.[8]   **Table 7.3**

7.4.2 Knowledge of physical activity guidelines by age and sex

Analysis of the combined data from the 2008 to 2011 KAM modules confirmed previous findings that there was little difference in men and women's knowledge of the recommendation.[9] Twenty-three per cent of men and 26% of women correctly identified the level of activity advised. Men were, however, significantly more likely than women to overestimate the amount of activity required to meet the recommendation (15% compared with 11%).

Proportion of adults that know recommended level of physical activity for adults, 2008 - 2011 combined, by age and sex
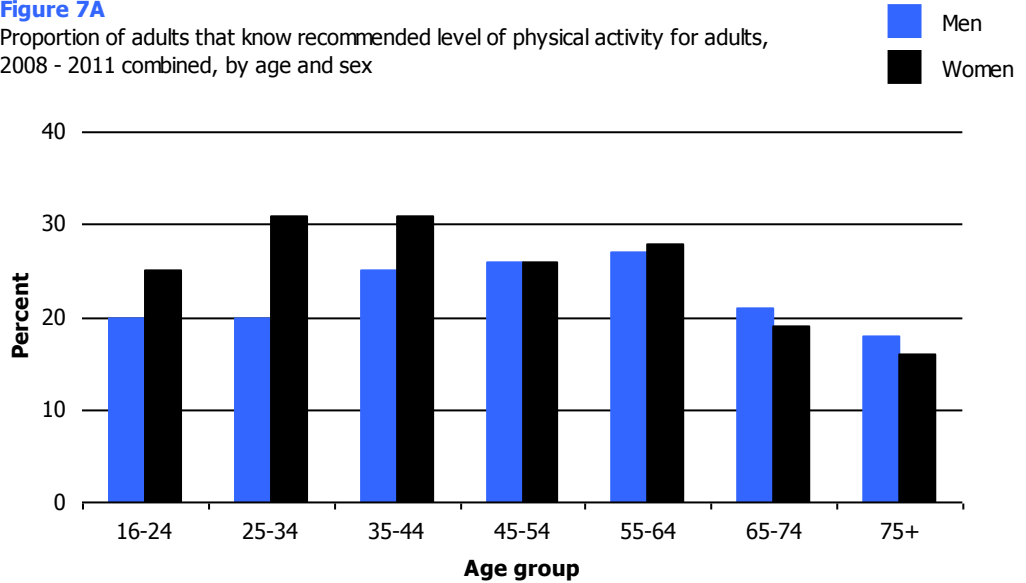
Knowledge of the physical activity guidelines varied significantly by age. Those aged 35 to 64 were most likely to correctly identify how much activity the government recommended people do each week (ranging from 26% to 28% among this age group). Awareness among older age groups was significantly lower than this (17% among those aged 75 and over). Older people were also most likely to say that they did not know what the recommendation was (44% of those aged 75 or over and 27% of those aged 65 to 74, compared with 15% of all adults).

The most common answer among all age groups (except those aged 75 and over), was to underestimate the amount of activity advised. The proportion underestimating what is recommended ranged from 46% to 55% for the different age groups up to age 64; for those aged 65 to 74 the proportion underestimating the recommended activity level was 39%.   **Figure 7A, Table 7.4**

7.4.3   Knowledge of physical activity guidelines by area deprivation

Awareness of the physical activity guidelines was significantly associated with area deprivation. People living in the 20% most deprived areas in Scotland (SIMD quintile 1) were significantly less likely than those living in areas of least deprivation (SIMD quintile 5) to be aware of the government's advice on activity levels (21% compared with 27% of those in SIMD quintile 5; see Figure 7B). The difference in knowledge is largely explained by the significantly higher proportion of people in the most deprived areas who said they did not know what the recommendation was (18% compared with 10% in the least deprived areas). People's likelihood of overestimating or underestimating the recommendation did not vary greatly by deprivation.

Figure 7B, Table 7.5

Figure 7B
Knowledge of physical activity recommendations
by SIMD quintile, 2008 - 2011 combined

Legend:
- Less than advised
- 30 mins on 5+ days
- More than advised
- Don't know

SIMD quintile (x-axis): 5th (Least deprived), 4th, 3rd, 2nd, 1st (Most deprived)
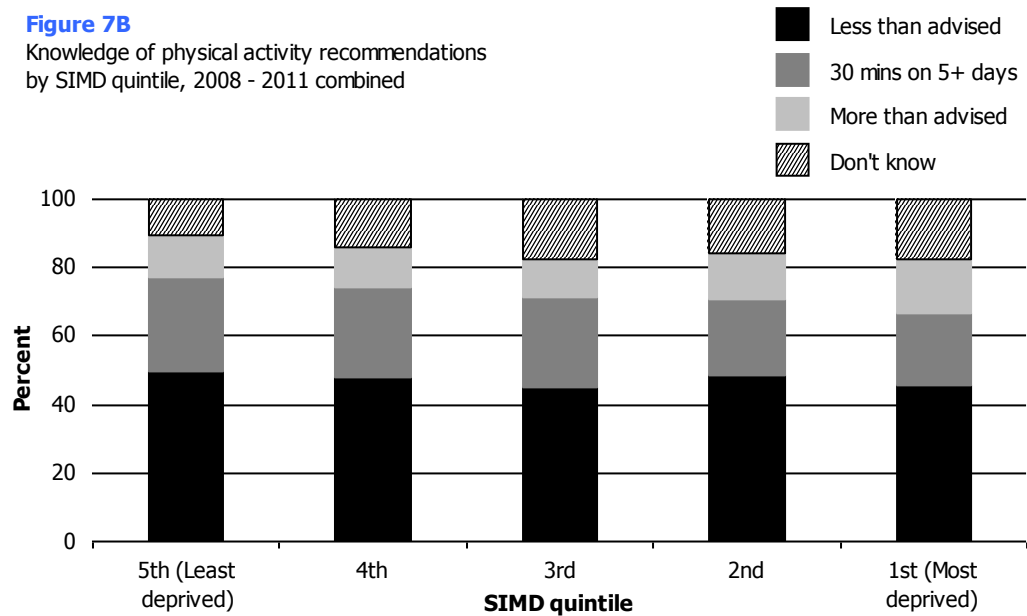
7.4.4 Knowledge of physical activity guidelines by reported levels of activity

Awareness of the physical activity guidelines by self-reported activity level (collected in the main SHeS interview) is presented in Table 7.6. The findings confirm the lack of alignment between people's knowledge of the recommendation on activity and their reported activity levels. Knowledge of the guidelines was low across the population, even among those who actually met the recommendation (27%).

Those who did the required amount of activity or who did moderate amounts of activity were significantly more likely than those reporting low activity levels to know how much activity the government advised (27% and 25% respectively, compared with 21%). A quarter of those with low activity levels did not know what the government advised, a significantly higher proportion than among those active at medium to high levels (10% of those who met the guidelines and 12% of those who did medium levels of activity). **Table 7.6**

7.5 KNOWLEDGE OF THE HEALTH BENEFITS OF PHYSICAL ACTIVITY

7.5.1 Knowledge of health benefits of physical activity

To assess people's awareness of the health benefits of physical activity, KAM participants were presented with a list of conditions and asked to select which, if any, they thought a physically active person was less likely to develop. As in previous years, the three most common conditions mentioned in the 2008 to 2011 period were overweight and obesity (88%), heart disease (84%) and high blood pressure (67%).[9] Four in ten people thought that a physically active person was less likely to get diabetes (43%) or mental health problems (39%), while one in ten (11%) thought that a physically active person had reduced risks of all of the conditions listed.

Awareness of the link between physical activity and reduced risk was lower in relation to some cancers (30%), injuries and accidents (21%) and stomach ulcers (19%).   **Table 7.7**

7.5.2   Knowledge of health benefits of physical activity by age and sex

The three conditions most frequently mentioned were the same for both men and women: overweight and obesity, heart disease and high blood pressure. Women were, however, less likely than men to know that a physically active person had reduced risk of heart disease (81% compared with 86% of men) and high blood pressure (64% compared with 69% of men). On the other hand, women were more likely than men to recognise the link between physical inactivity and osteoporosis (35% compared with 22% of men) and mental health problems (43% compared with 35% of men).

Across all age groups, the three most frequently identified conditions were the same: overweight and obesity, heart disease and high blood pressure. On the whole, however, older people tended to be least knowledgeable about the health consequences of physical inactivity. For example knowledge of the reduced risk of high blood pressure among active people was lowest among those aged 65 to 74 (55%) and 75 or over (46%) compared with levels which ranged from 64% to 77% for other age groups.

There was also some evidence of lower levels of awareness among the youngest age group (16 to 24 year olds). For example, 16 to 24 year olds were less likely than those in the middle age groups to know about the link between physical inactivity and mental health problems (27% compared with 50% for the 35 to 44 age group), and some cancers (26% compared with 39% for those aged 35 to 44).   **Table 7.7**

7.5.3   Knowledge of health benefits of physical activity by area deprivation

Knowledge of the health benefits of leading an active life was significantly associated with area deprivation (Table 7.8). While the conditions most commonly mentioned were the same regardless of area deprivation (overweight and obesity, heart disease and high blood pressure), there were some differences in awareness levels, with those living in the most deprived areas of Scotland tending to be less familiar with the links between physical inactivity and ill health.

For example, almost half (46%) of those living in the least deprived areas in Scotland (SIMD quintile 5) identified a link between activity levels and mental health problems, significantly higher than the 31% of those in the most deprived areas (SIMD quintile 1) that did so. Similarly, those living in areas of greatest deprivation were also less likely to know that people who were physically active were at reduced risk of developing some cancers (23% compared with 35% in the least deprived quintile), diabetes (38% compared with 49% in the least

deprived quintile) and osteoporosis (24% compared to 35% in the least deprived quintile).   **Table 7.8**

7.6   MOTIVATIONS TO BE MORE PHYSICALLY ACTIVE

The KAM module included questions designed to determine how motivated a person was to lead a more physically active life. Motivation was assessed by asking participants the following questions:

- whether they had tried to be more physically active in the past year, and if so
  - whether they had manage to maintain this;
- whether they would like to be more physically active, and if so
  - whether they were thinking of doing this in the next six months.

An individual's readiness to change a given behaviour was determined by using their responses to the above questions to classify them according to DiClemente and Proschaska's 'Stages of Change' model.[10] The Stages of Change model suggests that people go through six different linear stages on their journey to changing their behaviour.

In this example, classification ranges from 'has not tried to be more active in the previous twelve months and is not intending on doing so in the next six months' (the pre-contemplation stage in the table below), to 'took steps to be more active in the last twelve months and maintained this action' (the maintenance stage). For the purpose of this report a further category called 'long term maintenance' has been added. This includes those people who did not mention having made any recent changes to their activity levels or that they planned to do so in the near future, but who were already active at the recommended level. The creation of the 'long term maintenance' category means that everyone in the 'pre-contemplation' stage of change was not active at the recommend level.

The table below shows the proportion of adults in Scotland in each of the six stages of change in 2011.

Motivations to be more physically active, 2011

Stage of change	Definition of stage of change	2011 %
Pre-contemplation	Did not try to increase activity levels in the previous 12 months and is not intending to do so in the next 6 months and did not meet the physical activity recommendations	30
Contemplation	Would like to be more physically active but is not intending on doing so in the next 6 months	3
Preparation	Would like to be more physically active and is thinking of doing so in the next 6 months	11
Action	Took steps to increase activity levels in the previous 12 months but did not maintain this action	17
Maintenance	Took steps to increase activity levels in the previous 12 months and maintained this action	20
Long term maintenance	Did not take steps to increase activity levels in previous 12 months and no desire to do so in next 6 months, but already active at the recommended level	19

Base=All aged 16+

In combination, the action and maintenance categories represent those people that took steps to be more physically active in the year prior to interview. In 2011, a significant proportion of adults (37%) were motivated to increase their activity levels. While not everyone who took steps to become more active managed to sustain this (17% of all adults), one in five of all adults did manage to do so.

A fifth of adults in Scotland were at the long term maintenance stage in 2011; that is, they had not, and were not, planning to become more physically active but based on their reported activity were already active at the recommended level.

In line with findings from previous years three in ten adults in Scotland in 2011 were in pre-contemplation, that is, they reported no recent attempts or intention to increase their activity levels yet fell short of the recommended level of physical activity at the time of interview.[9] Three percent expressed a desire to be more active and a further 11% said they were planning to increase their activity levels in the next six months.

People's motivations towards increased physical activity varied little in the 2008 to 2011 period. The significant decrease in the proportion of people at the 'contemplation' stage of change over this period (from 6% in 2008 to 3% in 2010 and 2011) was not matched by a corresponding significant increase in the proportion at another stage of change.   **Table 7.9**

7.6.1   Factors associated with taking positive steps to be more physically active

Multivariate logistic regression was used to examine the independent effect of a range of socio-demographic and behavioural characteristics on an individual's motivation to be more active. The regression model explored factors independently associated with successfully taking or maintaining steps to increase physical activity levels. This was defined as those classified as being in the maintenance or long term maintenance stages of change; that is those who successfully took steps to be more physically active in the previous twelve months (maintenance) or those who didn't take or plan to take any steps to me more physically active but who already met the physical activity guidelines (long term maintenance). In the discussion that follows these groups will be referred to collectively as maintainers.

Table 7.10 presents the odds ratios of being a maintainer. In these analyses, the odds of a reference group (shown in the table with a value of 1) are compared with those of the other categories for each individual factor. In this example, an odds ratio of greater than 1 indicates that the group in question has increased odds of being a maintainer compared with the reference category, and an odds ratio of less than 1 mean they have decreased odds. By simultaneously controlling for a number of factors, the independent effect each factor has on the variable of interest can be established. The regression model was run on the combined 2008-2011 data. A description of the factors included in the model is included in an endnote to the chapter.[11]

The factors found to be associated with being a maintainer were: sex, age, household income, educational attainment, presence of other risk factors and area deprivation. NS-SEC was not significantly related to motivation to be more physically active.

Sex was significantly associated with positive motivations towards physical activity. Women had lower odds of being a maintainer than men (odds ratio of 0.76).

Age was also significantly associated with motivation to be more active. The odds of being in the maintenance/ long term maintenance stages of change declined significantly with age. Odds were lowest for those aged 75 or over (odds ratios of 0.16).

A person's educational attainment was also significantly associated with their likelihood of being a maintainer. People with no qualifications had reduced odds of being at the maintenance/ long term maintenance

stages of change relative to those educated to degree level of above (odds ratios of 0.73).

Once other factors were controlled for, household income was significantly associated with being in the maintenance/ long term maintenance stages of change. Compared with those in the highest income quintile, those in the lowest income quintiles (3rd, 4th and 5th quintiles) had decreased odds of being a maintainer (odds ratios of 0.74, 0.66 and 0.52 respectively).

The final factor significantly associated with positive motivations to physical activity was area deprivation but the nature of the relationship was unclear.   **Table 7.10**

7.7   BARRIERS TO INCREASING PHYSICAL ACTIVITY LEVELS

In order to establish what, if anything, prevents people from being more physically active, all KAM participants were asked to choose up to three reasons, from a predefined list, why they found it difficult to do more activity. Some reasons were structural or physical, such as lack of facilities, transport and money while others could be viewed as more personal or motivational barriers such as feeling overweight, preferring to do other things and not enjoying exercise.

As in previous years, in 2011, lack of time was cited as the main barrier preventing people from doing more physical activity, with four in ten adults mentioning this as a reason they found it difficult to be more active.[9] After this, the most commonly mentioned barriers were; ill health, injury or a disability (19%) and the weather (17%).

When presented with the list, a quarter of people (26%) said that none of the possible barriers prevented them being more active. As this question was asked of all KAM participants, irrespective of how active they already were, this group includes those who were already active at the recommended levels as well as those who were not. Given that there are both positive and negative explanations for choosing this response, and it is not possible to determine what else prevented those who did not meet the guidelines from doing so, this composite group is excluded from the discussion in the following paragraphs.
Table 7.11

7.7.1   Barriers to increasing physical activity by age and sex

The reported barriers faced by men and women were broadly similar. The top three reasons both genders cited were; lack of time (39% of men and 42% of women), ill health, injury and disability (17% of men and 21% of women) and the weather (15% of men and 18% of women). However, there were some notable exceptions, with women more likely than men to say that feeling too fat / overweight (7% compared with 4%); having nobody to go with (10% compared with 6%) and not enjoying exercise (10% compared with 6%) made it difficult for them to be more active.

There were also differences by age in terms of barriers faced. Unsurprisingly, those aged 75 and over were most likely to mention ill health, injury or disability (40%) and old age (24%) as reasons for not being more active. Lack of time was the barrier most commonly cited by those aged 16 to 64 (ranging from 33% to 58% for these age groups compared with 13% and 5% among the two oldest age groups respectively).

The most common barriers preventing young people (those aged 16 to 24) from being more active were lack of time (44%) and a preference to do other things (23%). While the barriers facing young men and women were largely similar, young women were more likely than men to mention lack of time as an issue (52% compared with 37%) and were also twice as likely as 16 to 24 year old men to state lack of enjoyment as something that made it difficult for them to be more active (16% compared with 8%).   **Table 7.11**

7.7.2   Barriers to increasing physical activity by area deprivation (SIMD)

The barriers people say they face in relation to increasing the amount of activity they do were significantly associated with the level of deprivation of the area in which they lived. While lack of time and ill health were the most common barriers for all deprivation groups, time was a greater issue for those in Scotland's least deprived areas than for those living in the most deprived areas (48% compared with 33%). Health problems, however, posed a greater difficulty among those living in more deprived areas (23% of those in SIMD quintiles 1 and 2 compared with 14% of those in SIMD quintile 5).

People living in Scotland's most deprived areas also appeared to face greater structural barriers than those living elsewhere. For example, those in the 20% most deprived areas in Scotland were three times more likely than those from the least deprived areas (SIMD quintile 5) to mention lack of money as an issue (12% compared with 4%), and twice as likely as them to mention lack of suitable local facilities (6% compared with 3%) and transport issues (10% compared with 5%).
                                                        Table 7.12

7.8 KNOWLEDGE, BEHAVIOUR AND MOTIVATION TOWARDS BEING MORE PHYSICALLY ACTIVE

Drawing on some of the key findings already presented, this section considers overall trends in knowledge of key messages on physical activity; behaviour, represented by actual activity levels; motivation towards being more active; and the relationship between these. Figure 7C shows knowledge, behaviour and motivation levels over the period 2008 to 2011 presenting the following measures:

- Knowledge - percentage who correctly identified the recommended amount of physical activity for adults
- Behaviour – percentage who undertook the recommended levels of physical activity
- Motivation – percentage who took steps to be more physically active in the previous twelve months (this combines the 'action' and 'maintenance' categories)

Figure 7C

Knowledge, behaviour and motivations towards physical activity, 2008-2011 combined
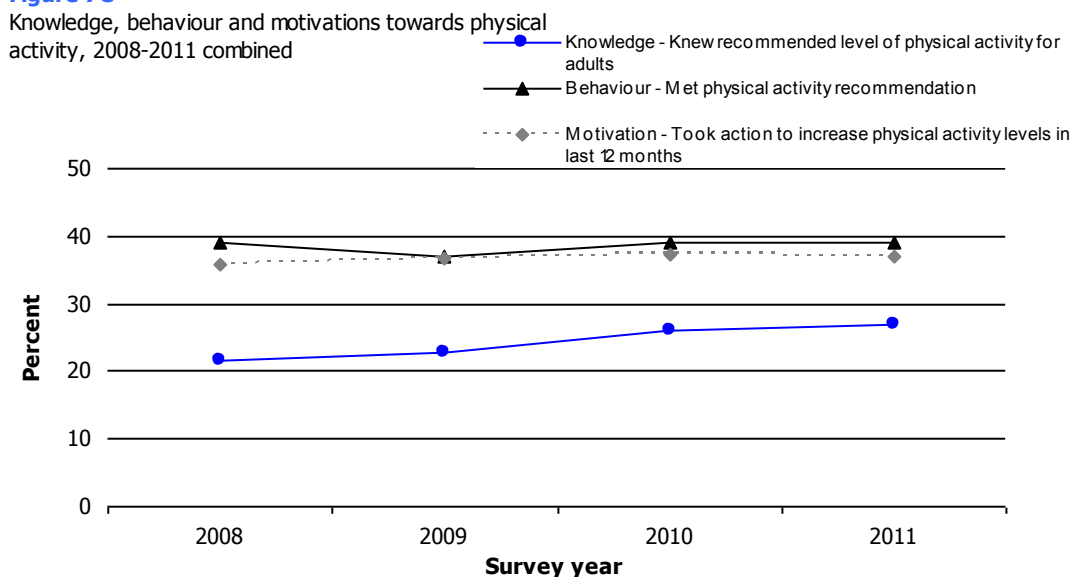
Figure 7C shows a gradual but significant increase in knowledge of the government guidelines on physical activity over the period, rising from 22% to 27%. Alongside this, the relevant measures for behaviour and motivation have remained steady over the same period. It can thus be seen that, despite increasing levels of knowledge about the recommendations on physical activity there has been no related positive change in behaviour and motivation to change behaviour.

While direct comparisons with the Health Education Population Survey (HEPS), the predecessor to the KAM module, are not possible, the former offers some useful insights into the general direction of trends in knowledge, behaviour and motivations towards physical activity between 1996 and 2007.[12] In that period, HEPS recorded significant increases on all three measures; however in the latter years of the survey, both behaviour (the proportion meeting the recommendation) and motivation (to be more active) levels flattened out. There is some correspondence here with the 2008-2011 KAM trends of an

increasingly knowledgeable public but little change in terms of actual behaviour or motivation to be more active.

7.9 DISCUSSION

This chapter has drawn on KAM data, along with data from the main SHeS interview, to explore people's knowledge of government advice on the physical activity levels required to stay healthy, and of the health benefits of physical activity. It has also examined people's perceptions of the amount of physical activity they undertake as well as their motivations to be more active.

While the 2011 SHeS reported that only four in ten adults met government guidelines on the amount of physical activity required to stay healthy, data from the KAM module showed that more than half of adults nevertheless thought that they did enough physical activity to stay healthy; this included a third of those who fell significantly short of the recommended amount of physical activity.[7] There are a number of possible explanations for this apparent mismatch between the amount of physical activity undertaken and the perception of whether people do enough to stay healthy; people could, for example, be reluctant to state that their own physical activity level is not healthy; alternatively it could demonstrate poor knowledge or a misunderstanding about how much physical activity is required to remain healthy. This latter explanation may be supported by the low levels of knowledge about the physical activity guidelines reported in the KAM module; only a quarter of adults knew the recommended amount of physical activity, with participants more likely to underestimate than overestimate the amount required to stay healthy. If knowledge is low it is likely that people are not able to judge effectively whether their own physical activity levels are sufficient to stay healthy.

Although awareness of the physical activity guidelines was low, the 2011 SHeS finding on the amount of physical activity undertaken suggests that knowledge of the recommendation is not integral to meeting the recommendation. Awareness of the recommendations on physical activity – and of the health benefits of physical activity – was, though, lower among older people and people living in more deprived areas; this is of concern as these are also the groups particularly likely to suffer from long term conditions and poor health (including a range of conditions noted in the survey such as cardiovascular disease and high blood pressure), as well as being the groups less likely to meet the guidelines on physical activity.[13]

Given that only a minority of adults reported meeting the guidelines on physical activity each year between 2008 and 2011, it is interesting to look at the reported barriers to doing so. Lack of time continued to be the most commonly reported barrier over the period, although there were variations across groups in society. For example, women were more likely to cite feeling too fat/being overweight, having nobody to go with and not enjoying exercise as barriers; older people were more likely to cite health-related issues, while additional "structural" factors (related to the availability of facilities and transport and associated costs) were most likely to be mentioned by those living in more deprived areas.

Looking at the relationship between knowledge, behaviour and motivation to change behaviour, the data from the main SHeS interview and the KAM module over the period 2008 to 2011 shows an increase in knowledge of the recommendations on physical activity, but no corresponding positive change in behaviour or motivations to change behaviour. In line with findings from the HEPS series, the picture is one of little change particularly with regards actual activity levels and motivation to be more active.

The findings reported on perceived barriers to undertaking more physical activity are thus important to consider. They perhaps complement the existing evidence relating to the scope for increasing physical activity through structural changes to the environment and transport systems; as such interventions provide the opportunity to increase physical activity as part of a daily routine and/or at low or no cost to the individual.

References and notes

1   http://www.who.int/dietphysicalactivity/pa/en/index.html

2   *Five-year review of 'Let's Make Scotland More Active' – A Strategy for Physical Activity*. Glasgow: NHS Health Scotland, 2009. www.healthscotland.com/documents/3223.aspx

3   *National Performance Framework: Changes to the National Indictor Set*, Edinburgh: Scottish Government, 2012. Available from: www.scotland.gov.uk/About/scotPerforms/NIchanges See also: www.scotlandperforms.com

4   *Preventing Overweight and Obesity in Scotland: A Route Map Towards Healthy Weight.* Edinburgh: the Scottish Government, 2010.

5   Four commonly used methods to increase physical activity NICE public health guidance 2 http://www.nice.org.uk/nicemedia/live/11373/31838/31838.pdf

6   Physical activity and the environment. NICE public health guidance 8 http://www.nice.org.uk/nicemedia/live/11917/38983/38983.pdf

7   Hill, T (2012). Chapter 6: Physical Activity in Rutherford, L., Sharp, C. and Bromley, C. *The Scottish Health Survey 2011,* Volume 1: Main Report. Edinburgh: Scottish Government.

8   Bassett, C., Gilbey, N. and Catto, S.[ed] (2008) *Health Education Population Survey: Update from 2007 survey*, NHS HealthScotland. This survey was carried between 1996 and 2007, prior to the KAM module being introduced into the Scottish Health Survey.

9   Bromley et al. *Knowledge, Attitudes and Motivations to Health – a module of the Scottish Health Survey*. NHS Health Scotland, 2010.

10   The Stages of Change model (sometimes referred to as The Transtheoretical Model) is a model of health behaviour change developed initially by DiClemente and Proschaska in 1977. Here we refer to the version of the model which contains five 'stages of change' ranging from pre-contemplation to maintenance. For further reading on the 'Stages of Change model' see DiClemente, C.C., & Prochaska, J.O. (1982). 'Self change and therapy change of smoking behavior: A comparison of processes of change in cessation and maintenance'. *Addictive Behavior*. 7 (2): 133-42.

11   The socio-demographic factors included in the model were: age, SIMD, equivalised household income, educational attainment and household NS-SEC. In addition, in order to assess the association with other behavioural characteristics explored in this report, the model also included a risk score variable measuring the presence of four of the other risk factors measured in the survey; smoking, drinking outwith the government's weekly and/or daily drinking guidelines, not meeting the five-a-day fruit and vegetable consumption target and BMI >= 25 kg/m^2. To create the risk scale each of the four behaviours was coded one if the risk factor was present and zero if not. The scale then summed the number of risks across the four categories, resulting in a five point scale from 0-4. The scale was only based on participants for whom data were available for each of the four measures; imputation was not used to handle missing cases. The final risk groups included in the model were: no other risk factors; 1-2 risk factors; 3 risk factors and 4 risk factors.

12   Bassett, C., Gilbey, N. and Catto, S.[ed] (2008) *Health Education Population Survey: Update from 2007 survey*, NHS Health Scotland. This survey was carried between 1996 and 2007, prior to the KAM module being introduced into the Scottish Health Survey.

13   Rutherford, L., Sharp, C. and Bromley, C. [eds] (2012) *The 2011 Scottish Health Survey – Volume 1: Main Report*. Edinburgh, Scottish Government. . http://www.scotland.gov.uk/Publications/2012/09/7854/downloads

Table list

Table 7.1   Self-assessment of physical activity level, 2008, 2009, 2010, 2011

Self-assessment of physical activity level	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Enough to stay healthy	54	52	52	55
95% C.I.	(51.1-56.8)	(49.4-55.1)	(48.8-54.3)	(51.8-57.3)
Not enough to stay healthy	43	45	45	43
95% C.I.	(40.3-46.0)	(41.8-47.5)	(42.6-47.8)	(39.9-45.4)
Not mobile	3	3	3	3
95% C.I.	(2.2-3.7)	(2.4-4.0)	(2.6-4.1)	(2.2-3.6)
Bases (weighted):	*1843*	*2019*	*2273*	*2265*
Bases (unweighted):	*1840*	*2017*	*2273*	*2266*

Table 7.2   Self-assessment of physical activity level, 2008-2011 combined, by reported summary physical activity

Self-assessment of activity level	Summary activity level[a]		
	Low activity	Some activity	Meets recommen-dations
	%	%	%
All adults			
Enough to stay healthy	36	46	71
95% C.I.	(34.0-38.3)	(43.9-48.9)	(68.9-73.1)
Not enough to stay healthy	55	53	29
95% C.I.	(52.4-56.9)	(50.5-55.5)	(26.9-31.1)
Not mobile	9	1	0
95% C.I.	(8.1-10.5)	(0.4-1.0)	(0.0-0.2)
Bases (weighted):	*2559*	*2489*	*3342*
Bases (unweighted):	*2957*	*2506*	*2926*

a Meets recommendations= 30 minutes or more on at least 5 days a
  week; Some activity= 30 minutes or more on 1 to 4 days a week;
  Low activity= fewer than 30 minutes of moderate or vigorous activity
  a week

Table 7.3   Knowledge of physical activity recommendations, 2008, 2009, 2010, 2011

Knowledge of physical activity recommendations (30 mins on 5+ days)	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Underestimated recommendation	51	50	46	44
95% C.I.	(48.2-54.0)	(46.7-52.8)	(42.9-48.8)	(41.3-47.0)
Knew recommendation	22	23	26	27
95% C.I.	(19.3-24.0)	(20.3-25.5)	(23.6-28.4)	(24.4-29.4)
Overestimated recommendation	11	13	13	14
95% C.I.	(9.1-12.5)	(11.2-15.1)	(11.3-15.7)	(12.5-16.3)
Didn't know recommendation	17	14	15	15
95% C.I.	(14.5-19.0)	(12.5-16.5)	(13.0-16.9)	(12.8-16.8)
Bases (weighted):	*1846*	*2021*	*2279*	*2276*
Bases (unweighted):	*1846*	*2020*	*2279*	*2275*

Table 7.4   Knowledge of physical activity recommendations, 2008-2011 combined, by age and sex

Aged 16 and over   *2008-2011 combined*

Knowledge of physical activity recommendations (30 mins on 5+ days)	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Underestimated recommendation	48	59	52	49	46	35	29	48
95% C.I.	(40.7-56.4)	(53.4-64.8)	(47.1-57.4)	(43.6-53.5)	(40.9-50.4)	(30.5-40.1)	(23.8-34.0)	(45.2-49.8)
Knew recommendation	20	20	25	26	27	21	18	23
95% C.I.	(14.3-26.9)	(15.5-24.3)	(21.0-30.5)	(22.3-31.0)	(22.5-30.9)	(16.9-24.7)	(14.1-22.9)	(21.1-24.8)
Overestimated recommendation	25	11	13	12	13	18	14	15
95% C.I.	(18.4-32.1)	(8.2-15.2)	(10.2-16.9)	(9.2-15.3)	(10.2-16.2)	(14.8-22.5)	(10.3-17.7)	(13.4-16.5)
Didn't know recommendation	7	10	9	13	15	26	40	15
95% C.I.	(4.0-12.3)	(6.9-14.3)	(6.5-12.6)	(9.9-17.2)	(12.2-18.4)	(22.1-30.3)	(34.4-45.2)	(13.1-16.3)
Women								
Underestimated recommendation	47	52	53	56	46	42	26	47
95% C.I.	(40.0-53.5)	(47.3-56.1)	(49.2-57.3)	(51.3-59.6)	(42.5-50.5)	(38.0-46.1)	(22.6-30.4)	(45.7-49.2)
Knew recommendation	25	31	31	26	28	19	16	26
95% C.I.	(19.3-30.6)	(27.3-35.7)	(27.4-35.0)	(22.7-30.2)	(24.1-31.3)	(16.2-22.6)	(12.9-19.2)	(24.4-27.5)
Overestimated recommendation	21	10	10	7	10	11	12	11
95% C.I.	(16.0-26.9)	(7.8-13.1)	(7.5-12.3)	(5.3-9.6)	(7.9-13.0)	(9.1-14.3)	(9.2-14.6)	(10.1-12.5)
Didn't know recommendation	8	7	6	11	16	27	46	15
95% C.I.	(5.2-11.8)	(5.1-9.2)	(4.3-8.5)	(8.8-13.8)	(13.2-18.8)	(23.8-31.2)	(42.0-50.6)	(14.2-16.7)
All adults								
Underestimated recommendation	48	55	53	52	46	39	27	47
95% C.I.	(42.4-52.9)	(51.8-59.0)	(49.5-56.1)	(48.9-55.4)	(42.9-49.2)	(35.6-42.1)	(24.3-30.4)	(46.0-49.0)
Knew recommendation	22	25	28	26	27	20	17	24
95% C.I.	(18.1-26.7)	(22.4-28.7)	(25.5-31.5)	(23.5-29.3)	(24.3-30.0)	(17.5-22.4)	(14.3-19.4)	(23.3-25.7)
Overestimated recommendation	23	11	11	9	11	15	12	13
95% C.I.	(18.5-27.8)	(8.7-13.0)	(9.4-13.6)	(7.8-11.5)	(9.7-13.5)	(12.5-17.1)	(10.4-14.8)	(12.0-14.0)
Didn't know recommendation	7	8	8	12	15	27	44	15
95% C.I.	(5.3-10.5)	(6.6-10.8)	(5.9-9.5)	(10.0-14.4)	(13.4-17.7)	(23.9-29.7)	(40.3-47.1)	(14.0-16.1)
Bases (weighted):								
Men	*600*	*646*	*699*	*730*	*629*	*434*	*293*	*4031*
Women	*575*	*645*	*763*	*786*	*661*	*502*	*458*	*4391*
All adults	*1175*	*1291*	*1462*	*1516*	*1291*	*936*	*751*	*8421*
Bases (unweighted):								
Men	*236*	*438*	*583*	*628*	*660*	*561*	*414*	*3520*
Women	*370*	*672*	*805*	*783*	*821*	*759*	*690*	*4900*
All adults	*606*	*1110*	*1388*	*1411*	*1481*	*1320*	*1104*	*8420*

Table 7.5   Knowledge of physical activity recommendations, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Knowledge of physical activity recommendations (30 mins on 5+ days)	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Less than recommended guidelines	50	48	45	49	46
95% C.I.	(46.5-53.2)	(44.9-51.0)	(41.8-48.3)	(45.4-51.8)	(42.8-49.0)
30 mins on 5+days	27	26	26	22	21
95% C.I.	(24.6-30.0)	(23.4-28.8)	(23.5-29.3)	(19.5-24.7)	(18.5-23.6)
More than recommended guidelines	12	12	11	14	16
95% C.I.	(10.4-15.0)	(10.1-14.2)	(9.5-13.4)	(11.4-16.2)	(13.4-17.9)
Don't know	10	14	17	16	18
95% C.I.	(8.8-12.3)	(12.1-16.1)	(15.1-19.8)	(13.8-18.0)	(15.4-20.1)
Bases (weighted):	*1636*	*1797*	*1633*	*1683*	*1672*
Bases (unweighted):	*1349*	*1787*	*1724*	*1702*	*1858*

Table 7.6   Knowledge of physical activity recommendations, 2008-2011 combined, by summary physical activity level

Aged 16 and over   *2008-2011 combined*

Knowledge of physical activity recommendations (30 mins on 5+ days)	Summary activity level[a]			Total
	Low activity	Some activity	Meets recommen-dations	
	%	%	%	%
All adults				
Less than recommended guidelines	42	50	50	47
95% C.I.	(39.2-43.9)	(47.2-52.4)	(47.9-52.8)	(46.0-49.0)
30 mins on 5+days	21	25	27	24
95% C.I.	(19.1-23.0)	(23.3-27.7)	(24.4-28.7)	(23.3-25.8)
More than recommended guidelines	13	13	13	13
95% C.I.	(11.3-14.4)	(11.2-14.8)	(11.6-14.9)	(12.0-14.0)
Don't know	25	12	10	15
95% C.I.	(22.9-26.8)	(10.3-13.4)	(8.7-11.5)	(14.1-16.1)
Bases (weighted):	*2571*	*2498*	*3343*	*8421*
Bases (unweighted):	*2972*	*2512*	*2929*	*8420*

a Meets recommendations= 30 minutes or more on at least 5 days a week; Some activity= 30 minutes or more on 1 to 4 days a week; Low activity= fewer than 30 minutes of moderate or vigorous activity a week

Table 7.7   Knowledge of health conditions less likely among regularly active people, 2008-2011 combined, by age and sex

Aged 16 and over   *2008-2011 combined*

Health conditions	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Heart disease	78	92	89	88	90	85	77	86
95% C.I.	(70.0-84.1)	(89.1-94.2)	(85.4-91.7)	(84.6-91.0)	(86.7-91.9)	(80.8-87.8)	(71.4-81.1)	(84.8-87.9)
Some cancers	23	34	37	26	28	20	21	28
95% C.I.	(17.4-30.7)	(28.9-39.9)	(32.2-41.7)	(21.8-30.2)	(24.4-32.9)	(16.1-24.0)	(16.8-26.3)	(26.2-30.2)
Diabetes	39	52	50	43	44	29	31	43
95% C.I.	(31.7-47.0)	(46.2-58.3)	(44.8-55.0)	(38.1-47.9)	(39.5-48.7)	(24.7-33.5)	(25.7-36.4)	(40.7-45.2)
High blood pressure	66	77	81	68	67	57	52	69
95% C.I.	(58.0-73.3)	(71.4-81.4)	(76.2-84.4)	(63.2-72.6)	(63.0-71.5)	(51.5-61.6)	(46.0-57.6)	(66.8-71.0)
Overweight and obesity	88	93	91	89	87	82	79	88
95% C.I.	(81.2-92.7)	(89.7-95.3)	(87.4-94.2)	(84.7-91.5)	(84.3-90.0)	(78.2-85.6)	(73.7-82.9)	(86.6-89.6)
Mental health problems	20	43	46	37	35	27	27	35
95% C.I.	(14.6-26.9)	(37.1-48.6)	(41.2-51.1)	(32.1-41.5)	(30.4-39.3)	(23.0-32.2)	(22.1-32.4)	(32.8-37.0)
Brittle bones (Osteoporosis)	23	26	27	22	19	14	20	22
95% C.I.	(16.4-30.1)	(21.1-31.1)	(23.1-32.2)	(18.5-26.4)	(15.3-22.3)	(11.1-18.2)	(15.6-24.8)	(20.4-24.0)
Injuries and accident	19	25	25	22	20	17	19	21
95% C.I.	(13.2-25.6)	(20.4-30.1)	(21.5-29.7)	(17.9-25.9)	(16.5-23.6)	(13.6-21.0)	(14.9-23.8)	(19.7-23.2)
Stomach Ulcer	19	24	22	16	17	11	16	18
95% C.I.	(13.5-26.0)	(19.4-29.4)	(18.0-25.6)	(13.2-20.4)	(13.6-20.4)	(8.5-14.4)	(12.2-20.6)	(16.8-20.2)
All of these	10	11	11	8	8	6	10	9
95% C.I.	(6.3-16.0)	(8.0-15.5)	(8.2-13.7)	(5.7-10.7)	(6.0-10.8)	(4.5-9.2)	(6.7-13.9)	(8.0-10.6)
None of these	1	0	0	0	1	1	1	1
95% C.I.	(0.3-6.1)	(0.0-0.8)	(0.1-2.0)	(0.1-1.3)	(0.2-1.6)	(0.5-3.6)	(0.5-3.5)	(0.4-1.2)
Other	-	-	0	0	1	0	1	0
95% C.I.	-	-	(0.0-0.8)	(0.0-1.6)	(0.3-2.3)	(0.0-1.0)	(0.4-3.9)	(0.2-0.6)

Continued…

Table 7.7 *- Continued*

Health conditions	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Women								
Heart disease	75	87	86	88	80	76	69	81
95% C.I.	(68.5-79.9)	(83.5-89.5)	(83.5-89.0)	(84.6-90.1)	(77.0-83.5)	(72.8-79.6)	(64.9-73.2)	(79.9-82.8)
Some cancers	28	38	41	36	26	21	13	31
95% C.I.	(22.9-34.3)	(33.6-42.4)	(37.4-45.7)	(32.0-40.2)	(23.0-30.1)	(18.1-25.0)	(10.6-16.7)	(29.2-32.7)
Diabetes	44	51	51	49	37	30	24	43
95% C.I.	(37.7-51.0)	(46.2-55.5)	(46.5-54.8)	(45.1-53.5)	(33.3-41.1)	(26.4-34.0)	(20.5-28.1)	(40.8-44.5)
High blood pressure	64	75	73	69	60	53	42	64
95% C.I.	(57.7-70.2)	(71.5-78.9)	(69.0-76.5)	(65.1-73.1)	(55.9-64.0)	(48.8-57.2)	(38.1-46.9)	(62.6-66.0)
Overweight and obesity	91	93	89	90	86	85	79	88
95% C.I.	(87.3-94.1)	(90.7-95.1)	(86.1-91.6)	(87.1-92.3)	(82.9-88.6)	(81.8-87.4)	(75.4-82.8)	(87.1-89.4)
Mental health problems	33	54	54	49	41	27	24	43
95% C.I.	(27.2-39.9)	(49.2-58.2)	(50.0-58.3)	(45.1-53.5)	(37.4-45.5)	(23.9-31.0)	(20.1-27.7)	(40.7-44.4)
Brittle bones (Osteoporosis)	28	40	38	40	36	32	24	35
95% C.I.	(23.0-34.4)	(35.3-44.3)	(34.4-42.6)	(35.5-43.9)	(31.8-39.8)	(28.4-36.2)	(20.1-27.6)	(33.2-36.7)
Injuries and accident	19	26	28	24	16	13	14	21
95% C.I.	(13.9-24.7)	(22.3-30.3)	(25.0-32.3)	(20.7-27.8)	(12.9-18.7)	(10.6-16.0)	(11.0-17.3)	(19.4-22.5)
Stomach Ulcer	21	26	26	22	15	10	9	20
95% C.I.	(16.7-27.2)	(22.3-30.3)	(23.0-30.0)	(18.4-25.3)	(12.4-18.3)	(8.0-12.9)	(6.4-11.6)	(18.1-21.1)
All of these	13	17	17	12	8	6	5	12
95% C.I.	(9.4-18.6)	(14.2-21.2)	(14.1-20.1)	(9.4-14.7)	(5.9-10.0)	(4.6-8.6)	(3.6-7.9)	(10.7-13.2)
None of these	1	1	1	1	1	1	2	1
95% C.I.	(0.2-1.7)	(0.2-1.7)	(0.2-1.3)	(0.6-2.3)	(0.5-2.3)	(0.7-2.6)	(0.8-3.3)	(0.7-1.3)
Other	0	0	-	0	-	0	-	0
95% C.I.	(0.0-2.1)	(0.0-1.6)	-	(0.0-0.9)	-	(0.1-1.3)	-	(0.1-0.3)

Table 7.7 *- Continued*

Health conditions	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
Heart disease	76	89	88	88	85	80	72	84
95% C.I.	(71.3-80.6)	(87.2-91.3)	(85.4-89.6)	(85.6-89.8)	(82.7-86.9)	(77.7-82.5)	(68.8-75.2)	(82.7-84.9)
Some cancers	26	36	39	31	27	21	16	30
95% C.I.	(21.6-30.4)	(32.5-39.6)	(36.1-42.5)	(28.2-34.2)	(24.7-30.3)	(18.1-23.4)	(13.9-19.4)	(28.3-31.0)
Diabetes	42	52	50	46	40	30	27	43
95% C.I.	(36.6-46.8)	(47.6-55.4)	(47.0-53.6)	(43.0-49.5)	(37.5-43.5)	(26.7-32.5)	(23.7-30.1)	(41.3-44.2)
High blood pressure	65	76	77	69	64	55	46	67
95% C.I.	(59.9-70.0)	(72.8-79.1)	(73.7-79.2)	(65.5-71.8)	(60.6-66.5)	(51.3-58.0)	(42.5-49.9)	(65.1-67.9)
Overweight and obesity	90	93	90	89	87	84	79	88
95% C.I.	(85.8-92.6)	(91.1-94.7)	(87.9-92.2)	(87.0-91.3)	(84.5-88.6)	(81.2-85.8)	(76.0-81.9)	(87.3-89.1)
Mental health problems	27	48	50	43	38	27	25	39
95% C.I.	(22.3-31.2)	(44.5-51.9)	(47.0-53.6)	(40.1-46.5)	(35.1-41.2)	(24.6-30.3)	(22.0-28.3)	(37.4-40.3)
Brittle bones (Osteoporosis)	25	33	33	31	27	24	22	29
95% C.I.	(21.2-30.1)	(29.4-36.2)	(30.1-36.3)	(28.4-34.3)	(24.7-30.1)	(21.2-26.8)	(19.3-25.2)	(27.5-30.1)
Injuries and accident	19	25	27	23	18	15	16	21
95% C.I.	(14.9-23.2)	(22.4-28.8)	(24.3-29.9)	(20.3-25.7)	(15.5-20.0)	(12.7-17.3)	(13.4-18.8)	(20.0-22.4)
Stomach Ulcer	20	25	24	19	16	11	12	19
95% C.I.	(16.5-24.6)	(22.0-28.4)	(21.6-26.8)	(16.8-21.8)	(13.8-18.3)	(8.9-12.7)	(9.5-14.2)	(17.9-20.2)
All of these	12	14	14	10	8	6	7	11
95% C.I.	(8.8-15.5)	(11.8-17.1)	(11.9-16.1)	(8.2-11.9)	(6.4-9.6)	(5.0-8.1)	(5.4-9.3)	(9.7-11.6)
None of these	1	0	0	1	1	1	1	1
95% C.I.	(0.3-3.1)	(0.1-0.9)	(0.2-1.1)	(0.4-1.4)	(0.4-1.6)	(0.8-2.4)	(0.8-2.6)	(0.6-1.1)
Other	0	0	0	0	0	0	1	0
95% C.I.	(0.0-1.1)	(0.0-0.8)	(0.0-0.4)	(0.0-0.7)	(0.2-1.1)	(0.1-0.7)	(0.2-1.6)	(0.1-0.4)
Bases (weighted):								
Men	595	644	696	722	623	419	277	3976
Women	572	638	757	782	654	488	415	4306
All adults	1167	1282	1453	1504	1277	908	692	8282
Bases (unweighted):								
Men	233	436	576	620	650	536	384	3435
Women	364	661	797	777	810	736	615	4760
All adults	597	1097	1373	1397	1460	1272	999	8195

Table 7.8   Knowledge of health conditions less likely among regularly active people, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Health conditions	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Heart disease	85	85	82	83	84
95% C.I.	(82.7-87.9)	(82.7-87.1)	(79.5-84.4)	(80.3-85.3)	(81.3-85.6)
Some cancers	35	31	31	28	23
95% C.I.	(31.6-38.3)	(28.5-34.1)	(27.9-34.0)	(24.7-30.6)	(21.0-26.2)
Diabetes	49	44	42	40	38
95% C.I.	(45.3-51.9)	(41.0-47.3)	(39.1-45.7)	(37.3-43.6)	(35.5-41.3)
High blood pressure	70	68	66	65	63
95% C.I.	(66.7-73.1)	(65.3-70.9)	(63.4-69.1)	(61.7-68.0)	(60.1-66.2)
Overweight and obesity	91	90	88	87	85
95% C.I.	(88.9-92.9)	(88.6-92.1)	(85.7-89.7)	(84.6-88.8)	(82.4-86.9)
Mental health problems	46	42	38	36	31
95% C.I.	(42.8-49.6)	(39.5-45.5)	(35.2-41.6)	(33.0-39.1)	(28.3-34.0)
Brittle bones (Osteoporosis)	35	31	28	25	24
95% C.I.	(31.8-38.4)	(28.6-34.1)	(25.4-31.4)	(22.7-28.2)	(21.5-26.6)
Injuries and accident	24	22	23	18	19
95% C.I.	(21.0-26.8)	(19.8-24.7)	(19.9-25.5)	(16.1-21.0)	(16.5-21.2)
Stomach Ulcer	20	22	19	18	16
95% C.I.	(17.8-23.4)	(19.6-24.7)	(16.3-21.7)	(15.3-20.2)	(14.0-18.1)
All of these	11	11	12	10	9
95% C.I.	(9.4-13.7)	(9.1-12.8)	(9.8-14.5)	(8.3-12.0)	(7.4-10.7)
None of these	1	0	1	1	1
95% C.I.	(0.2-2.3)	(0.2-1.0)	(0.5-1.6)	(0.9-2.1)	(0.5-1.3)
Other	0	0	0	0	0
95% C.I.	(0.0-0.7)	(0.2-1.1)	(0.0-0.7)	(0.0-0.3)	(0.0-0.5)
Bases (weighted):	*1615*	*1771*	*1605*	*1657*	*1634*
Bases (unweighted):	*1326*	*1746*	*1666*	*1660*	*1797*

Table 7.9   Motivations to be more physically active, 2008, 2009, 2010, 2011

Aged 16 and over   *2008, 2009, 2010, 2011*

Motivations to be more physically active	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Pre-contemplation	29	28	29	30
95% C.I.	(26.6-31.7)	(25.4-30.3)	(26.4-31.2)	(27.4-32.4)
Contemplation	6	5	3	3
95% C.I.	(4.6-7.2)	(4.0-6.3)	(2.6-4.5)	(2.4-4.0)
Preparation	9	14	11	11
95% C.I.	(7.9-11.2)	(11.5-15.8)	(9.4-13.0)	(9.7-13.4)
Action	16	16	15	17
95% C.I.	(13.7-17.9)	(13.7-18.3)	(13.3-17.3)	(15.0-19.4)
Maintenance	20	21	22	20
95% C.I.	(18.0-22.7)	(18.6-23.0)	(19.6-24.6)	(17.6-22.4)
Long-term maintenance	20	17	20	19
95% C.I.	(17.6-22.1)	(15.0-19.3)	(17.6-21.8)	(16.6-20.9)
Bases (weighted):	*1846*	*2022*	*2279*	*2276*
Bases (unweighted):	*1846*	*2022*	*2279*	*2276*

Table 7.10 Estimated odds ratios for being in maintenance/long-term maintenance stage of change, 2008-2011 combined, by associated risk factors[a]

Independent variables

	Base (weighted) 6118	Odds ratio	95% CI[b]
Sex		(p=<0.001)	
Men	2681	1	
Women	3437	0.76	0.66, 0.88
Age		(p=<0.001)	
16-34	1160	1	
35-54	2012	0.74	0.61, 0.90
55-74	2152	0.43	0.35, 0.52
75+	794	0.16	0.12, 0.21
Equivalised household income quintile		(p=<0.001)	
1st (highest)	1105	1	
2nd	1088	0.98	0.78, 1.22
3rd	1089	0.74	0.59, 0.94
4th	1081	0.66	0.51, 0.86
5th (lowest)	1129	0.52	0.40, 0.67
Not categorised	626	0.68	0.51, 0.90
Highest education qualification		(p=0.004)	
Degree or higher	1549	1	
HNC/D or equivalent	559	1.11	0.86, 1.46
Higher grade or equivalent	777	0.80	0.63, 1.02
Standard grade or equivalent	1056	0.82	0.65, 1.04
Other qualifications	582	0.64	0.48, 0.85
No qualifications	1595	0.73	0.58, 0.92
Scottish Index of Multiple Deprivation quintile		(p=0.044)	
5th (least deprived)	985	1	
4th	1319	1.03	0.83, 1.29
3rd	1270	1.14	0.91, 1.43
2nd	1212	1.05	0.83, 1.32
1st (most deprived)	1332	0.82	0.65, 1.04
Number of other risk factors[c]		(p=<0.001)	
0-1 risks	1584	1	
2 risks	2571	0.77	0.65, 0.93
3 risks	1610	0.67	0.55, 0.82
4 risks	353	0.63	0.46, 0.87

a Factors included in the model were: sex, age, SIMD, equivalised household income, educational attainment, household NS-SEC and number of other risk factors present
b Confidence Interval
c The risk factors included in the count were smoking, drinking outwith government's daily and/or weekly guidelines, consuming fewer than five portions of fruit or vegetables per day, and BMI >= 25kg/m^2

Table 7.11 Barriers to physical activity, 2008-2011 combined, by age and sex

Barriers to physical activity	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Lack of time	37	57	53	45	33	12	7	39
95% C.I.	(29.5-44.8)	(51.0-62.6)	(47.6-57.5)	(40.2-50.3)	(28.3-37.5)	(8.9-15.2)	(4.3-10.8)	(36.6-41.0)
Prefer to do other things	22	18	9	9	6	8	5	12
95% C.I.	(16.3-30.2)	(13.4-23.3)	(6.9-12.3)	(6.8-12.8)	(4.6-8.8)	(5.3-10.9)	(2.8-7.5)	(10.2-13.4)
Ill health, injury or disability	6	8	11	18	26	31	35	17
95% C.I.	(3.6-11.5)	(5.6-11.4)	(8.9-14.6)	(14.3-21.3)	(22.1-30.2)	(26.1-35.4)	(29.8-40.3)	(15.8-18.8)
I feel too fat/overweight	5	4	3	3	3	3	2	4
95% C.I.	(2.6-10.5)	(1.9-7.5)	(2.0-6.1)	(2.0-4.8)	(2.2-5.3)	(1.9-5.2)	(1.2-4.7)	(2.8-4.6)
I do not enjoy exercise	8	8	6	5	4	4	3	6
95% C.I.	(4.6-13.4)	(4.9-12.7)	(4.1-8.7)	(3.3-7.6)	(2.8-6.0)	(2.2-5.9)	(1.6-5.1)	(4.6-6.9)
Lack of suitable local facilities	9	6	4	4	4	2	1	4
95% C.I.	(5.1-14.0)	(3.3-9.6)	(2.6-6.3)	(2.1-5.8)	(2.8-6.9)	(1.1-3.5)	(0.2-3.3)	(3.6-5.6)
I am too old	2	0	0	1	4	8	22	4
95% C.I.	(0.5-5.7)	(0.0-0.8)	(0.1-0.8)	(0.7-2.9)	(2.4-5.8)	(5.3-10.7)	(17.6-26.8)	(3.0-4.3)
Lack of money	14	11	8	7	3	1	1	7
95% C.I.	(9.0-21.0)	(7.9-16.2)	(5.6-11.7)	(4.5-9.4)	(1.5-4.1)	(0.2-1.9)	(0.3-3.7)	(5.8-8.5)
I have nobody to go with	14	7	6	4	5	3	3	6
95% C.I.	(8.8-20.6)	(4.6-10.3)	(4.2-8.9)	(2.7-5.6)	(3.4-7.3)	(2.1-5.1)	(1.8-5.8)	(5.2-7.6)
The weather puts me off	12	19	15	13	17	15	14	15
95% C.I.	(7.5-17.8)	(15.3-24.2)	(11.5-18.5)	(9.9-16.9)	(13.9-20.9)	(11.6-18.5)	(10.8-18.4)	(13.6-16.6)
Nothing prevents me	28	20	28	30	31	44	37	30
95% C.I.	(21.1-35.2)	(15.3-24.6)	(23.5-32.8)	(25.7-35.5)	(27.0-35.5)	(38.8-48.6)	(32.0-43.3)	(27.9-31.9)
Lack of transport / traffic or road safety / lack of skills or confidence / other	6	10	10	6	5	3	3	7
95% C.I.	(3.5-10.7)	(6.4-13.9)	(7.1-15.0)	(4.7-8.8)	(3.4-7.6)	(1.4-5.0)	(1.9-6.2)	(5.6-8.0)

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Table 7.11 *- Continued*

Barriers to physical activity	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Women								
Lack of time	52	59	59	49	34	14	3	42
95% C.I.	(45.8-58.5)	(54.4-63.4)	(54.6-63.0)	(44.7-52.8)	(30.1-38.0)	(11.4-17.5)	(2.0-5.6)	(39.8-43.4)
Prefer to do other things	23	10	8	10	7	4	4	10
95% C.I.	(18.0-29.5)	(7.9-13.4)	(5.8-10.2)	(7.5-12.7)	(5.4-9.7)	(3.0-6.1)	(2.4-5.8)	(8.6-10.8)
Ill health, injury or disability	7	10	14	18	29	32	44	21
95% C.I.	(4.2-12.2)	(7.4-12.9)	(11.3-16.6)	(15.2-21.2)	(25.6-32.9)	(28.0-35.5)	(39.4-47.9)	(19.2-21.9)
I feel too fat/overweight	5	7	9	9	7	6	4	7
95% C.I.	(2.8-7.6)	(5.0-9.1)	(6.9-11.6)	(6.8-11.3)	(5.5-9.8)	(4.2-8.3)	(2.4-6.2)	(6.1-7.8)
I do not enjoy exercise	16	12	9	11	8	5	3	10
95% C.I.	(11.5-22.2)	(9.3-15.1)	(7.2-12.2)	(9.0-14.4)	(5.8-10.1)	(3.4-6.9)	(1.8-4.9)	(8.5-10.8)
Lack of suitable local facilities	6	8	8	3	4	4	2	5
95% C.I.	(3.9-9.6)	(5.6-10.0)	(6.1-10.5)	(1.7-4.5)	(2.8-5.8)	(2.5-5.6)	(1.3-4.1)	(4.4-5.9)
I am too old	-	0	0	1	2	9	26	4
95% C.I.	(0.0-0.0)	(0.1-1.6)	(0.1-1.5)	(0.7-2.7)	(1.3-3.4)	(7.0-11.7)	(22.1-29.4)	(3.8-5.0)
Lack of money	13	12	10	5	3	2	1	7
95% C.I.	(9.5-16.4)	(9.4-15.2)	(8.3-13.1)	(3.8-7.6)	(1.9-4.2)	(1.0-3.3)	(0.5-2.1)	(6.1-7.8)
I have nobody to go with	19	11	11	7	8	8	5	10
95% C.I.	(14.3-24.9)	(8.4-14.1)	(8.8-13.9)	(5.2-9.3)	(6.0-10.3)	(5.9-10.0)	(3.3-7.0)	(8.8-11.0)
The weather puts me off	21	20	18	20	19	14	13	18
95% C.I.	(15.9-26.6)	(16.8-24.1)	(14.9-21.3)	(16.4-23.4)	(16.4-22.8)	(11.6-17.0)	(10.0-15.7)	(16.8-19.6)
Nothing prevents me	14	16	16	22	25	36	28	22
95% C.I.	(10.3-18.7)	(12.8-19.2)	(13.7-19.7)	(18.5-25.2)	(21.4-28.3)	(32.6-40.3)	(24.0-31.8)	(20.3-23.1)
Lack of transport / traffic or road safety / lack of skills or confidence / other	12	13	9	9	9	7	5	9
95% C.I.	(8.1-16.4)	(10.8-16.8)	(6.8-11.3)	(7.4-12.2)	(7.1-11.8)	(4.9-8.9)	(3.6-6.9)	(8.4-10.5)

Continued…

Table 7.11   - Continued

Barriers to physical activity	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
Lack of time	44	58	56	47	33	13	5	40
95% C.I.	(39.3-49.5)	(54.2-61.6)	(52.6-59.1)	(43.9-50.3)	(30.3-36.5)	(11.0-15.3)	(3.3-6.7)	(38.8-41.7)
Prefer to do other things	23	14	8	10	7	6	4	11
95% C.I.	(18.6-27.7)	(11.4-17.3)	(6.9-10.3)	(7.8-11.8)	(5.5-8.5)	(4.5-7.5)	(2.9-5.7)	(9.7-11.6)
Ill health, injury or disability	7	9	13	18	28	31	40	19
95% C.I.	(4.6-10.1)	(7.2-11.1)	(10.9-14.7)	(15.6-20.2)	(24.9-30.4)	(28.2-34.2)	(36.9-43.5)	(18.0-20.0)
I feel too fat/overweight	5	5	6	6	5	5	3	5
95% C.I.	(3.1-7.8)	(3.8-7.2)	(5.0-8.1)	(4.8-7.6)	(4.3-6.9)	(3.5-6.1)	(2.2-4.8)	(4.7-6.0)
I do not enjoy exercise	12	10	8	8	6	4	3	8
95% C.I.	(8.9-15.8)	(7.8-12.6)	(6.2-9.8)	(6.8-10.3)	(4.7-7.4)	(3.2-5.7)	(2.0-4.3)	(6.9-8.5)
Lack of suitable local facilities	7	7	6	3	4	3	2	5
95% C.I.	(5.2-10.4)	(5.0-8.7)	(4.9-7.7)	(2.2-4.4)	(3.1-5.7)	(2.0-4.1)	(1.0-2.9)	(4.2-5.4)
I am too old	1	0	0	1	3	8	24	4
95% C.I.	(0.3-3.0)	(0.1-0.8)	(0.2-0.9)	(0.9-2.3)	(2.1-4.0)	(6.7-10.4)	(21.3-27.2)	(3.6-4.5)
Lack of money	13	12	9	6	3	1	1	7
95% C.I.	(10.1-17.1)	(9.4-14.4)	(7.6-11.4)	(4.6-7.7)	(1.9-3.6)	(0.8-2.1)	(0.5-2.0)	(6.2-7.8)
I have nobody to go with	16	9	9	5	6	6	4	8
95% C.I.	(12.8-20.6)	(7.1-11.1)	(7.1-10.6)	(4.4-6.9)	(5.2-8.0)	(4.5-7.1)	(3.0-5.8)	(7.4-9.0)
The weather puts me off	16	20	16	16	18	14	13	17
95% C.I.	(12.8-20.3)	(17.2-22.7)	(14.1-18.9)	(14.2-19.0)	(16.0-20.8)	(12.3-16.7)	(11.1-15.7)	(15.6-17.8)
Nothing prevents me	21	18	22	26	28	40	32	26
95% C.I.	(17.1-25.4)	(15.0-20.6)	(19.3-24.9)	(23.1-28.9)	(25.1-30.7)	(36.6-43.0)	(28.3-35.0)	(24.3-26.8)
Lack of transport / traffic or road safety / lack of skills or confidence / other	9	12	10	8	7	5	4	8
95% C.I.	(6.4-11.9)	(9.3-14.1)	(7.6-12.1)	(6.6-9.8)	(5.8-8.9)	(3.6-6.3)	(3.3-5.8)	(7.4-8.9)
Bases (weighted):								
Men	*600*	*646*	*697*	*730*	*629*	*434*	*292*	*4026*
Women	*575*	*645*	*763*	*786*	*662*	*502*	*454*	*4388*
All adults	*1175*	*1291*	*1460*	*1516*	*1291*	*936*	*746*	*8414*
Bases (unweighted):								
Men	*236*	*438*	*581*	*627*	*659*	*561*	*412*	*3514*
Women	*370*	*671*	*805*	*783*	*821*	*758*	*684*	*4892*
All adults	*606*	*1109*	*1386*	*1410*	*1480*	*1319*	*1096*	*8406*

Table 7.12   Barriers to physical activity, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Barriers to physical activity	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Lack of time	48	42	39	39	33
95% C.I.	(44.3-51.1)	(38.7-44.8)	(36.3-42.5)	(36.0-42.2)	(30.6-36.4)
Prefer to do other things	11	11	11	10	10
95% C.I.	(9.0-13.3)	(9.3-13.5)	(9.0-13.3)	(7.8-12.0)	(8.1-12.6)
Ill health, injury or disability	14	16	19	23	23
95% C.I.	(12.0-16.3)	(14.6-18.6)	(17.0-21.4)	(20.5-25.4)	(20.4-24.8)
I feel too fat/overweight	4	4	5	7	7
95% C.I.	(2.5-5.0)	(3.2-5.5)	(3.5-5.9)	(5.6-8.9)	(6.1-9.1)
I do not enjoy exercise	9	6	7	8	8
95% C.I.	(7.4-11.5)	(5.1-8.2)	(5.4-8.8)	(6.1-9.6)	(6.5-10.4)
Lack of suitable local facilities	3	5	5	4	6
95% C.I.	(2.3-4.8)	(4.0-6.8)	(3.5-5.9)	(3.4-5.9)	(4.8-8.2)
I am too old	4	4	4	4	5
95% C.I.	(2.8-4.7)	(2.8-4.5)	(3.4-5.3)	(3.0-4.8)	(3.7-6.1)
Lack of money	4	5	5	8	12
95% C.I.	(2.9-6.6)	(3.7-6.7)	(4.1-6.8)	(6.4-10.0)	(10.3-14.6)
I have nobody to go with	6	10	7	8	10
95% C.I.	(4.8-8.2)	(8.0-12.0)	(5.3-8.5)	(6.2-9.9)	(8.1-11.8)
The weather puts me off	18	17	17	16	15
95% C.I.	(15.6-20.8)	(14.5-19.0)	(14.9-19.8)	(14.2-19.0)	(13.0-17.2)
Nothing prevents me	27	27	26	24	24
95% C.I.	(24.0-29.7)	(24.8-30.1)	(23.7-29.3)	(21.1-26.5)	(21.2-26.1)
Lack of transport / traffic or road safety / lack of skills or confidence / other	5	8	9	9	10
95% C.I.	(4.0-6.6)	(6.5-9.8)	(7.1-10.6)	(7.3-11.1)	(7.9-12.0)
Bases (weighted):	*1637*	*1796*	*1632*	*1682*	*1667*
Bases (unweighted):	*1350*	*1784*	*1720*	*1700*	*1852*

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Weight

Chapter 8

8 WEIGHT

Carl Cullinane

SUMMARY

- Although 64.3% of adults were overweight or obese; only 53.1% perceived themselves to be overweight or obese.
- Adults with a healthy weight were most likely to give an accurate assessment of their weight, with three quarters (77%) describing their weight as 'about right'.
- Women were significantly more likely than men to assess their weight accurately (62% correctly identified the weight category they fell into compared with 49% of men).
- The majority of parents (83%) in the 2008 to 2011 period assessed the weight of their children to be 'about right', although in 2011 only two thirds of children had a healthy BMI.
- Three-quarters of parents of overweight or obese children incorrectly judged the weight of their children to be 'about right'.
- One in seven adults correctly identified overweight or obesity as a risk factor in developing a range of health conditions.
- Awareness of conditions linked to obesity ranged from one in four recognising gallbladder disease as being weight-related to nine out of ten recognising weight as a risk factor in developing heart disease and high blood pressure.
- Awareness of health conditions associated with overweight and obesity varied by age and area deprivation, with lower levels of awareness recorded amongst older people and those living in areas of greatest deprivation.
- In 2011, a quarter of adults (26%) had taken no steps to control their weight, despite having an unhealthy BMI.
- A third of adults (31%) had taken some action to control their weight in the previous 12 months, with half of this group maintaining the action taken.
- Between 2008 and 2011, there was no significant change in knowledge, behaviour and motivation to change behaviour in relation to weight.

8.1 INTRODUCTION

Overweight and obese people are at increased risk of developing a range of serious health conditions including type II diabetes, hypertension, cardiovascular disease, osteoarthritis and cancer.[1] Obesity places a great burden on an individual and their family but its effect is felt far wider than this. Scotland has one of the highest levels of obesity among OECD countries.[2] Estimates suggest that in 2007/8, obesity cost Scottish society in excess of £457 million and the NHS directly over £175 million.[2]

Tackling obesity levels in Scotland is a key issue in its own right, as set out in the Scottish Government's 2010 strategy 'Preventing Overweight and Obesity in Scotland: a Route Map Towards Healthy Weight'. It also cuts across a range of strategic government objectives and activities. It is, for example, seen as key to achieving the Scottish Government's National Performance Framework (NPF) purpose target of 'increasing healthy life expectancy.' There is also a national

indicator on the NPF aimed at 'increasing the proportion of healthy weight children.'[3]

At the heart of the Route Map lies the long term goal for the majority of Scotland's adult population to be in the 'normal' weight range throughout life.[4] The Route Map notes the complexity of the challenge faced and sets out a whole-population cross-cutting approach to tackling obesity. This approach emphasises prevention, noting the need to 'reshape our living environment from one that promotes weight gain to one that supports healthy choices.'

At a simple level, however, achieving sustained weight loss requires a reduction in calorie intake (through an improved diet and reduced alcohol consumption) as well as an increase in physical activity. Therefore, the approach set out in the Route Map also includes continued action to encourage individual behaviour change in these areas. While some health communication campaigns have targeted diet or exercise separately, initiatives such as the 'Take Life On' national social marketing campaign have taken an integrated approach to the issue by encouraging healthy eating, moderate drinking and increased physical activity. Thus, while the provision of health information to encourage behaviour change will not be sufficient on its own, it still has a role in helping to support people to make healthy choices.

This chapter uses data from the Knowledge Attitudes and Motivations to Health (KAM) module of the Scottish Health Survey (SHeS) to explore people's subjective assessments of their own weight and compares this with actual Body Mass Index (BMI) status (based on the objective height and weight measures collected in the main SHeS interview). Parents' views of their children's weight are also examined, again comparing this with actual child BMI data collected in the SHeS interview. In addition, public awareness of the impact of obesity on health and people's motivations to keep their weight under control are explored. The chapter then presents trend data for knowledge, behaviour and motivations in relation to weight control, and explores the links between these. Knowledge, attitudes and motivations in relation to the components which together contribute to achieving healthy weight – i.e. diet, alcohol consumption and physical activity – are explored in detail in separate chapters in this report (see Chapters 4, 6 and 7).

8.2   OVERWEIGHT AND OBESITY PREVALENCE IN SCOTLAND 2011

The body mass index (BMI), a calculation based on height and weight, is commonly used to measure whether a person is of a 'healthy weight'. An adult BMI of between 18.5kg/m^2 and 25kg/m^2 indicates a healthy weight, a BMI between 25 and 30 indicates overweight and a BMI greater than 30 indicates obesity. According to BMI measurements from the 2011 SHeS, around a quarter (27.7%) of adults (aged 16 and over) in Scotland were obese (27.7% of men and 27.6% of women) and roughly two-thirds (64.3%) were overweight or obese.[5] A minority of adults in 2011, around a third, had a weight within healthy range.

Adult body mass index, SHeS 2011

All adults with valid height and weight measurements	%
Underweight (BMI <18.5 kg/m^2)	1.9
Healthy weight (BMI 18.5–25 kg/m^2)	33.8
Overweight (BMI 25–30 kg/m^2)	36.7
Obese (BMI 30–40 kg/m^2)	24.7
Very obese (BMI >40 kg/m^2)	2.9

8.3 HOW DO ADULTS VIEW THEIR OWN WEIGHT?

To understand how people perceive their own weight, participants in the KAM module were asked to assess their weight by describing themselves as either underweight, about right, overweight or very overweight.[6] Previous analysis of the KAM data showed that around four in ten people view their weight as about right, a similar proportion see themselves as overweight and fewer than one in ten see themselves as very overweight.[7] Results from the 2011 KAM module showed a similar pattern, as shown below.

Self-assessment of own weight, all adults, 2008-2011 combined

Adults aged 16+	%
Underweight	5.5
About right	41.5
Overweight	45.3
Very overweight	7.8

8.3.1 Accuracy of self-assessment of weight

One of the advantages of including the KAM module within the SHeS interview is that it allows the accuracy of people's perceptions of their weight to be assessed against the objective measurements collected by the interviewer during the interview. In addition to collecting height and weight, BMI was also calculated for all participants with valid height and weight measurements. KAM module participants were not asked what they thought their BMI was but instead were asked how they would describe their weight at the time of interview: underweight, about right, overweight or very overweight.

Looking at data for the 2008-2011 module combined, just over half of adults (55%) correctly assessed their own weight, two in four (40%) under-assessed their weight; that is they perceived their weight to be lower than was actually the case, while a small proportion

(5%) estimated their weight to be more than was actually the case.

Table 8.1

Accuracy of self-assessment of own weight, 2008-2011 combined

All KAM participants with valid height and weight	%
Accurate assessment of weight – for example, people who thought their weight was about right and had a healthy BMI and people who thought they were overweight and who were overweight according to their had a BMI	55
Overestimated weight – for example, people who thought they were overweight but had a healthy weight according to their BMI	5
Underestimated weight – for example, people who thought their weight was about right but were overweight or obese according to their BMI	40

8.3.2 Accuracy of self-assessed weight by BMI status

Accuracy of self-assessed weight by individual BMI status (as measured in the main SHeS interview) is presented in Table 8.2 for 2008-2011 combined.

People with a healthy BMI (18.5 to less than 25 kg/m^2), were most accurate in their assessment of their weight with over three-quarters (77%) describing their weight as about right. Perceptions among those in the remaining weight categories were less closely aligned with their actual BMI measures. Six in ten (59%) of those who were underweight considered themselves to be so, four in ten thought their weight was about right. It is, however, worth noting that these estimates are imprecise because of the small sample size in the underweight category.

Six in ten of those that were overweight according to their BMI (25 to 30 kg/m^2), recognised that this was the case, although a significant proportion (39%) incorrectly assessed their weight to be lighter than was actually the case. Similarly, only 24% of those who were obese (BMI of 30kg/m^2 or more), accurately viewed themselves as being very overweight. While the majority (76%) of obese people underestimated their weight, most (69%) did at least recognise that they were overweight (data not shown) and 24% recognised that they were very overweight.

Table 8.2

8.3.3 Accuracy of self-assessed weight by age and sex

Recent SHeS data have shown that men are significantly more likely than women to be overweight or obese.[5] In 2011, for example, 69.2% of men fell into the overweight or obese categories, compared with 59.6% of women.

When it came to assessing their own weight, women were more accurate than men in their assessments. Over six in ten (62%) women correctly identified the weight category they fell into compared with five in ten (49%) men. Women were also more likely than men to overestimate their weight - i.e. to believe they were in a heavier weight

category than was actually the case (8% compared with 2% of men). Men were significantly more likely than women to underestimate their weight (49% compared with 30% of women).

The ability to accurately assess weight also varied significantly by age. On the whole, older people (those aged 55 or over) were less likely than younger people to accurately identify which weight category they fell into, with those aged 75 or over least able to do so (42%). This difference was largely explained by the fact that older people were much more likely than younger people to underestimate their weight; that is, they thought they were in a lower weight category than was actually the case. For example, those aged 75 or over were almost twice as likely as 16 to 24 year olds to underestimate their weight (57% compared with 29%). Interestingly, one in ten of those aged 16 to 24 overestimated their weight thinking they were in a heavier weight category than was actually the case. **Table 8.3**

8.3.4 Accuracy of self-assessed weight by area deprivation

Perceptions of weight by area deprivation, measured by the Scottish Index of Multiple Deprivation (SIMD), are presented in Table 8.4. While there was some association between accuracy of weight assessment and area deprivation the pattern was not linear. However, accuracy was greatest among those living in less deprived areas. More than six in ten (63%) of those living in the 20% least deprived areas in Scotland (SIMD quintile 5) correctly identified which weight category they fell into compared with 50% to 56% of those living elsewhere. The difference is largely accounted for by the tendency among those in more deprived areas to underestimate their weight. For example, 45% of those in the most deprived areas (SIMD quintile 1) thought they fell into a lower weight category than was actually the case, compared with 32% of those in areas of least deprivation (SIMD quintile 5). The proportion of people over-estimating their weight did not vary by deprivation.

Table 8.4

8.4 HOW DO PARENTS VIEW THEIR CHILDREN'S WEIGHT?

Although children themselves did not take part in the KAM interview, adult participants with children (aged 0 to 15) were asked to assess their child's weight. The options to choose from were: underweight, about right, overweight or very overweight. In the 2008 to 2011 period, the vast majority of parents (83%) described their child's weight as about right, 9% perceived them as underweight and 7% viewed them as overweight. Less than 1% considered their child to be very overweight. In reality, in 2011 only two-thirds (66%) of children had a healthy BMI, while 32% were overweight or obese.[5]

Parental assessment of weight by the child's actual BMI status (as measured in the main SHeS interview) is presented in Table 8.5. Parents with children of healthy weight were more accurate in their assessments than other parents. Eighty-seven percent of this group correctly identified their child's weight as about right. In contrast, just 22% of those with a child who was overweight or obese correctly perceived their child to be so. In fact, three-quarters (77%) of

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overweight or obese children were judged by their parents to be about the right weight. In comparison, much smaller proportions of overweight and obese adults judged their own weight to be about right (38% and 6% respectively)(data not shown).

Thus, the data suggest a greater gap between assessment of weight category and actual BMI for children compared with adult self-assessment. However, in interpreting these findings it is important to note that it is potentially more difficult to assess whether a child's weight is in a healthy range, given that age and stage of development are additional factors to be taken into account.

Table 8.5

8.5   KNOWLEDGE OF THE HEALTH IMPACTS OF OBESITY

To assess awareness of the impact of overweight and obesity on health, participants in the KAM module were presented with a list of health conditions and asked which, if any, they thought a person was more likely to develop if they were very overweight. The conditions presented were all included as health risks associated with overweight and obesity in the SIGN guideline on obesity management.[8]

One in seven (14%) adults correctly thought that an overweight person had an increased chance of developing all nine of the conditions listed in the survey (Table 8.6). Awareness of the link between obesity and both heart disease and high blood pressure were both very high (91% and 88% respectively). There was also high awareness of the increased risk of diabetes (75%) and stroke (68%). Knowledge was much lower in relation to less well-known conditions such as gout (31%) and gallbladder disease (24%). However, there were also low levels of knowledge about some other high-profile and prevalent conditions – for instance, only one in three (34%) were aware of a higher risk among the overweight of developing some cancers, and less than half (46%) identified arthritis.

Table 8.6

8.5.1   Knowledge of health impacts of obesity by age and sex

While knowledge of links between obesity and various health conditions did not vary significantly by sex, awareness levels did vary by age. On the whole, people under the age of 55 were more familiar with the health impacts of obesity than were older people. For example, 43% of those aged 35 to 44 thought that very overweight people were at increased risk of some cancers, compared with just 19% of those aged 75 and over. There were similarly pronounced differences for conditions like diabetes (84% compared with 52%) and stomach ulcers (37% compared with 12%). The knowledge gap was smaller, but still significant, with regards the link between obesity and heart disease (94% of those aged 35 to 44 correctly identified that obese people were at increased risk compared with 84% of those aged 75 and over). Overall, those aged 35 to 44 were three times as likely as those aged 75 or over to associate obesity with all the conditions mentioned (20% compared with 7%).

Table 8.6

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8.5.2 Knowledge of health impacts of obesity by area deprivation

For many of the specific conditions – particularly those frequently mentioned, such as heart disease and high blood pressure – there was little variation in the awareness levels of those living in deprived and less deprived areas. However, those in Scotland's most deprived areas (SIMD quintile 1) were significantly less likely than those living in areas of least deprivation (SIMD quintile 5) to be aware of the link between obesity and some cancers (27% compared with 40%). Those in areas of greatest deprivation were also least likely to be aware of the increased risk of diabetes (71% compared with 78% in the least deprived) and gout (26% against 34%) among very overweight people.

Table 8.7

8.6 MOTIVATIONS TO CONTROL WEIGHT

An assessment of a person's motivation to control their weight was made by asking KAM participants the following questions:

- whether they had tried to control their weight in the past year, and if so
  - whether they had managed to maintain this;
- whether they would like to control their weight, and if so
  - whether they were thinking of doing this in the next six months.

An individual's readiness to change a particular behaviour was determined by using their responses to the above questions to classify them according to DiClemente and Proschaska's 'Stages of Change' model,[9] as discussed in Chapter 1.

Classification ranges from 'has not tried to control weight in the previous 12 months and is not intending to do so in the next 6 months' (the pre-contemplation stage in the table below), to 'took steps to control weight in the last 12 months and maintained this action' (the maintenance stage). For the purpose of this report a further category called 'long term maintenance' has been added. This includes those people who did not mention having made any attempt to control their weight in the past year or wanting to control their weight but who had a healthy BMI. The creation of this long term maintenance category means that everyone in the pre-contemplation category had a BMI outwith the healthy range.

The proportion of the Scottish adult population in each of the motivation categories in 2011 is outlined in the table below.

Motivations to control weight, 2011

Stage of change	Definition of stage of change	2011 %
Pre-contemplation: BMI unknown	BMI unknown and has not tried to control weight in the previous 12 months and is not intending to do so in the next 6 months	8
Pre-contemplation: unhealthy BMI	Unhealthy BMI and has not tried to control weight in the previous 12 months and is not intending to do so in the next 6 months	26
Contemplation	Would like to control weight	2
Preparation	Would like to control weight and is thinking of doing so in the next 6 months	8
Action	Took steps to control weight in the previous 12 months but did not maintain this action	15
Maintenance	Took steps to control weight in the previous 12 months and maintained this action	16
Long term maintenance	Did not take steps to control weight in previous 12 months and no desire to do so, but already has a healthy BMI	25

Base=all adults aged 16+

Together the action and maintenance stages represent those who were motivated to take some steps to control their weight in the year prior to interview. In 2011, one in three adults had taken some action to control their weight – with greater or lesser success; half of those who had taken action had successfully maintained this (16% of all adults).

A quarter of adults were in the long term maintenance stage; they had not taken steps to control their weight and were not planning on doing so in the near future but were already a healthy weight. A similar proportion (26%) was in pre-contemplation; they had neither made any changes nor were they intending on doing so despite having an unhealthy BMI. A further 8% were considering taking steps to control their weight in the next six months (i.e. they were at the preparation stage).

There were no discernible trends over time in any of the categories, with any minor fluctuations most likely to be the result of sampling error rather than observed differences in the population. **Table 8.8**

8.6.1 Factors associated with taking positive steps to control weight

Multivariate logistic regression was used to examine the independent effect of a range of socio-demographic and behavioural characteristics on an individual's motivation to control their weight. The regression model explored factors independently associated with successfully taking or maintaining steps to control weight. This was defined as those classified as being in the 'maintenance' or 'long term maintenance' stages of change; that is those who successfully took steps to control their weight in the previous twelve months (maintenance) or those who didn't take or plan to take any steps to control their weight but who already had a healthy BMI (long term maintenance). In the discussion that follows these groups will be referred to collectively as maintainers.

Table 8.9 presents the odds ratios of being a maintainer. In these analyses, the odds of a reference group (shown in the table with a value of 1) are compared with those of the other categories for each individual factor. In this example, an odds ratio of greater than 1 indicates that the group in question has increased odds of being a maintainer compared with the reference category, and an odds ratio of less than 1 mean they have decreased odds. By simultaneously controlling for a number of factors, the independent effect each factor has on the variable of interest can be established. The regression model was run on the combined 2008-2011 data. A description of the factors included in the model is included in an endnote to the chapter.[10]

The factors found to be associated with being a maintainer were: sex, age, area deprivation and presence of other risk factors. Household income, educational attainment and NS-SEC were not significantly associated with motivation to control weight.

Sex was significantly associated with being a maintainer. Women had higher odds of being in the maintainenace/ long term maintenance stages of change than men (odds ratio of 1.58).

Once other factors were controlled for, age was significantly associated with motivation to control weight. The odds of being a maintainer decreased from the age of 35 onwards with those aged 75 or over having the lowest odds (odds ratio of 0.48).

Area deprivation was also associated with motivation levels, with the odds of being a maintainer decreasing as level of deprivation increased. Compared with those living in Scotland's least deprived areas (SIMD quintile 5) those living elsewhere had decreased odds of being in the maintainence/ long term maintainence stages of change (odds ratios ranging from 0.64 to 0.73 for those living in SIMD quintiles 1 to 4).

There was also a significant association between a person's motivation to control their weight and how many other unhealthly behaviours they had.[10] People with at least two other unhealthy behaviours had lower odds of being a maintainer relative to those with none or one. Odds decreased as the number of risk behaviours increased (odds ratio of 0.81 for those with 2 other risk factors and 0.64 and 0.54 for those with 3 and 4 risk behaviours respectively).   **Table 8.9**

8.7   KNOWLEDGE, BEHAVIOUR AND MOTIVATION TOWARDS CONTROLLING WEIGHT

This section draws together findings from the previous sections. It considers overall trends in knowledge of health risks of being overweight; behaviour, represented by actual BMI; motivation towards controlling weight; and the relationship between these. Figure 8A shows knowledge, behaviour and motivation over the period 2008 to 2011 using the following measures:

- Knowledge – percentage who correctly identified all health risks associated with overweight and obesity
- Behaviour – percentage who had a healthy BMI
- Motivation – percentage who took steps to control their weight in the previous 12 months (this combines the 'action' and 'maintenance' categories from the table above)

Figure 8A
Knowledge, behaviour and motivations towards weight, 2008-2011 combined

Legend:
- Knowledge - Identified all health conditions associated with being very overweight
- Behaviour - Had a healthy BMI (18.5kg/m2 - less than 25 kg/m2)
- Motivation - Took action to control weight in last 12 months
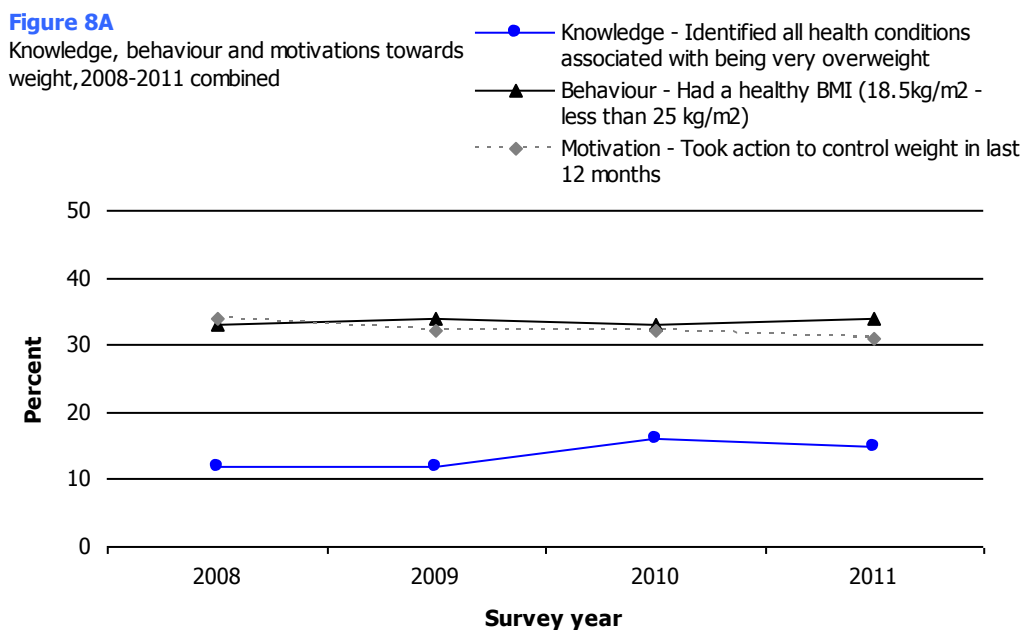
Figure 8A shows that over the four years of the KAM module, there has been no significant change in knowledge, behaviour or motivations in relation to weight. The proportions of the population in each category have remained steady between 2008 and 2011, with only minor fluctuations recorded from year to year. Knowledge of health conditions linked to overweight and obesity has ranged from 12% in 2008 to 16% in 2010; the proportion of adults with a healthy BMI has been recorded at between 32.9% and 33.9% in each year; and the proportion of adults that had been motivated to take action to control their

weight ranged from 34% in 2008 to 31% in 2011. It is worth noting that over the longer term (1995 to 2011) the observed increase in overweight and obese adults has levelled off since 2008. The apparent increase in knowledge and decrease in motivations may be the start of longer term trends, but at the moment neither represents significant change.

8.8 DISCUSSION

The SHeS 2011 reported the majority of adults in Scotland (just under two-thirds, 64%) to be overweight or obese, while a third of adults (34%) were reported to have a healthy weight.[5] While longer-term trends show a gradual increase in the proportion of the population who are overweight or obese, more recent figures (2008-2011) show some evidence of stability. This picture reflects the trends reported elsewhere in the SHeS and the KAM module in relation to diet, alcohol consumption and physical activity, all of which indicate little change in unhealthy behaviours which impact on weight.

Adults' self-assessment of their weight continues to be somewhat out of line with actual weight. Data from the KAM module shows a tendency for people to under-assess their weight, with four in ten people assessing their weight to be lighter than is actually the case according to their BMI. It is those with an unhealthy BMI that have the least accurate assessment of their weight. These findings suggest that more needs to be done to improve the public's understanding of what constitutes a healthy weight.

There was a similar, though more pronounced, disparity between parents' assessment of their children's weight and their actual weight. Three-quarters of parents of overweight or obese children judged the child's weight to be about right. As discussed earlier, monitoring a child's weight is a relatively complex task but nevertheless, the evidence suggests that more could be done to help inform parents about this aspect of their children's development.

Increasing public awareness of the health implications of overweight and obesity could in turn motivate some of those with an unhealthy weight, or who are at risk of certain conditions, to take positive steps to control their weight. While awareness of the risks for conditions like cardiovascular disease, diabetes and high blood pressure is already very high, the public are much less familiar of the risks associated with prevalent conditions such as cancers and arthritis.

There have been no significant discernible trends in knowledge, behaviour or motivation to change behaviour over the period 2008 to 2011. The mismatch in people's perceptions of their weight and their actual weight may be a factor here. If people do not accurately perceive their own weight to be unhealthy, they may not be motivated to change their behaviour – i.e. to reduce their calorie intake and/or increase their physical activity – in order to control their weight.

Along with other findings from the KAM module, the trend data provides little indication that the messages conveyed by health promotion initiatives such as the 'Take Life On' campaign are sufficient to address knowledge, motivation or behaviour in this area. Inaccurate self-assessment of weight may be a factor

here. Additionally, these persistent trends in knowledge, behaviour and motivation may merely be a reflection of the situation highlighted in the obesity Route Map: that action aimed at changing the behaviour of individuals will not be successful on its own, and that tackling Scotland's obesity problem will be a long term process requiring action to address the full range of environmental and societal issues which have created the obesogenic environment which has driven the increase in obesity over recent decades.

References and notes

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2 Scottish Government. *Preventing overweight and obesity in Scotland: A Route Map Towards Healthy Weight*. Edinburgh: the Scottish Government, 2010.

3 *National Performance Framework: Changes to the National Indictor Set*, Edinburgh: Scottish Government, 2012. Available from: www.scotland.gov.uk/About/scotPerforms/NIchanges See also: www.scotlandperforms.com

4 Health Analytical Services Scottish Government and Information and Statistics Division, NHS National Services Scotland. *Indicators to Monitor Progress of the Obesity Route Map*. Edinburgh: Scottish Government, 2011 www.scotland.gov.uk/Resource/Doc/346011/0115167.pdf

5 Gray, L. and Leyland, A. (2011). Chapter 5: Obesity in Rutherford, L., Sharp, C., Bromley, C. [eds.] *The Scottish Health Survey 2011,* Volume 2: Main Report. Edinburgh: Scottish Government.

6 To prevent participants from having to say their answer out loud, the options were presented on a card with random letters of the alphabet next to each one. Interviewers asked participants to read out the relevant letter, the options were not visible on their laptop screens. The same method was used for the question that asked parents about their children's weight.

7 Bromley C. et al (2010) Knowledge, Attitudes and Motivations to Health – a module of the Scottish Health Survey. NHS Health Scotland

8 Scottish Intercollegiate Guidelines Network. *Management of obesity: A national clinical guideline. SIGN guideline no. 115.* Edinburgh: SIGN 2010 (see Table 2, p.8).

9 The Stages of Change model (sometimes referred to as The Transtheoretical Model) is a model of health behaviour change developed initially by DiClemente and Proschaska in 1977. Here we refer to the version of the model which contains five 'stages of change' ranging from pre-contemplation to maintenance. For further reading on the 'Stages of Change' model see DiClemente, C.C., & Prochaska, J.O. (1982). 'Self change and therapy change of smoking behavior: A comparison of processes of change in cessation and maintenance'. *Addictive Behavior*. 7 (2): 133-42.

10 The socio-demographic factors included in the model were: sex, age, SIMD, equivalised household income, educational attainment and household NS-SEC. In addition, in order to assess the association with other behavioural characteristics explored in this report, the model also included a risk score variable measuring the presence of four of the other risk factors measured in the survey; smoking, drinking outwith the government's weekly and/or daily drinking guidelines, not meeting the five-a-day fruit and vegetable consumption target, and physical inactivity - not active at the recommended level. To create the risk scale each of the four behaviours was coded one if the risk factor was present and zero if not. The scale then summed the number of risks across the four categories, resulting in a five point scale from 0-4. The scale was only based on participants for whom data were available for each of the four measures; imputation was not used to handle missing cases. The final risk groups included in the model were: no other risk factors; 1-2 risk factors; 3 risk factors and 4 risk factors.

Table list

Table 8.1   Accuracy of weight self-assessment, 2008, 2009, 2010, 2011

Aged 16 and over with valid height and weight measurement   *2008, 2009, 2010 ,2011*

Accuracy of weight self-assessment	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Accurate	53	59	54	55
95% C.I.	(50.2-56.7)	(55.9-62.1)	(51.5-57.2)	(52.1-58.1)
Over-estimated	4	5	5	5
95% C.I.	(3.1-5.4)	(3.8-6.6)	(3.7-6.2)	(4.1-7.3)
Under-estimated	42	36	41	39
95% C.I.	(39.3-45.6)	(33.0-39.0)	(38.1-43.6)	(36.4-42.5)
Bases (weighted):	*1617*	*1769*	*1970*	*1955*
Bases (unweighted):	*1605*	*1730*	*1937*	*1929*

Table 8.2   Accuracy of weight self-assessment, 2008-2011 combined, by body mass index (BMI) status

Aged 16 and over with valid height and weight measurement   *2008-2011 combined*

Accuracy of weight self-assessment	Body Mass Index (kg/m^2)[a]			
	Underweight	Healthy weight	Overweight	Obese
	%	%	%	%
All adults				
Accurate	59	77	60	24
95% C.I.	(45.4-71.8)	(75.1-79.7)	(57.4-62.1)	(21.9-26.6)
Over-estimated	41	11	1	-
95% C.I.	(28.2-54.6)	(9.6-13.0)	(0.8-1.8)	(0.0-0.0)
Under-estimated	-	11	39	76
95% C.I.	(0.0-0.0)	(9.7-13.2)	(36.8-41.5)	(73.4-78.1)
Bases (weighted):	*140*	*2375*	*2742*	*2054*
Bases (unweighted):	*116*	*2235*	*2690*	*2160*

[a] The BMI groups are: Underweight = less than 18.5; Healthy weight=18.5 to less that 25; Overweight=25 to less than 30; Obese=30 and over.

Table 8.3   Accuracy of weight self-assessment, 2008-2011 combined, by age and sex

Aged 16 and over with valid height and weight measurement   *2008-2011 combined*

Accuracy of weight self-assessment	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Accurate	58	51	50	53	41	41	36	49
95% C.I.	(50.0-66.3)	(44.8-56.9)	(45.3-55.5)	(47.2-57.7)	(36.7-46.4)	(35.8-46.3)	(30.1-42.4)	(46.4-51.1)
Over-estimated	6	1	1	1	1	2	0	2
95% C.I.	(3.0-12.1)	(0.6-3.0)	(0.6-2.2)	(0.5-3.5)	(0.5-2.7)	(0.8-3.1)	(0.0-1.5)	(1.3-2.9)
Under-estimated	35	48	48	46	57	57	64	49
95% C.I.	(27.9-43.7)	(41.8-53.9)	(43.3-53.5)	(41.0-51.4)	(52.4-62.1)	(52.1-62.6)	(57.4-69.7)	(46.9-51.6)
Women								
Accurate	64	68	67	66	60	53	46	62
95% C.I.	(57.4-71.0)	(63.6-72.5)	(62.7-71.2)	(62.1-70.4)	(55.2-63.9)	(48.5-57.3)	(41.4-50.6)	(60.2-63.8)
Over-estimated	14	12	7	8	5	3	2	8
95% C.I.	(9.3-19.7)	(8.8-15.0)	(5.5-9.8)	(6.0-10.7)	(3.5-7.7)	(2.1-5.3)	(1.1-4.4)	(6.6-8.8)
Under-estimated	22	20	26	26	35	44	52	30
95% C.I.	(16.6-28.2)	(16.8-24.3)	(21.8-29.8)	(21.9-29.6)	(31.1-39.4)	(39.5-48.1)	(47.1-56.5)	(28.6-32.1)
All adults								
Accurate	61	59	59	60	51	47	42	55
95% C.I.	(55.9-66.5)	(55.3-63.0)	(55.3-62.2)	(56.1-62.9)	(47.3-54.0)	(43.8-50.6)	(38.3-45.9)	(54.0-57.0)
Over-estimated	10	6	4	5	3	3	1	5
95% C.I.	(6.9-13.6)	(4.7-8.1)	(3.3-5.6)	(3.5-6.4)	(2.2-4.6)	(1.7-3.7)	(0.7-2.7)	(4.2-5.6)
Under-estimated	29	35	37	36	46	50	57	40
95% C.I.	(24.2-34.2)	(31.0-38.5)	(33.6-40.3)	(32.4-39.1)	(42.9-49.5)	(46.9-53.6)	(52.6-60.3)	(38.2-41.2)
Bases (weighted):								
Men	545	575	630	679	566	383	226	3604
Women	495	530	640	702	574	418	348	3707
All adults	1040	1104	1270	1381	1140	801	575	7311
Bases (unweighted):								
Men	220	400	522	573	580	493	314	3102
Women	313	563	679	688	714	630	512	4099
All adults	533	963	1201	1261	1294	1123	826	7201

Table 8.4   Accuracy of weight self-assessment, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over with valid height and weight measurement   *2008-2011 combined*

Accuracy of weight self-assessment	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Accurate	63	53	56	56	50
95% C.I.	(59.3-65.8)	(49.4-56.3)	(52.8-59.5)	(52.4-59.3)	(46.9-53.4)
Over-estimated	5	4	4	6	5
95% C.I.	(4.0-7.3)	(3.4-5.9)	(2.7-5.0)	(4.1-8.4)	(3.7-6.5)
Under-estimated	32	43	40	38	45
95% C.I.	(29.0-35.2)	(39.4-46.0)	(36.9-43.5)	(35.0-41.5)	(41.7-48.2)
Bases (weighted):	*1437*	*1610*	*1435*	*1434*	*1395*
Bases (unweighted):	*1172*	*1574*	*1496*	*1433*	*1526*

Table 8.5   Parental assessment of child weight, 2008-2011 combined, by child body mass index status

Parents of children aged 0-15 with valid height and weight measurement   *2008-2011 combined*

Assessment of child weight	Body Mass Index (kg/m^2)				Total
	Overweight or obese[a]	Healthy weight[b]	No BMI measurement[c]	Underweight	
	%	%	%	%	%
All adults					
Underweight	1	12	9	(60)	9
95% C.I.	(0.7-3.0)	(10.0-14.6)	(6.7-11.4)	(42.5-75.8)	(8.2-11.0)
About right	77	87	85	(40)	83
95% C.I.	(72.7-80.2)	(84.4-89.1)	(81.9-87.7)	(24.2-57.5)	(81.6-85.1)
Overweight	21	1	5	(-)	7
95% C.I.	(17.3-24.8)	(0.5-1.8)	(3.7-7.3)	-	(5.5-7.7)
Very overweight	1	-	1	(-)	1
95% C.I.	(0.4-3.2)	-	(0.4-2.0)	-	(0.3-1.0)
Bases (weighted):	*504*	*1076*	*730*	*35*	*2344*
Bases (unweighted):	*535*	*1110*	*752*	*31*	*2428*

[a] BMI at or above 85th percentile

[b] BMI above 5th percentile, below 85th percentile

[c] This group includes children aged 0-1 from whom BMI cannot be calculated (no height/weight measurements); and children aged 2-15 who were not measured, or whose BMI was more than 3 standard deviations above or below the norm for their age

Table 8.6

Table 8.6   Knowledge of health conditions more likely among very overweight people, 2008-2011 combined, by age and sex

Aged 16 and over   *2008-2011 combined*

Health conditions	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Heart disease	90	93	95	95	94	89	84	92
95% C.I.	(84.0-93.8)	(90.2-95.7)	(91.8-96.6)	(91.9-96.4)	(91.1-95.7)	(85.7-91.8)	(79.7-88.0)	(91.0-93.4)
Some cancers	30	38	44	34	33	22	22	33
95% C.I.	(23.7-37.7)	(32.3-43.7)	(39.0-48.9)	(29.2-38.8)	(28.5-37.3)	(18.2-26.6)	(17.1-26.8)	(31.3-35.6)
Diabetes	73	84	84	78	72	57	57	75
95% C.I.	(65.2-79.4)	(79.9-87.8)	(80.1-87.4)	(73.8-82.3)	(67.4-75.5)	(51.7-61.4)	(51.0-61.9)	(72.7-76.4)
High blood pressure	84	95	95	91	88	81	77	89
95% C.I.	(76.4-89.0)	(92.1-96.8)	(92.6-96.7)	(87.4-93.4)	(84.3-90.1)	(77.3-84.8)	(71.7-81.3)	(87.2-90.0)
Stroke	62	68	78	73	72	62	57	69
95% C.I.	(54.0-69.3)	(62.6-73.8)	(73.8-81.7)	(68.1-76.9)	(68.1-76.3)	(57.3-67.0)	(51.6-62.9)	(67.0-71.1)
Gallbladder disease	21	25	30	21	15	12	11	21
95% C.I.	(15.6-28.0)	(20.3-29.9)	(25.6-35.0)	(17.1-25.2)	(12.6-19.0)	(8.9-15.5)	(8.0-15.0)	(18.9-22.5)
Arthritis	40	51	51	43	41	35	33	43
95% C.I.	(32.5-47.8)	(44.5-56.5)	(46.4-56.5)	(37.7-47.6)	(37.0-46.1)	(29.8-39.6)	(28.2-39.2)	(41.1-45.6)
Gout	30	36	43	36	27	20	17	32
95% C.I.	(23.4-37.9)	(30.4-41.3)	(37.4-47.8)	(31.2-40.8)	(23.0-31.0)	(16.4-24.5)	(12.9-21.5)	(29.6-33.9)
Stomach Ulcer	39	38	35	32	22	13	13	29
95% C.I.	(31.4-46.7)	(32.4-44.0)	(30.5-40.4)	(27.1-36.5)	(17.9-25.6)	(9.8-16.4)	(9.5-17.2)	(27.4-31.6)
All of these	15	15	17	13	9	6	7	13
95% C.I.	(10.5-21.8)	(11.2-19.3)	(13.5-21.8)	(10.2-17.1)	(6.6-11.8)	(4.4-9.3)	(4.5-10.3)	(11.1-14.3)
None of these	2	1	0	-	0	1	0	1
95% C.I.	(0.5-6.1)	(0.2-2.4)	(0.0-0.8)	(0.0-0.0)	(0.1-1.0)	(0.5-3.6)	(0.1-1.3)	(0.3-1.2)
Women								
Heart disease	91	94	94	92	90	85	84	91
95% C.I.	(86.4-93.8)	(91.7-96.1)	(91.5-95.3)	(90.1-94.3)	(86.8-91.9)	(81.9-87.7)	(80.5-86.9)	(89.5-91.5)
Some cancers	33	41	42	40	33	21	17	34
95% C.I.	(27.5-40.1)	(36.2-45.1)	(38.1-46.5)	(36.3-44.7)	(28.9-36.4)	(17.9-24.5)	(14.2-21.1)	(32.4-36.0)
Diabetes	80	84	84	81	76	65	50	76
95% C.I.	(74.4-84.4)	(80.3-87.2)	(81.0-87.2)	(77.6-84.3)	(72.5-79.4)	(61.5-69.0)	(45.2-54.1)	(74.7-77.7)
High blood pressure	88	92	92	91	89	84	77	88
95% C.I.	(83.2-91.9)	(89.7-94.6)	(88.8-93.7)	(88.0-93.0)	(85.5-91.0)	(80.5-86.6)	(73.1-80.4)	(87.1-89.5)
Stroke	63	68	72	73	68	56	51	66
95% C.I.	(57.1-69.4)	(63.7-71.7)	(68.3-75.6)	(69.4-76.8)	(64.2-71.9)	(52.2-60.2)	(47.1-55.8)	(64.4-67.8)
Gallbladder disease	21	33	36	32	26	17	14	27
95% C.I.	(16.4-27.2)	(28.5-37.1)	(32.3-40.5)	(28.5-36.3)	(22.8-29.7)	(13.9-20.0)	(11.1-17.5)	(25.4-28.8)
Arthritis	45	51	53	55	51	42	40	49
95% C.I.	(38.7-51.8)	(46.4-55.2)	(48.5-56.8)	(50.5-58.9)	(47.0-55.3)	(37.8-45.8)	(35.4-44.0)	(47.2-50.9)
Gout	29	40	41	35	23	15	14	30
95% C.I.	(23.7-35.4)	(35.9-44.9)	(36.6-44.6)	(31.6-39.6)	(20.2-27.0)	(11.9-17.7)	(10.9-17.2)	(28.2-31.6)
Stomach Ulcer	31	37	39	29	17	10	11	26
95% C.I.	(24.9-37.3)	(32.7-41.3)	(35.1-43.2)	(25.2-33.0)	(14.4-20.3)	(8.2-13.3)	(8.3-14.3)	(24.8-28.2)
All of these	16	21	22	17	10	6	6	15
95% C.I.	(11.9-21.5)	(17.7-25.1)	(18.5-25.4)	(13.9-20.2)	(8.1-12.7)	(4.2-8.0)	(4.4-9.2)	(13.6-16.4)
None of these	0	1	1	1	0	1	0	1
95% C.I.	(0.1-1.6)	(0.1-2.8)	(0.2-1.3)	(0.2-1.7)	(0.1-1.8)	(0.2-1.7)	(0.1-1.3)	(0.3-0.9)

Continued…

Table 8.6 *- Continued*

Aged 16 and over   *2008-2011 combined*

Health conditions	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
Heart disease	90	94	94	93	92	87	84	91
95% C.I.	(86.7-93.0)	(91.9-95.3)	(92.5-95.5)	(91.8-94.8)	(89.7-93.3)	(84.7-88.9)	(81.3-86.5)	(90.6-92.2)
Some cancers	32	39	43	37	33	22	19	34
95% C.I.	(27.4-36.7)	(35.6-42.9)	(39.9-46.2)	(34.2-40.5)	(29.8-35.7)	(19.0-24.3)	(16.3-22.1)	(32.4-35.2)
Diabetes	76	84	84	80	74	61	52	75
95% C.I.	(71.5-80.5)	(81.4-86.6)	(81.7-86.4)	(77.0-82.4)	(71.1-76.5)	(58.2-64.3)	(48.9-55.8)	(74.2-76.7)
High blood pressure	86	94	93	91	88	83	77	88
95% C.I.	(81.6-89.3)	(91.8-95.2)	(91.4-94.7)	(88.7-92.6)	(85.9-89.9)	(80.1-84.9)	(73.9-79.7)	(87.5-89.4)
Stroke	63	68	75	73	70	59	54	68
95% C.I.	(57.6-67.5)	(64.5-71.5)	(72.1-77.5)	(70.0-75.8)	(67.3-73.1)	(55.9-62.1)	(50.3-57.2)	(66.2-68.9)
Gallbladder disease	21	29	33	27	21	14	13	24
95% C.I.	(17.3-25.7)	(25.5-32.1)	(30.3-36.5)	(24.0-29.7)	(18.6-23.5)	(12.3-16.9)	(10.6-15.4)	(22.8-25.3)
Arthritis	42	51	52	49	46	38	37	46
95% C.I.	(37.5-47.6)	(46.9-54.5)	(48.9-55.3)	(45.6-52.2)	(43.4-49.5)	(35.3-41.7)	(33.9-40.7)	(44.8-47.8)
Gout	30	38	41	36	25	17	15	31
95% C.I.	(25.3-34.6)	(34.5-41.6)	(38.3-44.8)	(32.6-38.9)	(22.6-27.8)	(14.8-19.8)	(12.6-17.7)	(29.4-32.2)
Stomach Ulcer	35	38	37	30	19	12	12	28
95% C.I.	(30.0-40.1)	(33.9-41.2)	(34.2-40.5)	(27.3-33.3)	(16.9-21.9)	(9.6-13.7)	(9.5-14.3)	(26.5-29.3)
All of these	16	18	20	15	10	6	7	14
95% C.I.	(12.4-19.8)	(15.3-20.9)	(17.1-22.4)	(12.9-17.6)	(7.9-11.4)	(4.7-7.9)	(4.9-8.7)	(12.8-15.0)
None of these	1	1	0	0	0	1	0	1
95% C.I.	(0.4-3.2)	(0.2-1.7)	(0.2-0.7)	(0.1-0.9)	(0.1-1.0)	(0.4-2.0)	(0.2-0.9)	(0.4-0.9)
Bases (weighted):								
Men	597	645	696	725	626	426	281	3996
Women	571	640	763	786	659	493	434	4346
All adults	1168	1285	1458	1511	1285	919	715	8342
Bases (unweighted):								
Men	234	436	576	621	652	545	388	3452
Women	367	666	803	783	816	742	644	4821
All adults	601	1102	1379	1404	1468	1287	1032	8273

Table 8.7   Knowledge of health conditions more likely among very overweight people, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Health conditions	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Heart disease	93	91	91	91	91
95% C.I.	(91.5-94.6)	(89.0-92.4)	(89.3-92.9)	(88.7-92.1)	(89.4-92.8)
Some cancers	40	37	33	31	27
95% C.I.	(36.5-43.3)	(34.5-40.3)	(30.2-36.3)	(28.4-34.6)	(24.4-29.7)
Diabetes	78	79	75	73	71
95% C.I.	(75.2-80.8)	(76.8-81.6)	(72.5-77.8)	(70.1-75.6)	(68.7-74.1)
High blood pressure	90	89	89	87	87
95% C.I.	(88.2-92.2)	(86.9-90.5)	(87.4-90.9)	(84.4-88.9)	(84.8-89.1)
Stroke	70	70	67	66	65
95% C.I.	(66.8-73.0)	(66.8-72.4)	(64.4-70.4)	(62.4-68.8)	(61.8-67.7)
Gallbladder disease	27	25	25	22	21
95% C.I.	(24.4-30.4)	(22.3-27.3)	(21.9-27.7)	(19.6-24.8)	(18.8-23.8)
Arthritis	47	48	49	44	43
95% C.I.	(43.8-50.8)	(44.8-50.9)	(45.9-52.5)	(40.5-46.9)	(40.5-46.5)
Gout	34	32	32	29	26
95% C.I.	(30.5-37.1)	(29.5-35.1)	(29.2-35.6)	(26.5-32.2)	(23.6-29.0)
Stomach Ulcer	29	30	28	27	25
95% C.I.	(25.9-32.4)	(27.7-33.5)	(25.2-31.6)	(23.7-29.5)	(22.3-27.8)
All of these	15	14	15	13	12
95% C.I.	(12.9-17.9)	(12.1-16.2)	(12.9-18.2)	(10.9-15.4)	(9.7-13.8)
None of these	1	0	0	1	1
95% C.I.	(0.4-2.4)	(0.2-0.9)	(0.1-1.0)	(0.4-1.2)	(0.3-1.1)
Bases (weighted):	*1628*	*1787*	*1614*	*1670*	*1643*
Bases (unweighted):	*1341*	*1767*	*1677*	*1676*	*1812*

Table 8.8   Motivations for weight control, 2008, 2009, 2010, 2011

Aged 16 and over   *2008, 2009, 2010, 2011*

Motivations for weight control	Total 2008	Total 2009	Total 2010	Total 2011
	%	%	%	%
All adults				
Pre-contemplation: BMI unknown	7	7	7	8
95% C.I.	(6.0-9.1)	(5.9-9.2)	(5.6-8.5)	(6.6-9.7)
Pre-contemplation: unhealthy BMI[a]	26	23	27	26
95% C.I.	(23.2-28.1)	(20.3-25.0)	(24.6-29.5)	(23.7-28.9)
Contemplation	3	4	2	2
95% C.I.	(2.1-3.9)	(2.7-5.0)	(1.3-3.3)	(1.5-3.0)
Preparation	8	9	10	8
95% C.I.	(6.9-10.1)	(7.7-11.2)	(8.3-11.8)	(6.3-9.2)
Action	17	16	16	15
95% C.I.	(15.5-19.6)	(14.2-18.1)	(14.0-18.1)	(13.6-17.4)
Maintenance	17	16	16	16
95% C.I.	(14.5-18.7)	(13.7-18.0)	(14.1-17.7)	(14.1-17.6)
Long-term maintenance (already has healthy BMI)	22	25	22	25
95% C.I.	(19.4-24.3)	(22.7-27.9)	(20.1-24.9)	(22.3-27.5)
Bases (weighted):	*1846*	*2022*	*2279*	*2276*
Bases (unweighted):	*1846*	*2022*	*2279*	*2276*

[a] Unhealthy BMI includes people who were underweight, overweight and obese

Table 8.9   Estimated odds ratios for being in maintenance/long-term maintenance stage of change, 2008-2011 combined, by associated risk factors[a]

Aged 16 and over   *2008-2011 combined*

Independent variables

	Base (weighted)	Odds ratio	95% CI[b]
	6772		
Sex		(p=<0.001)	
Men	3000	1	
Women	3772	1.58	1.40, 1.79
Age		(p=<0.001)	
16-34	1362	1	
35-54	2189	0.86	0.72, 1.02
55-74	2277	0.75	0.64, 0.89
75+	944	0.48	0.39, 0.59
Scottish Index of Multiple Deprivation quintile		(p=<0.001)	
5th (least deprived)	1091	1	
4th	1455	0.73	0.59, 0.89
3rd	1385	0.71	0.57, 0.87
2nd	1366	0.68	0.55, 0.84
1st (most deprived)	1475	0.64	0.52, 0.78
Number of other risk factors[c]		(p=<0.001)	
0-1 risks	1778	1	
2 risks	2793	0.81	0.70, 0.95
3 risks	1764	0.64	0.54, 0.76
4 risks	437	0.54	0.41, 0.73

[a] Factors included in the model were: sex, age, SIMD, equivalised household income, educational attainment, household NS-SEC and number of other risk factors present

[b] Confidence Interval

[c] The other risk factors included in the count were smoking, drinking outwith government's daily and/or weekly guidelines, consuming fewer than five portions of fruit or vegetables per day, and physical inactivity (not being active at the recommended levels)
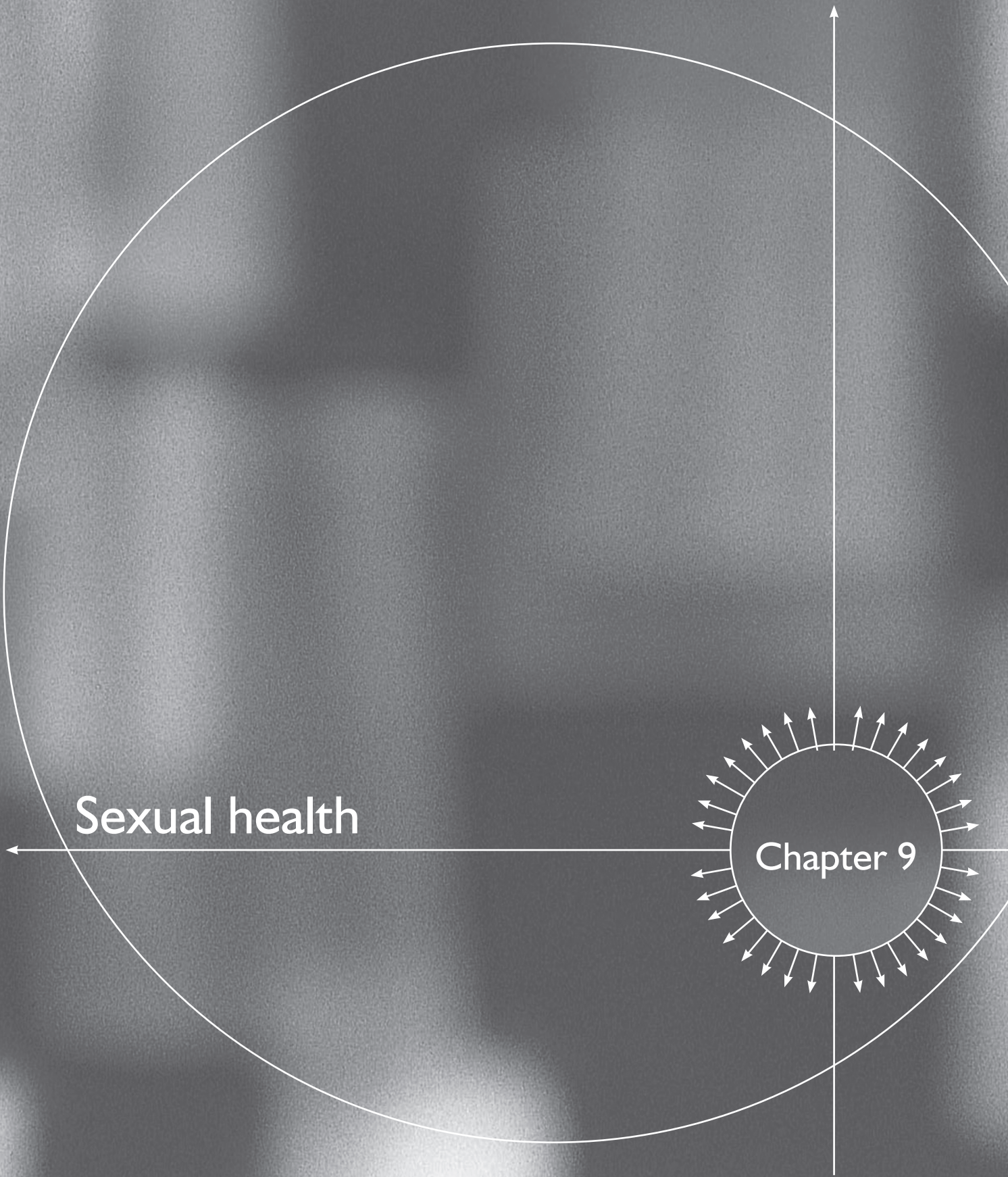
Sexual health

Chapter 9

9 SEXUAL HEALTH

Simon Anderson

SUMMARY

- In the 2008-2011 period, more than 8 in 10 adults felt they already knew enough about how to use a condom and enough about safer sex to protect themselves from sexually transmitted infections (STIs) (85% and 82% respectively), but fewer (63%) felt they knew enough about where a woman should go if she needed an abortion.

- Men were more likely than women to report that they knew enough about condom use (90% compared with 80%) but slightly less likely than them to feel that they had enough information about where a woman should go for an abortion (64% compared with 61%).

- There was little variation in either the level of knowledge or the demand for information about sexual health among those aged 16 to 54, though both were slightly lower among those aged 55 to 64 and reduced sharply from 65 onwards.

- Across all age groups, the demand for more information about sexual health was low; but it was relatively higher among young people in relation to condom use and protection against STIs. For example, 10% of those aged 16 to 24 wanted more information about protection against STIs compared with only 3% of those aged 35 to 44.

- The vast majority of Scottish adults were aware of at least one setting from which emergency contraception is available, but relatively few (20%) were aware of the full range. GP surgeries were most likely – and Accident and Emergency departments least likely - to be identified as providing such services.

- Women were more likely than men to be aware of the full range of settings in which emergency contraception is available (22% compared with 17%); and awareness was also generally higher among younger age groups and among those living in less deprived areas.

- Among those who felt that a series of statements about condom use applied to them, general awareness and understanding of the role of condoms was high: for example, 96% agreed that it is necessary to use a condom with a new partner. However, only 72% agreed that before stopping condom use, they and their partner would get tested for STIs.

- Women were much more likely than men to indicate that they would stop sexual intercourse if no condoms were available (91% compared with 76% of men) and that both partners should get tested for STIs before stopping condom use (77% compared with 66%). Younger people – and young men in particular – were more likely to indicate that they would take sexual health risks in relation to condom use.

- Around one in five sexually active women (19%) were using a long acting reversible contraceptive (LARC) at time of interview, rising to 29% of those aged 16 to 24. LARC use was higher in areas of greater deprivation.

9.1 INTRODUCTION

'Respect and Responsibility'[1] was Scotland's first sexual health strategy, introduced in 2005 amid rising levels of STIs and relatively high levels of teenage pregnancies compared with other European countries. In 2007, the Scottish Government launched the 'Better Health, Better Care'[2] action plan and, following a review in 2008, the Scottish Government, NHS Boards, Third Sector agencies, Local Authorities and other stakeholders worked towards the 'Respect and Responsibility National Sexual Health Outcomes 2008-2011.'[3]

In 2011, the Scottish Government launched 'The Sexual Health and Blood Borne Virus Framework (2011-2015)'[4] bringing together sexual health, HIV, hepatitis C and hepatitis B under one integrated strategy, promoting a holistic, multi-agency approach to tackling poor sexual health and blood borne viruses in Scotland. This has been accompanied by a new website – www.sexualhealthscotland.co.uk – providing advice and information about sexual health, relationships and service provision.

There has been an increasing emphasis on long-acting forms of contraception for women, such as injections, implants and intrauterine devices tied to the Framework outcome to reduce the number of unintended pregnancies. The survey therefore introduced new questions in 2008 about women's use of these methods and their willingness to consider them.

This chapter looks at what people think, and how much they know, about a range of sexual health issues. It also includes one specific measure of behaviour – women's use of long-acting reversible contraception (LARC). The questions on which this chapter is based were included in a self-completion section at the end of the Knowledge, Attitudes and Motivations to Health (KAM) module of the Scottish Health Survey (SHeS), and the following analysis is based on a combined data for the 2008 to 2011 surveys.

The chapter starts by exploring people's perceived need for information on access to abortion services, condom use and safer sex to protect against sexually transmitted infections (STIs). The chapter then examines awareness of where to access emergency contraception before moving on to explore attitudes to condom use in different situations. The final section shows data on women's use of LARC. All of these themes are explored in relation to age, gender and area deprivation.

9.2 WHAT DO PEOPLE KNOW ABOUT SEXUAL HEALTH ISSUES AND SERVICES?

9.2.1 Information needs regarding abortion, condoms and STIs

The KAM module included questions on sexual health in the self-completion section of the questionnaire. Participants were first asked about their perceived need for information in three key areas:

- where a woman should go if she needed an abortion;
- how to use a condom; and

- safer sex to protect against sexually transmitted infections (STIs).

In the 2008-2011 period, over 8 in 10 adults felt that they already knew enough about how to use a condom and had enough information on safer sex to protect themselves against STIs (85% and 82% respectively). However, only 63% of adults felt they knew enough about where a woman should go if she needed an abortion, with a higher proportion indicating that they did not want to know more about this topic: 19% did not want to know more about where a woman should go for an abortion and 12% selected 'don't know'. In comparison, 12% did not want more information about how to use a condom or about safer sex to protect against STIs and 2% selected 'don't know' for these questions.   **Tables 9.1, 9.3 and 9.5**

9.2.2   Information needs by age and sex

There was a slight but significant difference in the proportion of men and women who felt they had enough information about where a woman should go for an abortion (61% of men compared with 64% of women). But in relation to condom use and protecting against STIs men were more likely than women to feel they knew enough: for example, 90% of men felt they knew enough about how to use a condom compared with 80% of women. However, this was not because women felt that they wanted more information on condom use (2%) but because they did not want to know about condom use (16%). A similar pattern was seen in relation to information on safer sex to protect against STIs.

Older men and women were less likely than those younger than them to say they knew enough about where a woman should go for an abortion, condom use and safer sex. Levels of knowledge about these topics were broadly similar among those aged 16 to 54, declined slightly among those aged 55 to 64 and reduced sharply from age 65 onwards. For instance, 88% of those aged 45 to 54 felt they knew enough about protecting themselves against STIs reducing to 78% amongst those aged 55 to 64 and 40% among those aged over 75. The pattern for both men and women was similar, although there was a steeper decline in the proportion of women over 55 who knew enough about protecting against STIs and how to use a condom. Older people were also more likely than younger people to say that they did not want to know more about all three areas.

Across all age groups the proportion of people who wanted more information was low. Relatively speaking, however, the demand for information was greater among young people in relation to both condom use and protection against STIs: for example, 10% of those aged 16 to 24 wanted more information on protection against STIs compared with only 3% of those aged 35 to 44. The proportion of people who wanted more information on where a woman should go if she needed an abortion did not vary significantly by age.   **Tables 9.1, 9.3 and 9.5**

9.2.3 Information needs by area deprivation (SIMD)

People living in Scotland's more deprived areas were less likely than those living elsewhere to report that they already knew enough about how to use a condom: 81% of those in the most deprived areas (SIMD quintile 1) compared with 85% in the least deprived areas (SIMD quintile 5). There were no significant differences by area deprivation in relation to information needs on where a woman can get an abortion or protecting against STIs. **Tables 9.2, 9.4 and 9.6**

9.2.4 Awareness of emergency contraception services

Emergency contraception services are an important aspect of sexual health services that contribute to the Framework outcome to reduce the level of unintended pregnancies. Ability to access services is clearly dependent on members of the public knowing where such services can be accessed. Participants were shown a list of healthcare settings and asked to indicate at which they thought emergency contraception (the 'morning after pill') is currently available. Table 9.7 shows the proportions that selected each of the places listed and that mentioned all of them as well as the mean number of places mentioned (for those who named at least one provider).

The results suggest that, in the 2008-2011 period the vast majority of adults in Scotland were aware of at least one setting from which emergency contraception is available, but relatively few were aware of the full range. Table 9.7 shows that GP surgeries were most likely to be identified as providing emergency contraception, mentioned by 76% of participants, followed by pharmacists/chemists (65%), family planning clinics (61%) and sexual health clinics (53%). A quarter (26%) of people knew that emergency contraception can be obtained from accident and emergency departments. Only one person in five (20%) knew that all six places listed offered emergency contraception. However, almost none of those interviewed (fewer than 1%) thought that none of the places offered emergency contraception and only 6% of people said they did not know whether the places listed offered emergency contraception. The mean number of places mentioned was 3.3, again highlighting the fact that relatively few people are aware of the full range of places from which emergency contraception is available. **Table 9.7**

It is also worth noting that between 2008-2009 and 2010-2011, there was an increase in the proportion of adults identifying each setting from which emergency contraception is available. The scale of this increase ranged from 2% (for GPs and Accident and Emergency departments) to 6% for young people's drop-in centres (data not shown).

9.2.5 Awareness of emergency contraception services by age and sex

Women were more likely than men to be aware of almost all the settings in which it is possible to access the morning after pill though equal proportions knew that emergency contraception is provided by GPs. Two-thirds of women knew that family planning clinics provide emergency contraception compared with 56% of men. Women were

also more likely to be aware that all six places on the list offered emergency contraception: 22% of women compared with 17% of men. Women also mentioned more places than men that provided emergency contraception services, the mean number of places mentioned by women was 3.5 compared with 3.2 for men.

For each of the six places listed, knowledge of where to access emergency contraception decreased as age increased. Eighty-three percent of those aged 16 to 24 knew that emergency contraception was available from GPs compared with only 44% of those aged over 75. The proportion knowing that all six places offer emergency contraception also declined with age: 24% of those aged 16 to 24 knew this compared with 10% of those aged over 75.

Differences in levels of awareness between men and women were especially pronounced among those in younger age groups. Young women were more likely than young men to be aware of the different places to access the morning after pill. Around one in four women aged 16 to 24 (27%) knew that all six places offered emergency contraception compared with 22% of young men. Figure 9B shows the different levels of knowledge for each of the six places among young women and men aged 16 to 24. The biggest difference was in relation to awareness of family planning clinics which was mentioned by 79% of young women compared with 51% of men.   **Figure 9A, Table 9.7**

Figure 9A

Awareness of where to access emergency contraception among people aged 16-24, 2008-2011 combine, by sex
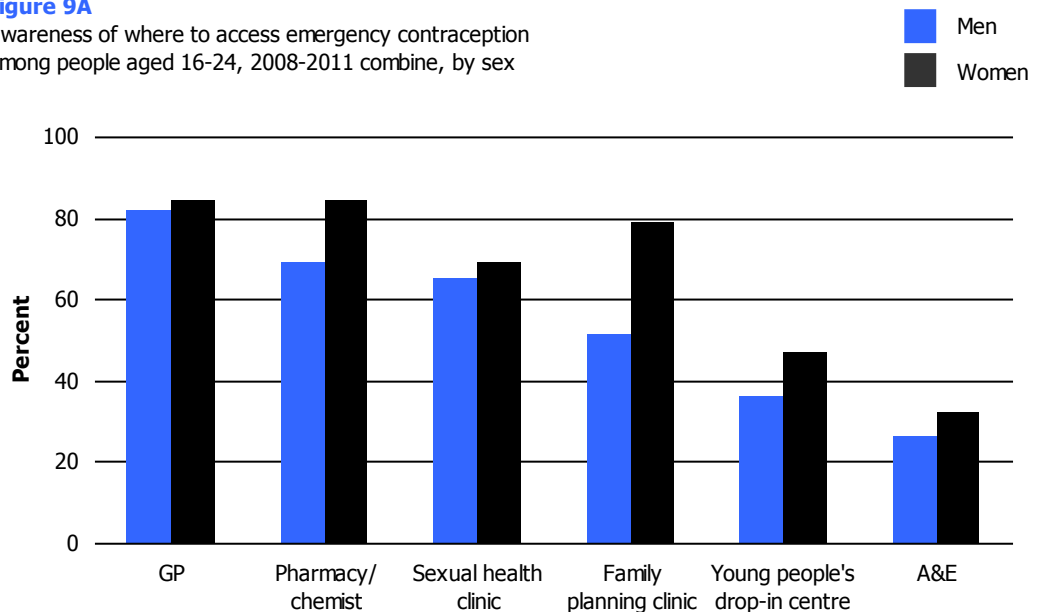
9.2.6 Awareness of emergency contraception services by area deprivation (SIMD)

Across all six service settings, people in the least deprived areas of Scotland were more likely than those in the most deprived areas to know where to access emergency contraception. The most marked differences were in relation to sexual health clinics, pharmacists and family planning clinics. For example, 60% in the least deprived areas

(SIMD quintile 1) knew that sexual health clinics provided emergency contraception compared with 48% in the most deprived areas (SIMD quintile 5). People in the most deprived areas also mentioned fewer places than those in the least deprived areas – an average of 3.1 among those in the most deprived areas and 3.6 among those in the least deprived areas. **Table 9.8**

9.3   ATTITUDES TO CONDOM USE

Increasing the availability and use of condoms is a key aim of the 'Respect and Responsibility national sexual health strategy.'[1] Since its introduction in 2005 improvements in the quality of sexual health services have been seen across Scotland, including increased provision of condoms provided through multi-agency working. Condoms play an important role within the sexual health strategy as the only method of contraception that also offers some protection against STIs, which continue to have a high incidence and prevalence in Scotland. The KAM module included questions on attitudes to condom use, asking participants how much they agree or disagree with the following four statements:

- If I wanted to have sexual intercourse with a new partner, I would ask if we could use a condom
- If I wanted to have sexual intercourse with a new partner, I would stop if we had no condoms
- It is necessary to use a condom with a new partner to help protect against sexually transmitted infections (STIs), including HIV, even if you are using some other method of contraception
- Once a new sexual partner has become a regular partner, we would both get tested for STIs before stopping using condoms.

These questions were included in the self-completion section of the questionnaire and participants were also given the option to choose 'don't know' or 'does not apply to me'. Looking at the data for the whole population, in the 2008 to 2011 period the proportion of people choosing 'does not apply to me' was 13% for the statement on whether they felt it was necessary to use a condom with a new partner to protect against STIs and ranged between 16% and 17% for the other three statements.

For each of the statements the proportion reporting that it did not apply to them increased markedly with age, from 3% among those aged 16 to 24 to 56% to 64% of those aged 75 and over (data not shown). This is likely to reflect both the declining relevance of contraception and lower levels of sexual activity as people age.

The following analysis focuses only on those who felt that the statements did apply to them. Among this group, agreement was high for all four statements, suggesting that general awareness and understanding of the role of condoms is high. It should be noted that these questions do not ask about their actual behaviour but about their attitudes and no corresponding data is available on behaviour.

Table 9.9 shows that nearly all participants (94%) agreed that *'If I wanted to have sexual intercourse with a new partner, I would ask if we could use a condom'*. A smaller proportion (84%) agreed that they would actually stop having sexual intercourse with a new partner if they did not have a condom. In relation to condom use to prevent STIs the vast majority (96%) agreed that it is necessary to use a condom with a new partner. However, only 72% agreed that before stopping using a condom they would both get tested for STIs. This suggests that people are aware of the risks and how to prevent getting STIs and yet are not prepared to get tested in order to protect themselves once they are in a regular partnership.

Overall people were more likely to say they neither agreed nor disagreed than to actually disagree with any of the four statements. The proportion disagreeing with the statements ranged from a high of 7% - whether they would get tested for STIs before stopping using condoms – to 1% disagreeing that it is necessary to use condoms to prevent against STIs.   **Tables 9.9 and 9.11**

9.3.1   Attitudes to condom use by age and sex

In relation to the statements on using a condom with a new partner and using condoms to protect against STIs there was little variation by sex. Figure 9C shows that women were slightly more likely than men to ask to use a condom with a new partner (96% compared with 92%). However, women were much more likely than men to agree that they would stop having sex if a condom was not available (91% of women compared with 76% of men). Women were also more likely to agree that both partners should get tested for STIs before stopping using condoms with a regular partner, 77% compared with 66%. In other words, men and women were equally likely to recognise the importance, in principle, of using condoms with a new partner, but men were less likely to say that they actually would ask to use a condom with a new partner, stop if they had no condoms or both be tested for STIs before stopping condom use.

Figure 9B and Tables 9.9 and 9.11

Attitudes to condom use, 2008-2011 combined, by sex (excluding people who said 'does not apply to me')

Men
Women
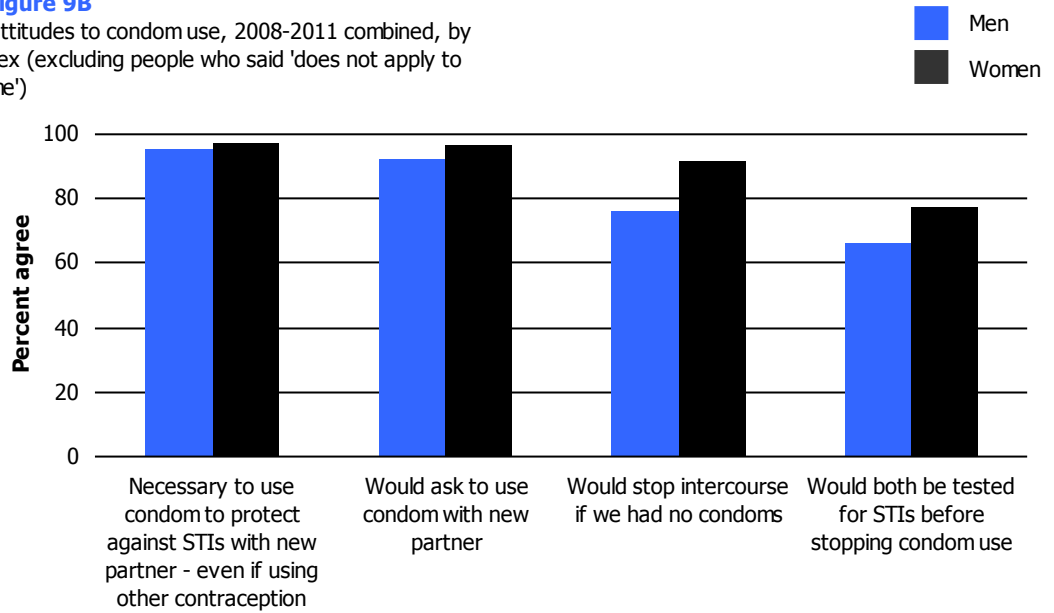
Generally speaking, younger people were more likely to indicate that they would take sexual health risks in relation to condom use. There was also a clear age effect which interacts with the reported gender differences as the difference in response between those aged 16 to 24 and older age groups is greater for men than for women. For example, 87% of women aged 16 to 24 would stop intercourse if they had no condoms compared with 68% of men of the same age. This compares with 91% of women aged 65 to 74 and 85% of men aged 65 to 74. Young men were less likely to agree with all four statements. It is also worth noting that the gap between their theoretical understanding of the importance of using condoms ("It's necessary to use a condom with a new partner to protect against STIs") and the indicator of likely sexual practice ("I would stop intercourse if we had no condoms") is especially wide. **Figure 9C and Tables 9.9 and 9.11**

Figure 9C

Attitudes to condom use among 16-24 yr olds, 2008-2011 combined, by sex (excluding people who said 'does not apply to me)

Men
Women
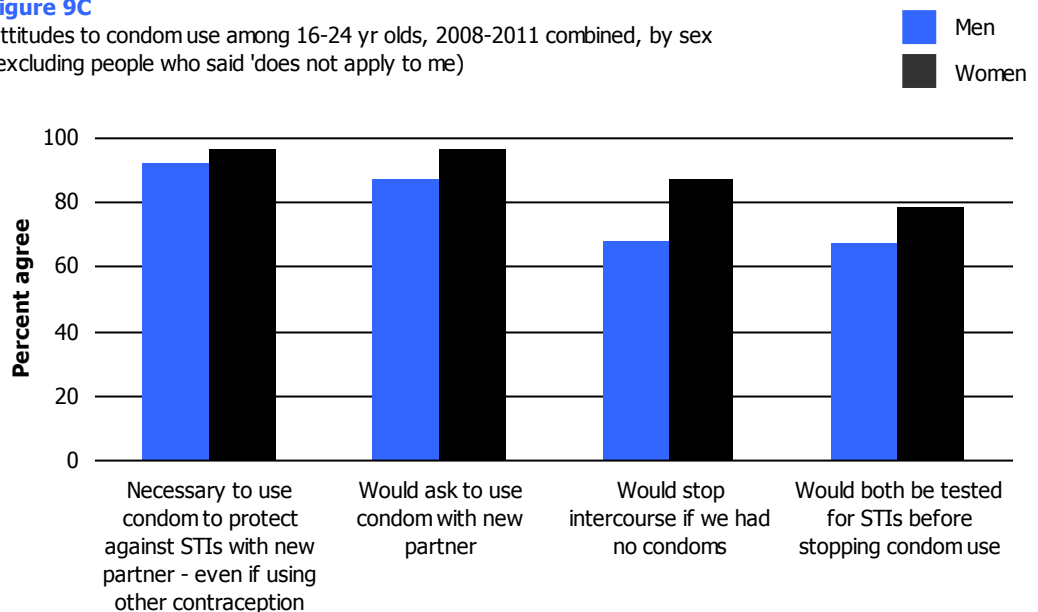
9.3.2 Attitudes to condom use by area deprivation (SIMD)

Tables 9.10 and 9.12 show responses to the four statements by area deprivation. There were no notable variations by area deprivation except in relation to getting tested for STIs. People in the most deprived areas (SIMD quintile 1) were more likely than those in the least deprived areas (SIMD quintile 5) to say they would get tested for STIs before stopping using condoms compared with (76% compared with 68%). The proportion disagreeing with this statement was similar across all deprivation groups but a higher proportion of those in the least deprived areas reported neither agreeing nor disagreeing: 23% in the least deprived areas compared with 14% in the most deprived areas).

Tables 9.10 and 9.12

9.4 LONG-ACTING REVERSIBLE CONTRACEPTION

The 'Respect and Responsibility' sexual health strategy included an objective to make long-acting reversible contraception (LARC) more widely available to women.[1] LARC methods are viewed as more effective forms of contraception as they are not affected by short-term illnesses (which can affect the contraception pill) and are not subject to user errors (such as forgetting to take the pill). The campaign 'Giving You More Choice.'[5] aimed at increasing LARC use, was launched in 2009 by NHS Health Scotland. Clinical indicator data suggest that LARC use is indeed increasing.[6]

As part of both the main SHeS interview and the KAM self-completion questionnaire, women aged 16 to 55 were asked about their use of LARC and whether their GP had suggested using LARC. The data present in Tables 9.13 and 9.14 relate to LARC use by age and area deprivation.

9.4.1 LARC use by age

Table 9.13 shows that 19% of sexually active women aged 16 to 55 in Scotland were currently using some method of long acting reversible contraception. The figure for all women aged 16 to 55 was 14%. The proportion of women using a LARC method declined with age. Twenty-nine percent of sexually active women aged 16 to 24 used a LARC method of contraception compared with 18% of those aged 35 to 44 and 10% of those aged 45 to 55.

Table 9.13

9.4.2 LARC use by area deprivation

Among sexually active women, LARC use increased as the level of deprivation increased. Women living in the most deprived areas (SIMD quintile 1) were more likely to use LARC than those living in the least deprived areas (SIMD quintile 5): 20% of women in the most deprived areas compared with 13% of women in the least deprived areas. Conversely, the proportion of all women aged 16 to 55 who were not using a LARC method of contraception at the time of interview reduced as area deprivation increased: 54% in the least deprived areas compared with 42% in the most deprived areas.

Table 9.14

9.5 DISCUSSION

The findings of the KAM module for the period 2008-2011 suggest that most adults in Scotland regard themselves as knowing enough about key sexual health issues, or as not seeing such issues as directly relevant to them. As such, there is no evidence of a widespread demand for additional information – though, of course, the survey did not test participants' understanding, and it is possible that there may still be a gap between perceived need for information and actual levels of understanding of key issues.

Some of the variations in information needs across key population sub-groups are also worth noting. Men, for example, appear to be more knowledgeable than women about condom use, while the reverse is true in relation to access to abortion. Demand for information about condom use is highest among those aged 16 to 24, suggesting that this group should remain a key focus for initiatives in this area. In relation to age, those in the oldest age groups are less likely to feel they know enough about various aspects of sexual health and more likely to say that they do not want to know more about all three areas. Nevertheless, this should not be seen as indication that sexual health education and information is irrelevant in relation to this age group. There are older people who do want to know more about such issues – either in relation to their own sexual behaviour or perhaps in order to advise children and grandchildren – and it is important that services are designed to be inclusive of their needs.

The survey provides some evidence that awareness of the availability of emergency contraception is increasing, and most adults in Scotland now clearly know of at least one setting at which such services can be accessed. However, most also remain unaware of the possibility of accessing emergency contraception in less obvious settings, such as young people's drop-in centres and accident and emergency departments. More could perhaps be done within such services, and more widely, to advertise this.

The responses to questions about condom use suggest high levels of general awareness of the role and importance of condoms in relation to sexual health. But they also suggest some discrepancy between people's knowledge and their actual practice. Although the survey did not ask directly about sexual behaviour, some of the measures did tap into likely behaviour and attitudes towards sexual risk. So it is worth noting that although the vast majority of those who felt the questions on condom use applied to them said they would ask a new partner to use a condom, the proportion saying they would stop if no condom were available or both be tested for STIs before stopping condom use was lower. This gap was wider for men than for women, and for younger men in particular. Given the negotiated character of sexual practices, these findings highlight the importance of focusing on male attitudes.

The survey indicates that long acting reversible contraception (LARC) is becoming relatively common, especially among younger sexually active women. It will be interesting to see whether the higher levels of take up among this cohort are carried through to subsequent age groups. It is also striking that LARC use is higher among sexually active women living in the most deprived areas, raising questions about whether this is a result of different patterns of service and information provision in such areas, variations in attitudes or other factors.

References and notes

1   Respect and Responsibility – Strategy and Action Plan for Improving Sexual Health, 2005, Edinburgh: Scottish Executive. Available from: <www.scotland.gov.uk/Topics/Health/health/sexualhealth/respect>

2   *Better Health, Better Care Action Plan.* Edinburgh: Scottish Government, 2007.

3   http://www.scotland.gov.uk/Resource/Doc/924/0079236.pdf

4   *The Sexual Health and Blood Borne Virus Framework, 2012-15.* Edinburgh: Scottish Government, 2011. http://www.scotland.gov.uk/Publications/2011/08/24085708/0

5   NHS Health Scotland (2009) *Giving you more choice campaign.* http://www.healthscotland.com/topics/health/wish/resources.aspx

6   http://www.isdscotland.org/Health-Topics/Sexual-Health/Key-Clinical-Indicators/Final%20KCI%20LARC%2020010%2027092010%20(2).pdf

Table list

Table 9.1   **Information needs on where a woman should go if she needed an abortion, 2008-2011 combined, by age and sex**

Information needs	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Know enough about this topic	69	70	67	62	57	42	37	61
95% C.I.	(61.3-76.0)	(64.2-74.8)	(61.8-71.1)	(56.4-66.4)	(51.6-61.4)	(36.2-47.9)	(30.3-44.7)	(59.2-63.6)
Want more information	10	7	3	7	7	6	5	6
95% C.I.	(5.5-16.3)	(4.6-10.1)	(1.6-5.0)	(4.7-10.7)	(5.0-10.0)	(3.6-8.5)	(2.6-10.2)	(5.3-7.8)
Do not want to know about this	8	14	18	18	22	31	35	18
95% C.I.	(5.3-13.0)	(10.5-18.3)	(14.7-22.4)	(14.2-21.8)	(17.8-26.0)	(26.3-37.0)	(27.7-42.0)	(16.7-20.1)
Don't know	13	9	12	14	15	21	23	14
95% C.I.	(8.5-18.9)	(6.6-13.4)	(9.0-16.4)	(10.3-17.7)	(11.7-18.3)	(17.0-25.8)	(17.3-29.9)	(12.3-15.4)
Women								
Know enough about this topic	70	72	72	70	61	42	29	64
95% C.I.	(63.3-75.1)	(67.7-75.7)	(67.8-75.1)	(66.2-74.4)	(56.3-64.8)	(37.7-47.3)	(23.6-34.3)	(62.3-65.9)
Want more information	9	7	5	4	5	4	2	5
95% C.I.	(6.2-13.5)	(5.1-9.9)	(3.1-6.8)	(2.2-5.7)	(3.6-7.8)	(2.3-5.8)	(0.9-3.9)	(4.5-6.3)
Do not want to know about this	11	14	17	17	22	36	50	20
95% C.I.	(7.2-16.0)	(11.5-17.8)	(14.2-20.3)	(13.9-20.6)	(18.8-25.8)	(31.0-40.6)	(43.6-55.6)	(18.7-21.7)
Don't know	10	7	7	9	12	18	20	10
95% C.I.	(7.0-15.3)	(4.8-9.2)	(5.0-9.3)	(6.6-12.1)	(9.4-15.0)	(15.0-22.1)	(15.5-25.1)	(9.3-11.6)
All adults								
Know enough about this topic	69	71	69	66	59	42	32	63
95% C.I.	(64.3-73.9)	(67.5-74.0)	(66.2-72.1)	(62.8-69.3)	(55.4-61.8)	(38.5-46.1)	(28.0-36.9)	(61.4-64.3)
Want more information	9	7	4	5	6	5	3	6
95% C.I.	(6.5-13.4)	(5.4-9.0)	(2.7-5.2)	(3.9-7.3)	(4.8-8.0)	(3.3-6.2)	(2.0-5.5)	(5.2-6.7)
Do not want to know about this	10	14	18	17	22	34	43	19
95% C.I.	(7.0-13.0)	(11.8-16.8)	(15.3-20.2)	(15.0-20.0)	(19.3-24.7)	(30.1-37.4)	(38.4-48.2)	(18.1-20.4)
Don't know	12	8	9	11	13	20	21	12
95% C.I.	(8.7-15.4)	(6.2-10.3)	(7.5-11.7)	(9.1-13.7)	(11.3-15.6)	(17.0-22.5)	(17.5-25.3)	(11.1-13.0)
Bases (weighted):								
Men	*558*	*622*	*660*	*678*	*536*	*328*	*162*	*3543*
Women	*554*	*621*	*722*	*725*	*570*	*362*	*221*	*3775*
All adults	*1112*	*1243*	*1383*	*1402*	*1106*	*689*	*383*	*7318*
Bases (unweighted):								
Men	*222*	*420*	*551*	*579*	*557*	*411*	*214*	*2954*
Women	*357*	*642*	*767*	*727*	*699*	*534*	*336*	*4062*
All adults	*579*	*1062*	*1318*	*1306*	*1256*	*945*	*550*	*7016*

Table 9.2   Information needs on where a woman should go if she needed an abortion, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Information needs	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Know enough about this topic	64	66	62	61	60
95% C.I.	(60.8-67.8)	(62.8-68.8)	(58.6-65.0)	(58.3-64.5)	(57.2-63.4)
Want more information	6	6	6	5	7
95% C.I.	(3.8-8.2)	(4.5-8.2)	(4.5-7.6)	(3.9-6.6)	(5.3-8.6)
Do not want to know about this	19	17	19	21	21
95% C.I.	(16.9-22.1)	(15.0-19.4)	(16.3-21.5)	(18.0-23.3)	(18.3-23.4)
Don't know	11	11	14	13	12
95% C.I.	(8.7-13.0)	(9.0-13.2)	(11.4-16.1)	(10.9-15.2)	(10.2-14.5)
Bases (weighted):	*1462*	*1592*	*1399*	*1437*	*1429*
Bases (unweighted):	*1169*	*1496*	*1415*	*1402*	*1534*

Table 9.3   Information needs on how to use a condom, 2008-2011 combined, by age and sex

Information needs	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Know enough about this topic	94	94	95	90	89	72	70	90
95% C.I.	(89.8-97.0)	(91.0-96.2)	(93.0-97.1)	(86.3-92.8)	(85.5-91.2)	(67.2-77.1)	(63.1-76.4)	(88.3-90.9)
Want more information	4	1	0	1	1	1	0	1
95% C.I.	(1.5-8.2)	(0.5-2.9)	(0.1-1.6)	(0.2-1.3)	(0.3-1.7)	(0.4-2.8)	(0.1-2.8)	(0.8-1.9)
Do not want to know about this	1	4	4	8	9	22	26	8
95% C.I.	(0.3-2.3)	(2.3-6.4)	(2.3-6.2)	(5.7-11.7)	(7.1-12.5)	(18.2-27.5)	(20.4-33.6)	(6.8-9.0)
Don't know	1	1	0	1	1	4	3	1
95% C.I.	(0.3-3.9)	(0.1-3.9)	(0.1-1.1)	(0.5-3.3)	(0.6-2.3)	(2.3-6.7)	(1.6-5.7)	(0.9-1.9)
Women								
Know enough about this topic	90	92	90	86	72	53	33	80
95% C.I.	(84.9-93.9)	(89.6-94.4)	(86.5-91.9)	(82.1-88.4)	(68.1-75.9)	(48.5-58.3)	(28.0-39.5)	(78.4-81.4)
Want more information	4	1	1	1	2	1	1	2
95% C.I.	(2.1-9.4)	(0.7-2.8)	(0.3-1.8)	(0.5-2.0)	(0.9-3.4)	(0.3-1.7)	(0.2-2.2)	(1.1-2.3)
Do not want to know about this	3	5	9	12	23	38	58	16
95% C.I.	(1.4-6.9)	(3.0-6.9)	(6.6-11.7)	(9.2-15.1)	(19.7-27.2)	(33.6-43.1)	(51.8-63.7)	(14.5-17.1)
Don't know	2	2	1	2	3	8	8	3
95% C.I.	(0.9-5.0)	(0.9-3.2)	(0.3-2.4)	(0.7-3.5)	(1.8-4.7)	(5.6-10.5)	(5.5-11.5)	(2.2-3.3)
All adults								
Know enough about this topic	92	93	92	88	80	62	49	85
95% C.I.	(89.0-94.7)	(91.3-94.8)	(90.5-93.9)	(85.3-89.8)	(77.5-82.6)	(58.9-65.9)	(44.2-53.8)	(83.6-85.7)
Want more information	4	1	1	1	1	1	1	1
95% C.I.	(2.2-7.0)	(0.8-2.3)	(0.3-1.2)	(0.5-1.4)	(0.7-2.1)	(0.4-1.7)	(0.2-1.5)	(1.1-1.9)
Do not want to know about this	2	4	6	10	17	31	45	12
95% C.I.	(1.1-3.9)	(3.0-5.8)	(5.0-8.2)	(8.2-12.3)	(14.3-19.1)	(27.5-34.2)	(39.8-49.5)	(11.0-12.8)
Don't know	2	1	1	1	2	6	6	2
95% C.I.	(0.8-3.3)	(0.6-2.4)	(0.3-1.4)	(0.8-2.6)	(1.4-3.1)	(4.4-7.8)	(4.2-8.1)	(1.7-2.4)
Bases (weighted):								
Men	558	622	660	678	536	328	162	3543
Women	553	620	722	724	570	362	221	3772
All adults	1111	1243	1383	1401	1106	691	382	7315
Bases (unweighted):								
Men	222	420	551	579	557	412	214	2955
Women	356	642	767	725	699	535	335	4059
All adults	578	1062	1318	1304	1256	947	549	7014

Table 9.4   Information needs on how to use a condom, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Information needs	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Know enough about this topic	85	87	86	84	81
95% C.I.	(82.7-87.3)	(84.8-88.7)	(83.6-88.0)	(81.5-86.1)	(78.8-83.5)
Want more information	1	1	1	2	2
95% C.I.	(0.5-2.7)	(0.3-1.6)	(0.7-2.4)	(0.8-3.2)	(1.4-3.5)
Do not want to know about this	12	11	10	12	14
95% C.I.	(10.4-14.4)	(9.2-12.6)	(8.7-12.5)	(10.4-14.4)	(11.9-16.0)
Don't know	1	2	2	2	3
95% C.I.	(0.8-2.2)	(1.0-2.6)	(1.5-3.6)	(1.6-3.1)	(1.9-3.8)
Bases (weighted):	*1463*	*1591*	*1399*	*1437*	*1426*
Bases (unweighted):	*1170*	*1495*	*1415*	*1402*	*1532*

Table 9.5   Information needs on safer sex to protect against STIs, 2008-2011 combined, by age and sex

Information needs	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Know enough about this topic	87	92	93	88	85	65	57	86
95% C.I.	(81.0-91.8)	(88.4-94.1)	(90.7-95.5)	(84.0-91.0)	(80.8-88.1)	(59.7-70.2)	(49.9-64.7)	(83.9-87.0)
Want more information	10	5	2	3	1	4	0	4
95% C.I.	(6.1-15.8)	(3.1-7.7)	(1.1-3.6)	(1.5-4.5)	(0.5-2.1)	(2.3-7.3)	(0.1-2.7)	(3.0-4.9)
Do not want to know about this	2	3	3	9	12	28	37	9
95% C.I.	(0.8-7.1)	(1.7-5.5)	(2.1-5.7)	(6.2-12.6)	(9.0-15.9)	(23.1-32.8)	(30.1-44.4)	(8.1-10.7)
Don't know	0	0	1	1	2	3	5	1
95% C.I.	(0.0-2.2)	(0.0-1.9)	(0.4-3.2)	(0.2-1.7)	(1.2-3.8)	(1.7-5.4)	(2.9-9.1)	(0.9-1.7)
Women								
Know enough about this topic	85	91	89	88	72	54	28	79
95% C.I.	(79.1-89.4)	(88.6-93.6)	(85.7-91.1)	(85.1-90.7)	(68.0-75.9)	(49.4-58.9)	(22.5-33.1)	(77.5-80.6)
Want more information	9	4	4	2	3	2	1	4
95% C.I.	(6.1-14.4)	(3.0-6.7)	(2.8-6.3)	(1.0-2.8)	(1.6-4.5)	(0.8-3.3)	(0.4-2.6)	(3.1-4.8)
Do not want to know about this	5	3	6	9	22	38	62	15
95% C.I.	(2.2-9.7)	(1.6-4.7)	(4.3-8.4)	(7.2-12.4)	(18.3-25.5)	(33.1-42.3)	(56.3-68.0)	(13.3-16.0)
Don't know	1	1	1	1	4	7	9	2
95% C.I.	(0.3-3.2)	(0.6-2.9)	(0.5-2.6)	(0.3-1.9)	(2.1-5.7)	(4.6-9.2)	(6.4-12.7)	(1.9-3.0)
All adults								
Know enough about this topic	86	92	91	88	78	59	40	82
95% C.I.	(82.0-89.5)	(89.5-93.3)	(89.0-92.6)	(85.6-90.1)	(75.4-80.9)	(55.8-62.8)	(35.4-45.0)	(81.1-83.3)
Want more information	10	5	3	2	2	3	1	4
95% C.I.	(7.0-13.3)	(3.5-6.3)	(2.2-4.4)	(1.4-3.1)	(1.2-2.9)	(1.8-4.5)	(0.3-1.8)	(3.3-4.5)
Do not want to know about this	4	3	5	9	17	33	52	12
95% C.I.	(1.9-6.6)	(1.9-4.3)	(3.6-6.3)	(7.3-11.4)	(14.6-19.7)	(29.6-36.3)	(46.8-56.5)	(11.2-13.0)
Don't know	1	1	1	1	3	5	7	2
95% C.I.	(0.2-1.8)	(0.4-1.7)	(0.6-2.2)	(0.4-1.4)	(2.0-4.1)	(3.6-6.6)	(5.5-10.0)	(1.6-2.2)
Bases (weighted):								
Men	*558*	*622*	*660*	*678*	*536*	*328*	*161*	*3543*
Women	*553*	*622*	*722*	*724*	*570*	*362*	*220*	*3773*
All adults	*1111*	*1244*	*1383*	*1402*	*1106*	*690*	*381*	*7315*
Bases (unweighted):								
Men	*222*	*420*	*551*	*579*	*557*	*412*	*213*	*2954*
Women	*356*	*643*	*767*	*726*	*699*	*534*	*335*	*4060*
All adults	*578*	*1063*	*1318*	*1305*	*1256*	*946*	*548*	*7014*

Table 9.6   Information needs on safer sex to protect against STIs, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Information needs	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
Know enough about this topic	82	84	84	81	81
95% C.I.	(78.8-84.1)	(81.1-85.8)	(81.5-86.2)	(78.3-83.6)	(78.2-83.1)
Want more information	4	4	3	4	4
95% C.I.	(2.5-5.3)	(2.6-5.7)	(2.3-4.5)	(2.9-6.3)	(3.1-5.8)
Do not want to know about this	14	11	11	12	12
95% C.I.	(11.4-15.9)	(9.3-12.9)	(9.3-13.5)	(10.3-14.4)	(10.7-14.5)
Don't know	1	2	2	2	2
95% C.I.	(0.7-2.1)	(1.1-2.4)	(1.1-2.4)	(1.6-3.4)	(1.8-3.5)
Bases (weighted):	*1462*	*1591*	*1398*	*1437*	*1428*
Bases (unweighted):	*1169*	*1495*	*1414*	*1402*	*1534*

Table 9.7 Awareness of where to access the morning after pill, 2008-2011 combined, by age and sex

Places mentioned[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
GP	82	77	83	76	68	71	50	76
95% C.I.	(73.9-87.6)	(71.9-82.2)	(78.7-86.1)	(71.6-80.2)	(63.3-72.5)	(65.5-75.2)	(42.3-57.2)	(73.5-77.5)
Pharmacist/chemist	69	67	66	58	61	51	42	62
95% C.I.	(60.7-75.9)	(60.8-72.1)	(61.5-70.8)	(52.6-62.8)	(55.8-65.5)	(45.2-56.7)	(35.1-49.8)	(59.5-64.0)
Accident and emergency department	26	26	24	18	22	18	18	22
95% C.I.	(19.9-34.2)	(20.9-31.4)	(20.2-28.9)	(14.1-22.7)	(17.8-26.0)	(14.3-23.2)	(13.2-25.2)	(20.5-24.6)
Sexual health clinic	65	54	57	47	49	40	30	52
95% C.I.	(56.4-72.0)	(48.3-60.3)	(51.8-62.1)	(42.1-52.6)	(43.7-53.8)	(34.9-46.2)	(23.4-37.6)	(49.5-54.3)
Family planning clinic	51	58	64	58	56	47	36	56
95% C.I.	(42.6-58.9)	(52.1-64.4)	(59.5-68.7)	(52.4-62.7)	(50.7-60.8)	(40.8-52.7)	(28.6-43.5)	(53.3-57.9)
Young people's drop-in centre	36	29	29	23	30	27	19	28
95% C.I.	(28.4-44.0)	(23.6-35.1)	(24.7-34.0)	(18.7-27.6)	(25.5-35.1)	(22.6-32.8)	(13.7-25.5)	(26.3-30.8)
All of these	22	17	18	12	17	16	14	17
95% C.I.	(15.9-29.4)	(13.2-22.3)	(14.0-21.7)	(9.2-16.6)	(13.7-21.0)	(11.9-20.1)	(9.4-20.1)	(15.0-18.7)
None of these	-	0	-	-	1	0	2	0
95% C.I.	(0.0-0.0)	(0.0-0.8)	(0.0-0.0)	(0.0-0.0)	(0.2-1.9)	(0.0-2.3)	(0.7-5.8)	(0.1-0.5)
Don't know	3	4	4	5	10	12	25	7
95% C.I.	(1.1-9.3)	(2.4-6.9)	(2.1-6.1)	(3.7-8.0)	(7.2-13.4)	(9.3-16.3)	(19.1-32.6)	(5.7-7.9)
Mean number of places mentioned[b]	3.4	3.3	3.3	3.0	3.2	2.9	2.6	3.2
95% C.I.	(3.1-3.7)	(3.0-3.5)	(3.2-3.5)	(2.8-3.2)	(3.0-3.4)	(2.7-3.1)	(2.2-2.9)	(3.1-3.3)

Continued…

Table 9.7   - Continued

Places mentioned[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Women								
GP	84	87	84	81	72	53	40	77
95% C.I.	(79.3-88.6)	(84.1-89.7)	(80.6-86.9)	(76.7-83.8)	(68.3-75.9)	(48.4-58.1)	(34.9-46.3)	(75.0-78.2)
Pharmacist/chemist	84	79	73	68	59	50	33	68
95% C.I.	(79.1-87.9)	(75.1-82.4)	(68.8-76.4)	(63.3-71.6)	(54.7-63.3)	(45.5-55.2)	(27.7-38.6)	(66.2-69.6)
Accident and emergency department	32	35	36	31	26	15	10	29
95% C.I.	(26.0-39.0)	(30.7-39.1)	(31.7-39.8)	(26.9-35.1)	(22.2-30.1)	(12.4-19.1)	(7.0-14.0)	(27.4-31.0)
Sexual health clinic	69	67	62	57	44	32	21	55
95% C.I.	(63.0-74.8)	(62.9-71.1)	(58.1-66.2)	(52.7-61.3)	(39.1-48.1)	(27.7-36.5)	(16.6-26.1)	(53.0-56.8)
Family planning clinic	79	75	74	68	57	44	30	66
95% C.I.	(72.9-83.3)	(70.5-78.1)	(70.5-78.0)	(64.3-72.3)	(53.2-61.6)	(39.0-48.6)	(24.5-35.3)	(63.9-67.6)
Young people's drop-in centre	47	41	42	40	32	24	14	37
95% C.I.	(40.6-53.9)	(36.3-45.0)	(38.0-46.2)	(35.6-44.0)	(27.6-35.9)	(20.2-28.0)	(10.9-19.0)	(35.3-39.1)
All of these	27	28	26	22	18	12	8	22
95% C.I.	(20.9-33.7)	(23.7-31.9)	(22.8-30.2)	(18.7-25.8)	(14.9-21.7)	(9.5-15.6)	(5.3-11.6)	(20.5-23.8)
None of these	0	0	0	0	0	2	1	0
95% C.I.	(0.1-3.5)	(0.0-0.7)	(0.0-0.7)	(0.0-0.7)	(0.1-1.6)	(0.8-3.0)	(0.2-2.4)	(0.2-0.7)
Don't know	2	1	2	2	6	16	36	6
95% C.I.	(0.7-4.9)	(0.3-1.9)	(1.1-3.9)	(1.4-3.7)	(4.0-7.6)	(13.2-20.3)	(30.1-41.5)	(5.0-6.5)
Mean number of places mentioned[b]	4.0	3.9	3.8	3.5	3.1	2.6	2.3	3.5
95% C.I.	(3.8-4.3)	(3.7-4.0)	(3.6-3.9)	(3.4-3.7)	(2.9-3.2)	(2.4-2.8)	(2.0-2.6)	(3.4-3.6)

Continued…

Table 9.7 *- Continued*

Places mentioned[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
All adults								
GP	83	82	83	78	70	61	44	76
95% C.I.	(78.6-86.8)	(79.2-85.1)	(80.8-85.6)	(75.5-81.1)	(67.2-73.1)	(57.9-65.0)	(39.8-49.1)	(74.8-77.4)
Pharmacist/chemist	76	73	70	63	60	51	37	65
95% C.I.	(71.4-80.7)	(69.3-76.1)	(66.7-72.5)	(59.5-66.1)	(56.6-63.1)	(46.9-54.4)	(32.4-41.5)	(63.5-66.4)
Accident and emergency department	29	30	30	25	24	17	14	26
95% C.I.	(24.8-34.3)	(27.0-33.9)	(27.4-33.2)	(21.8-27.8)	(21.1-26.8)	(14.3-19.8)	(10.7-17.1)	(24.6-27.3)
Sexual health clinic	67	61	60	52	46	36	25	53
95% C.I.	(61.9-71.5)	(57.0-64.4)	(56.5-62.9)	(49.0-55.7)	(42.8-49.4)	(32.5-39.6)	(20.8-29.2)	(51.9-55.0)
Family planning clinic	65	66	70	63	57	45	32	61
95% C.I.	(59.3-69.6)	(62.7-70.0)	(66.6-72.4)	(59.9-66.4)	(53.3-59.9)	(41.3-49.0)	(27.8-36.9)	(59.3-62.3)
Young people's drop-in centre	41	35	36	32	31	26	16	33
95% C.I.	(36.6-46.6)	(31.3-38.5)	(32.9-39.0)	(28.6-34.8)	(27.8-34.1)	(22.4-28.9)	(13.2-20.1)	(31.5-34.5)
All of these	24	22	22	17	18	14	10	20
95% C.I.	(20.1-29.2)	(19.5-25.7)	(19.6-24.8)	(14.9-20.1)	(15.2-20.2)	(11.5-16.6)	(7.9-13.7)	(18.3-20.8)
None of these	0	0	0	0	1	1	1	0
95% C.I.	(0.0-1.7)	(0.0-0.5)	(0.0-0.4)	(0.0-0.3)	(0.2-1.2)	(0.5-1.8)	(0.6-2.9)	(0.2-0.5)
Don't know	3	2	3	4	8	14	31	6
95% C.I.	(1.2-5.5)	(1.5-3.9)	(1.9-4.2)	(2.8-5.2)	(6.1-9.6)	(12.1-17.3)	(26.9-35.9)	(5.6-6.9)
Mean number of places mentioned[b]	3.7	3.6	3.6	3.3	3.1	2.8	2.4	3.3
95% C.I.	(3.5-3.9)	(3.4-3.7)	(3.5-3.7)	(3.1-3.4)	(3.0-3.2)	(2.6-2.9)	(2.2-2.6)	(3.3-3.4)

Continued…

Table 9.7 *- Continued*

Places mentioned[a]	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Bases (weighted):								
Men	*558*	*622*	*660*	*678*	*536*	*328*	*162*	*3544*
Men (no. of places mentioned)	*540*	*596*	*637*	*641*	*483*	*288*	*121*	*3305*
Women	*553*	*622*	*722*	*724*	*569*	*362*	*221*	*3773*
Women (no. of places mentioned)	*542*	*618*	*707*	*708*	*538*	*302*	*142*	*3557*
All adults	*1111*	*1244*	*1383*	*1402*	*1104*	*690*	*383*	*7316*
All adults (no. of places mentioned)	*1082*	*1214*	*1343*	*1349*	*1020*	*590*	*263*	*6862*
Bases (unweighted):								
Men	*222*	*420*	*551*	*579*	*557*	*412*	*214*	*2955*
Men (no. of places mentioned)	*217*	*404*	*531*	*539*	*508*	*355*	*162*	*2716*
Women	*356*	*644*	*767*	*726*	*697*	*534*	*336*	*4060*
Women (no. of places mentioned)	*350*	*640*	*752*	*707*	*646*	*446*	*209*	*3750*
All adults	*578*	*1064*	*1318*	*1305*	*1254*	*946*	*550*	*7015*
All adults (no. of places mentioned)	*567*	*1044*	*1283*	*1246*	*1154*	*801*	*371*	*6466*

[a] The figures for each individual place mentioned include the percentage of people who chose "all of these" option
[b] Mean number of places mentioned is based on all those who mentioned at least one place

Table 9.8   Awareness of where to access the morning after pill, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over   *2008-2011 combined*

Places mentioned[a]	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
All adults					
GP	75	80	77	77	72
95% C.I.	(71.8-77.8)	(76.9-81.9)	(74.1-79.5)	(73.7-79.3)	(69.3-75.0)
Pharmacist/chemist	71	66	66	62	61
95% C.I.	(67.4-73.7)	(62.6-68.7)	(62.5-68.8)	(58.4-65.0)	(57.5-63.7)
Accident and emergency department	29	25	28	26	21
95% C.I.	(26.2-32.5)	(22.7-28.3)	(25.1-31.8)	(22.9-29.2)	(18.3-23.6)
Sexual health clinic	60	53	55	51	48
95% C.I.	(56.8-63.7)	(49.6-56.4)	(51.7-58.3)	(47.6-54.6)	(44.6-50.9)
Family planning clinic	65	62	62	59	56
95% C.I.	(61.7-68.4)	(58.5-65.2)	(58.9-65.4)	(55.7-62.6)	(52.4-58.9)
Young people's drop-in centre	36	32	35	32	30
95% C.I.	(33.1-39.9)	(29.0-35.2)	(31.3-38.2)	(28.6-35.1)	(27.0-33.1)
All of these	23	18	22	20	15
95% C.I.	(20.0-25.9)	(15.8-20.6)	(19.0-25.2)	(17.0-22.6)	(13.0-17.8)
None of these	0	0	0	0	0
95% C.I.	(0.0-0.6)	(0.2-0.8)	(0.2-0.7)	(0.1-0.7)	(0.2-1.2)
Don't know	7	5	6	6	6
95% C.I.	(5.8-9.4)	(4.0-6.5)	(4.7-7.6)	(5.2-8.0)	(4.9-7.8)
Mean number of places mentioned[b]	3.6	3.3	3.4	3.3	3.1
95% C.I.	(3.5-3.8)	(3.2-3.5)	(3.3-3.6)	(3.1-3.4)	(2.9-3.2)
Bases (weighted):					
All adults	*1462*	*1592*	*1399*	*1436*	*1428*
Adults who mentioned places	*1354*	*1511*	*1315*	*1343*	*1339*
Bases (unweighted):					
All adults	*1170*	*1495*	*1415*	*1401*	*1534*
Adults who mentioned places	*1066*	*1400*	*1300*	*1279*	*1421*

[a] The figures for each individual place mentioned include the percentage of people who chose "all of these" option
[b] Mean number of places mentioned is based on all those who mentioned at least one place

Table 9.9   Attitudes to condom use with a new partner, 2008-2011 combined, by age and sex

Aged 16 and over who thought the question applied to them[a]   *2008-2011 combined*

Attitudes to condom use	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
If I wanted to have sexual intercourse with a new partner, I would ask if we could use a condom								
Men								
Agree	87	94	94	92	92	93	91	92
95% C.I.	(80.0-91.7)	(90.6-95.8)	(91.1-96.0)	(88.6-94.0)	(88.3-94.1)	(88.0-95.7)	(82.8-95.4)	(90.2-93.1)
Neither agree nor disagree	8	4	4	5	5	2	4	5
95% C.I.	(4.3-12.8)	(2.4-6.6)	(2.3-6.5)	(3.2-7.5)	(3.3-8.3)	(1.1-5.4)	(1.2-11.8)	(3.9-6.0)
Disagree	4	2	2	2	1	3	2	2
95% C.I.	(1.3-9.9)	(1.1-4.6)	(0.9-3.6)	(1.0-4.1)	(0.4-2.8)	(0.9-7.6)	(0.7-6.5)	(1.5-3.3)
Don't know	2	-	0	1	2	2	3	1
95% C.I.	(0.5-6.6)	-	(0.0-2.3)	(0.7-2.7)	(1.1-4.0)	(1.0-5.0)	(0.9-9.8)	(0.8-1.9)
Women								
Agree	96	96	98	98	97	91	81	96
95% C.I.	(92.1-97.5)	(94.0-97.6)	(96.4-98.7)	(96.3-98.8)	(94.5-97.8)	(86.3-94.0)	(71.6-88.2)	(95.4-96.9)
Neither agree nor disagree	3	1	1	1	2	3	8	2
95% C.I.	(1.1-5.9)	(0.8-2.4)	(0.5-2.5)	(0.3-1.9)	(1.1-3.6)	(1.7-6.7)	(3.9-15.4)	(1.3-2.3)
Disagree	1	2	0	1	1	2	6	1
95% C.I.	(0.5-3.5)	(0.8-3.5)	(0.2-1.3)	(0.4-2.5)	(0.3-2.2)	(0.5-4.9)	(2.1-14.3)	(0.8-1.7)
Don't know	1	1	1	0	1	4	5	1
95% C.I.	(0.1-2.3)	(0.2-2.8)	(0.2-1.4)	(0.1-1.2)	(0.2-2.0)	(2.2-7.5)	(2.2-11.8)	(0.6-1.3)
All adults								
Agree	91	95	96	95	94	92	87	94
95% C.I.	(87.3-93.9)	(93.1-96.3)	(94.5-97.1)	(93.3-96.2)	(92.2-95.6)	(88.8-94.2)	(81.3-91.4)	(93.1-94.8)
Neither agree nor disagree	5	3	2	3	4	3	5	3
95% C.I.	(3.2-8.0)	(1.8-4.1)	(1.6-3.8)	(1.9-4.1)	(2.5-5.2)	(1.7-4.8)	(2.9-10.2)	(2.7-3.9)
Disagree	3	2	1	1	1	2	3	2
95% C.I.	(1.1-5.6)	(1.2-3.3)	(0.6-2.0)	(0.8-2.6)	(0.5-1.9)	(0.9-4.8)	(1.6-7.3)	(1.3-2.3)
Don't know	1	0	0	1	1	3	4	1
95% C.I.	(0.4-3.5)	(0.1-1.4)	(0.2-1.1)	(0.5-1.5)	(0.7-2.3)	(1.9-5.1)	(1.9-7.9)	(0.8-1.4)

Continued…

Table 9.9 *- Continued*

Attitudes to condom use	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
If I wanted to have sexual intercourse with a new partner, I would stop if we had no condoms								
Men								
Agree	68	72	75	80	84	85	81	76
95% C.I.	(59.9-75.3)	(66.1-76.7)	(69.6-80.0)	(75.5-83.7)	(80.1-87.9)	(79.4-89.7)	(70.4-89.0)	(73.9-78.5)
Neither agree nor disagree	19	17	15	10	6	6	14	13
95% C.I.	(13.1-25.6)	(12.8-21.8)	(10.9-20.1)	(7.1-13.2)	(4.3-9.4)	(3.5-11.2)	(7.0-25.0)	(11.4-15.1)
Disagree	8	7	6	7	7	5	5	7
95% C.I.	(4.8-14.6)	(5.0-11.0)	(4.1-9.4)	(4.7-10.2)	(4.6-10.6)	(2.5-8.7)	(2.1-10.7)	(5.8-8.5)
Don't know	5	4	4	3	2	4	-	4
95% C.I.	(2.2-10.3)	(2.3-6.9)	(2.1-6.5)	(2.0-5.5)	(1.1-4.1)	(1.7-7.5)	-	(2.7-4.7)
Women								
Agree	87	87	92	94	94	91	82	91
95% C.I.	(82.2-90.6)	(83.7-90.0)	(89.0-93.7)	(91.8-96.0)	(91.6-96.2)	(86.3-93.7)	(71.2-89.1)	(89.4-91.8)
Neither agree nor disagree	7	7	5	3	3	4	7	5
95% C.I.	(4.6-11.3)	(4.8-9.9)	(3.3-7.0)	(1.8-4.7)	(1.5-5.0)	(2.3-8.0)	(3.6-14.4)	(4.1-6.0)
Disagree	4	4	2	2	1	2	6	3
95% C.I.	(2.3-7.8)	(2.3-5.7)	(1.0-3.1)	(1.2-4.3)	(0.6-2.6)	(1.1-5.0)	(2.1-14.2)	(2.1-3.5)
Don't know	2	2	2	1	2	3	5	2
95% C.I.	(0.7-3.1)	(1.2-4.2)	(0.9-3.2)	(0.2-1.3)	(0.8-3.5)	(1.2-5.6)	(2.1-12.5)	(1.3-2.2)
All adults								
Agree	77	79	84	87	89	88	82	84
95% C.I.	(72.8-81.6)	(76.0-82.3)	(80.7-86.6)	(84.8-89.4)	(86.9-91.4)	(84.2-90.7)	(74.0-87.4)	(82.2-84.8)
Neither agree nor disagree	13	12	10	6	5	5	11	9
95% C.I.	(9.8-16.8)	(9.6-14.9)	(7.4-12.4)	(4.8-8.1)	(3.3-6.3)	(3.5-8.3)	(6.6-18.2)	(8.0-10.2)
Disagree	6	6	4	5	4	4	5	5
95% C.I.	(4.2-9.7)	(4.1-7.6)	(2.7-5.5)	(3.3-6.3)	(2.8-5.9)	(2.2-5.9)	(2.7-9.5)	(4.1-5.6)
Don't know	3	3	3	2	2	3	2	3
95% C.I.	(1.7-5.9)	(2.1-4.7)	(1.7-4.1)	(1.2-3.0)	(1.2-3.1)	(1.8-5.5)	(0.8-5.3)	(2.1-3.2)
Bases (weighted)[b]:								
Men	*(546-539)*	*(603-596)*	*(601-592)*	*(598-596)*	*(416-413)*	*(225-213)*	*(87-81)*	*(3075-3030)*
Women	*(536-533)*	*(583-579)*	*(664-658)*	*(641-629)*	*(424-421)*	*(201-188)*	*(55-56)*	*(3104-3065)*
All adults	*(1081-1072)*	*(1186-1175)*	*(1265-1250)*	*(1239-1224)*	*(840-834)*	*(426-401)*	*(142-137)*	*(6179-6095)*
Bases (unweighted):								
Men	*(216-214)*	*(407-404)*	*(509-505)*	*(517-518)*	*(445-439)*	*(280-270)*	*(109-102)*	*(2483-2452)*
Women	*(348-347)*	*(608-605)*	*(712-703)*	*(644-635)*	*(519-514)*	*(290-273)*	*(87-85)*	*(3208-3162)*
All adults	*(564-561)*	*(1015-1009)*	*(1221-1208)*	*(1161-1153)*	*(964-953)*	*(570-543)*	*(196-187)*	*(5691-5614)*

a Participants who picked the "does not apply to me" have been excluded from the table
b Bases vary for each question, the figures for the first question in the table are shown first in the brackets

Table 9.10 Attitudes to condom use with a new partner, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over who thought the question applied to them[a]   *2008-2011 combined*

Attitudes to condom use	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
If I wanted to have sexual intercourse with a new partner, I would ask if we could use a condom					
All adults					
Agree	95	94	95	93	93
95% C.I.	(93.0-96.6)	(92.0-95.3)	(93.5-96.8)	(90.7-94.8)	(90.4-94.4)
Neither agree nor disagree	3	4	3	4	3
95% C.I.	(1.8-4.4)	(2.4-5.2)	(1.6-3.8)	(2.8-6.3)	(2.2-4.7)
Disagree	1	2	2	2	3
95% C.I.	(0.4-1.6)	(0.9-2.7)	(0.7-3.4)	(0.9-2.9)	(1.8-5.0)
Don't know	1	1	0	1	1
95% C.I.	(0.6-3.1)	(0.6-1.9)	(0.2-1.1)	(0.6-2.0)	(0.7-1.8)
If I wanted to have sexual intercourse with a new partner, I would stop if we had no condoms					
All adults					
Agree	84	84	83	84	82
95% C.I.	(81.0-87.3)	(81.2-86.5)	(79.8-86.3)	(81.0-86.5)	(78.5-84.7)
Neither agree nor disagree	10	8	9	8	10
95% C.I.	(7.7-13.3)	(5.9-10.2)	(6.9-11.8)	(6.5-10.7)	(7.6-12.8)
Disagree	4	5	5	5	5
95% C.I.	(2.7-6.2)	(3.5-6.7)	(3.7-7.8)	(3.6-7.2)	(3.5-6.4)
Don't know	1	3	2	3	4
95% C.I.	(0.7-2.4)	(2.3-4.9)	(1.4-3.5)	(1.7-3.9)	(2.2-5.6)
Bases (weighted)[b]:	(1219-1193)	(1335-1308)	(1182-1166)	(1206-1196)	(1236-1232)
Bases (unweighted):	(928-907)	(1214-1191)	(1139-1123)	(1125-1118)	(1285-1275)

a Participants who picked the "does not apply to me" have been excluded from the table
b Bases vary for each question, the figures for the first question in the table are shown first in the brackets

Table 9.11   Attitudes to condom use and STI prevention, 2008-2011 combined, by age and sex

Aged 16 and over who thought the question applied to them[a]   *2008-2011 combined*

Attitudes to condom use	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%

It is necessary to use a condom with a new partner to help protect against sexually transmitted infections (STIs), including HIV, even if you are using some other method of contraception

Men

	16-24	25-34	35-44	45-54	55-64	65-74	75+	Total
Agree	92	95	98	96	97	94	93	95
95% C.I.	(86.7-95.7)	(92.5-97.3)	(95.7-98.8)	(92.8-97.4)	(95.2-98.3)	(89.8-96.7)	(87.2-96.6)	(94.3-96.4)
Neither agree nor disagree	6	3	1	3	1	1	4	3
95% C.I.	(3.3-12.1)	(1.7-6.1)	(0.4-2.5)	(1.4-5.4)	(0.5-2.8)	(0.5-3.2)	(1.5-9.1)	(2.1-3.9)
Disagree	-	1	1	1	1	2	2	1
95% C.I.	(0.0-0.0)	(0.4-2.8)	(0.3-2.4)	(0.2-3.1)	(0.2-1.7)	(0.4-6.9)	(0.8-7.5)	(0.5-1.3)
Don't know	1	0	1	1	1	3	1	1
95% C.I.	(0.4-3.6)	(0.0-1.0)	(0.1-2.1)	(0.3-1.6)	(0.5-2.4)	(1.4-5.6)	(0.1-3.6)	(0.6-1.3)

Women

	16-24	25-34	35-44	45-54	55-64	65-74	75+	Total
Agree	96	98	98	99	96	96	86	97
95% C.I.	(92.0-97.9)	(96.3-98.7)	(96.6-99.2)	(97.7-99.5)	(93.8-97.9)	(93.2-97.9)	(78.1-90.8)	(96.4-97.8)
Neither agree nor disagree	2	1	1	0	1	2	6	1
95% C.I.	(0.6-5.3)	(0.6-2.4)	(0.3-1.8)	(0.1-1.2)	(0.7-2.9)	(1.2-4.9)	(3.0-11.0)	(0.9-1.8)
Disagree	1	1	0	1	1	-	2	1
95% C.I.	(0.1-5.2)	(0.2-1.7)	(0.1-1.2)	(0.2-1.9)	(0.4-3.8)	(0.0-0.0)	(0.5-8.5)	(0.4-1.2)
Don't know	2	0	1	0	1	1	7	1
95% C.I.	(0.6-3.8)	(0.1-1.3)	(0.1-2.6)	(0.1-0.7)	(0.4-2.5)	(0.5-3.9)	(3.3-12.6)	(0.6-1.4)

All adults

	16-24	25-34	35-44	45-54	55-64	65-74	75+	Total
Agree	94	97	98	97	97	95	90	96
95% C.I.	(90.3-96.4)	(95.1-97.7)	(96.9-98.8)	(95.8-98.3)	(95.2-97.8)	(92.7-96.8)	(84.7-92.9)	(95.6-97.0)
Neither agree nor disagree	4	2	1	2	1	2	5	2
95% C.I.	(2.4-7.2)	(1.3-3.7)	(0.4-1.6)	(0.8-2.8)	(0.8-2.3)	(1.0-3.2)	(2.8-8.1)	(1.6-2.6)
Disagree	0	1	1	1	1	1	2	1
95% C.I.	(0.1-2.6)	(0.4-1.7)	(0.2-1.3)	(0.3-1.7)	(0.4-2.1)	(0.2-3.7)	(0.9-5.5)	(0.5-1.1)
Don't know	1	0	1	0	1	2	3	1
95% C.I.	(0.7-2.8)	(0.1-0.7)	(0.2-1.6)	(0.2-0.9)	(0.6-1.9)	(1.2-3.8)	(1.8-6.6)	(0.6-1.2)

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Table 9.11   - Continued

Aged 16 and over who thought the question applied to them[a]   *2008-2011 combined*

Attitudes to condom use	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Once a new sexual partner has become a regular partner, we would both get tested for STIs before stopping using condoms								
Men								
Agree	67	62	60	63	76	78	82	66
95% C.I.	(58.9-74.5)	(55.6-67.6)	(55.3-65.4)	(57.6-67.9)	(70.5-80.3)	(71.2-83.1)	(71.8-88.9)	(63.6-68.7)
Neither agree nor disagree	19	26	27	21	15	10	12	21
95% C.I.	(13.1-26.2)	(20.6-31.8)	(22.7-31.7)	(17.2-25.6)	(11.7-20.3)	(7.1-15.3)	(6.5-22.8)	(18.9-23.3)
Disagree	9	10	10	13	6	6	2	9
95% C.I.	(5.1-14.9)	(6.8-13.3)	(7.0-13.5)	(9.8-16.7)	(4.0-9.5)	(3.5-10.5)	(0.6-5.8)	(7.9-10.8)
Don't know	5	3	3	3	3	6	4	4
95% C.I.	(2.6-10.3)	(1.4-5.8)	(1.6-4.8)	(1.8-5.5)	(1.4-4.6)	(3.2-10.0)	(1.5-8.7)	(2.7-4.6)
Women								
Agree	78	75	76	76	80	86	78	77
95% C.I.	(71.7-82.8)	(70.8-79.1)	(71.8-79.2)	(71.6-79.3)	(75.3-83.3)	(80.5-89.8)	(68.5-85.4)	(75.3-78.9)
Neither agree nor disagree	15	17	18	16	12	7	9	15
95% C.I.	(10.4-20.6)	(13.5-20.5)	(15.3-21.9)	(12.6-19.2)	(9.1-15.6)	(4.2-11.1)	(4.8-15.6)	(13.6-16.8)
Disagree	4	5	4	6	4	3	5	4
95% C.I.	(2.2-7.3)	(3.3-7.3)	(2.7-5.7)	(3.9-8.3)	(2.4-6.3)	(1.5-7.2)	(2.1-13.4)	(3.7-5.4)
Don't know	3	3	2	3	4	4	8	3
95% C.I.	(1.7-6.7)	(1.8-5.5)	(1.2-3.3)	(1.9-4.6)	(2.8-7.0)	(2.3-7.1)	(3.7-15.1)	(2.6-4.1)
All adults								
Agree	72	68	69	69	78	82	80	72
95% C.I.	(67.2-77.0)	(64.6-71.9)	(65.3-71.6)	(66.1-72.5)	(74.2-80.8)	(77.5-85.0)	(73.4-85.6)	(70.1-73.3)
Neither agree nor disagree	17	21	22	18	14	9	11	18
95% C.I.	(13.1-21.3)	(18.1-24.9)	(19.7-25.3)	(15.9-21.1)	(11.2-16.7)	(6.5-11.8)	(6.7-16.9)	(16.7-19.4)
Disagree	6	7	7	9	5	5	4	7
95% C.I.	(4.3-9.7)	(5.6-9.4)	(5.2-8.6)	(7.3-11.6)	(3.7-6.9)	(3.0-7.5)	(1.6-7.4)	(6.0-7.7)
Don't know	4	3	2	3	4	5	6	3
95% C.I.	(2.6-7.1)	(1.9-4.7)	(1.6-3.5)	(2.2-4.4)	(2.5-5.0)	(3.2-7.3)	(3.1-9.6)	(2.8-4.0)
Bases (weighted)[b]:								
Men	*(541-544)*	*(607-596)*	*(627-586)*	*(628-599)*	*(435-410)*	*(231-204)*	*(86-79)*	*(3155-3018)*
Women	*(539-533)*	*(596-578)*	*(683-657)*	*(653-621)*	*(462-423)*	*(211-187)*	*(83-68)*	*(3226-3066)*
All adults	*(1080-1077)*	*(1203-1174)*	*(1310-1243)*	*(1281-1219)*	*(897-832)*	*(442-391)*	*(169-147)*	*(6381-6084)*
Bases (unweighted):								
Men	*(216-216)*	*(409-402)*	*(524-505)*	*(542-520)*	*(463-435)*	*(291-260)*	*(115-103)*	*(2560-2441)*
Women	*(350-348)*	*(620-605)*	*(731-700)*	*(660-628)*	*(564-514)*	*(302-275)*	*(118-99)*	*(3345-3169)*
All adults	*(566-564)*	*(1029-1007)*	*(1255-1205)*	*(1202-1148)*	*(1027-949)*	*(593-535)*	*(233-202)*	*(5905-5610)*

Table 9.12 Attitudes to condom use and STI prevention, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Aged 16 and over who thought the question applied to them[a]　　　　　　　*2008-2011 combined*

Attitudes to condom use	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
It is necessary to use a condom with a new partner to help protect against sexually transmitted infections (STIs), including HIV, even if you are using some other method of contraception					
All adults					
Agree	96	97	97	96	95
95% C.I.	(93.4-98.2)	(95.5-97.9)	(96.2-98.4)	(94.6-97.5)	(92.9-95.9)
Neither agree nor disagree	2	2	1	3	3
95% C.I.	(0.7-4.0)	(1.1-3.2)	(0.8-2.7)	(1.6-4.0)	(1.7-4.1)
Disagree	1	1	1	0	1
95% C.I.	(0.4-2.7)	(0.3-1.3)	(0.2-1.3)	(0.2-1.2)	(0.5-1.9)
Don't know	1	1	0	1	2
95% C.I.	(0.3-1.6)	(0.3-1.3)	(0.2-1.0)	(0.3-1.5)	(1.2-2.8)
Once a new sexual partner has become a regular partner, we would both get tested for STIs before stopping using condoms					
All adults					
Agree	68	70	73	71	76
95% C.I.	(63.9-72.0)	(66.9-73.2)	(69.2-76.4)	(67.8-74.5)	(73.0-79.1)
Neither agree nor disagree	23	18	17	19	14
95% C.I.	(19.3-26.3)	(15.4-20.5)	(14.0-20.0)	(16.2-22.4)	(11.8-16.9)
Disagree	7	8	7	6	6
95% C.I.	(5.1-9.0)	(6.2-10.3)	(5.3-8.9)	(4.9-8.5)	(4.4-7.9)
Don't know	3	4	3	3	4
95% C.I.	(1.6-4.1)	(2.7-6.0)	(2.2-5.0)	(2.2-4.5)	(2.7-5.2)
Bases (weighted)[b]:	*(1256-1163)*	*(1396-1316)*	*(1213-1161)*	*(1247-1205)*	*(1268-1239)*
Bases (unweighted):	*(970-887)*	*(1272-1185)*	*(1176-1127)*	*(1165-1122)*	*(1322-1289)*

**Table 9.13 Women's use of long-acting reversible contraception (LARC), 2008-2011 combined, by age**

Use of LARC	Age				Total
	16-24	25-34	35-44	45-55	
	%	%	%	%	%
Currently using LARC	19	18	14	7	14
95% C.I.	(16.3-21.6)	(16.6-20.2)	(12.6-15.5)	(5.9-8.0)	(13.0-14.7)
Not using LARC	47	65	64	62	61
95% C.I.	(43.9-50.3)	(62.9-67.4)	(62.4-66.4)	(60.6-64.3)	(59.3-61.7)
Not sexually active	34	16	22	31	26
95% C.I.	(31.0-37.4)	(14.7-18.4)	(20.0-23.3)	(28.9-32.5)	(24.6-26.7)
Sexually active and using LARC	29	22	18	10	19
95% C.I.	(25.0-32.3)	(19.9-24.1)	(16.1-19.7)	(8.6-11.5)	(17.5-19.7)
Bases (weighted):					
Women (16-55)	*1817*	*2054*	*2438*	*2687*	*8996*
Women (sexually active)	*1197*	*1715*	*1912*	*1864*	*6688*
Bases (unweighted):					
Women (16-55)	*1350*	*2027*	*2644*	*2964*	*8985*
Women (sexually active)	*920*	*1669*	*2049*	*2023*	*6661*

Note: This table is based on data collected in the main SHeS interview

Table 9.14 Women's use of LARC, 2008-2011 combined, by Scottish Index of Multiple Deprivation (SIMD) quintile

Use of LARC	Scottish Index of Multiple Deprivation quintile				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
Currently using LARC	8	8	10	10	11
95% C.I.	(7.3-9.7)	(6.9-9.2)	(8.8-11.9)	(8.4-10.9)	(9.2-12.0)
Not using LARC	54	54	49	45	42
95% C.I.	(52.1-56.5)	(51.8-55.7)	(47.3-51.4)	(43.1-47.3)	(39.9-43.9)
Not sexually active	37	38	40	45	48
95% C.I.	(35.0-39.5)	(36.4-40.2)	(38.3-42.4)	(43.2-47.3)	(45.5-49.7)
Sexually active and using LARC	13	13	17	17	20
95% C.I.	(11.7-15.3)	(11.2-14.8)	(14.9-19.8)	(15.3-19.8)	(17.8-22.7)
Bases (weighted):					
Women (16-55)	*2635*	*2781*	*2663*	*2689*	*2652*
Women (sexually active)	*1654*	*1717*	*1588*	*1472*	*1390*
Bases (unweighted):					
Women (16-55)	*2540*	*3242*	*3072*	*2773*	*2877*
Women (sexually active)	*1542*	*1933*	*1752*	*1435*	*1405*

Note: This table is based on data collected in the main SHeS interview

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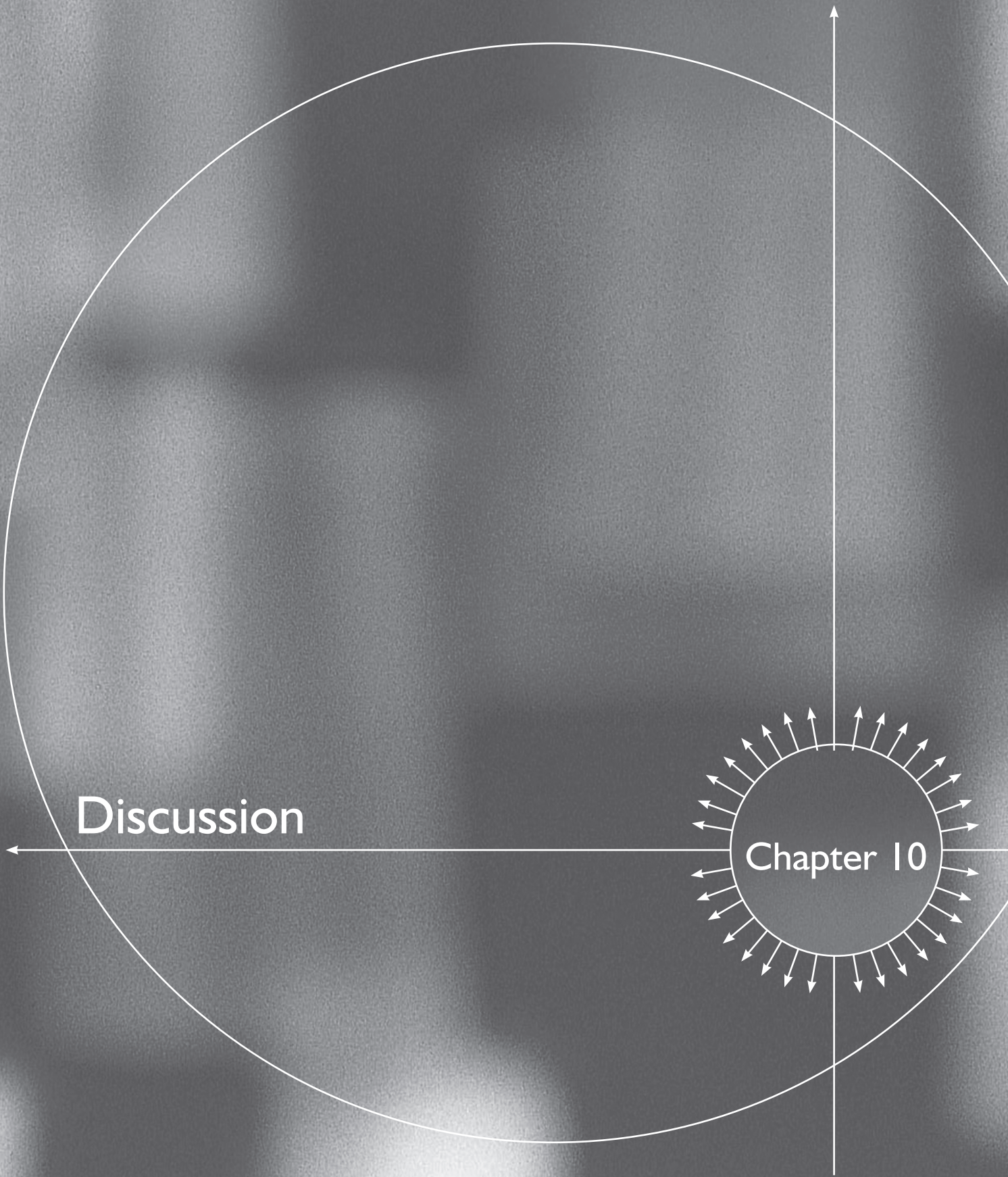
Chapter 10

10 DISCUSSION

10.1 OVERVIEW OF THE DISCUSSION CHAPTER

The chapter begins with a brief overview of some of the main themes emerging from the report (Section 10.2). It starts with a discussion on the extent to which there are perception-behaviour gaps across the topics covered in the report, based on the analyses in the chapters that compare people's perceptions of their health and lifestyle with objective measures collected in the main SHeS interview. It then looks at the limitations of knowledge and motivations in fostering behaviour change, and concludes with a brief discussion of the findings to emerge from the multi-variate analysis exploring factors associated with motivation to adopt positive health behaviours.

Section 10.3 discusses the strengths and limitations of the Trans-Theoretical Model. The implications for policy making and practice are discussed in Section 10.4.

10.2 MAIN THEMES EMERGING FROM KAM 2008-2011

10.2.1 The gaps between perceptions and behaviour

The extent to which people's perceptions of their behaviour are aligned with their actual behaviours have been explored in relation to drinking, diet, physical activity and weight (Chapters 4, 6, 7 and 8). The findings across the chapters, consistently pointed to an apparent gap between how people perceive their health or behaviour and their actual behaviour (as measured in the main SHeS interview).

Just 5% of adults described themselves as a heavy or very heavy drinker yet 42% drank outwith the government's guidelines on daily and weekly consumption. Drinkers exceeding the guidelines had the least accurate perceptions of how much they drank.

People had very positive assessments of their diets, with around nine in ten describing the food they ate as fairly or very healthy. Yet fruit and vegetable consumption, a key component of a healthy diet, was low with just 22% eating the recommended five or more portions per day and around two-thirds of those eating no fruit and vegetables viewed their diet as healthy.

While the gap between people's perceptions of how active they were and actual activity levels was smaller than the gap seen in relation to drinking and diet, it was still sizeable. More than five in ten adults thought they did enough exercise to stay healthy but only around four in ten were active at the recommended levels. While a significant proportion of the least active group recognised that they weren't active enough, around a third incorrectly thought they did enough activity to stay healthy.

Perceptions of weight were more closely aligned to behaviours, with 55% of adults accurately describing their weight. However, four in ten under-estimated their weight and those with an unhealthy BMI were least likely to assess their weight correctly.

All self-reported measures are prone to error. For example there has long been concern that population surveys such as SHeS underestimate alcohol consumption and potentially overestimate activity levels. It is therefore possible that the gaps between perceptions and behaviour, knowledge and behaviour, and recent behaviour change and healthy outcomes presented here might be underestimates of the true situation in the population. Even so, estimating the extent of these kinds of gaps is only part of the story, the challenge for policy makers and organisations such as NHS Health Scotland is to make sense of the fact that such gaps exist and design policies and interventions to narrow them.

10.2.2 The limits of knowledge

Public awareness of key health messages varied across the topics explored. Recognition of the five-a-day recommendation on fruit and vegetable consumption is very high. Yet, only one in four people know how much physical activity they are advised to do to stay healthy. Knowledge of the key health messages on alcohol consumption is even lower with fewer than one in five aware of the recommended maximum daily units for their sex and an even smaller proportion are aware of the advice to have at least two-alcohol free days per week.

The health communications approach to behaviour change recognises knowledge as an important influence on behaviour. While it is not possible to determine the causal links between knowledge and behaviour on a cross-sectional study, there is very little evidence from the KAM module that knowledge of health messages is associated with better health behaviour.

For example, it appears that knowledge of the daily alcohol limits was actually greatest among those that drank outwith the government guidelines. Furthermore, the fact that only a quarter of people active at the recommended level correctly identified the level of activity advised suggests a weak association exists between knowledge and behaviour for this aspect. While people aware of the five-a-day fruit and vegetable portion recommendations were more likely to meet them, 82% of people falling short of them still knew the advice. This suggests that further gains in knowledge might make little difference to efforts to improve diet.

It is, of course, possible that knowledge and behaviour are strongly correlated, but that the module did not explore all possible types of knowledge. For example, awareness of the five a day message is widespread but what is less clear is whether people know what counts as a portion. Similarly, people are aware of the concept of measuring alcohol in units but knowledge of how many units common alcohol

measures contain was not assessed in this module. It is also possible to know about health messages but not believe them, or to have other competing types of knowledge or beliefs. This was not assessed in the KAM module.

It is clear that there are limits to how much knowledge of messages – on its own – can influence behaviour in the absence of other structural or motivational changes. Taking the example of barriers to eating more healthily, not knowing what changes to make was low down the list of barriers people mentioned, behind concerns about cost, and far behind the most common barrier – lack of willpower.

10.2.3 The limits of motivations

Having established that knowledge was poorly associated with health behaviour, it also appears that even among people who were the most motivated to improve their health, actual success was pretty rare. Chapter 3 looked at the kinds of steps people felt they could take to improve their health. A clear majority of smokers (74%) who said they could improve their health mentioned stopping smoking. Similarly, of those who thought they could improve their health, a majority of hazardous drinkers (65%), obese people (69%), those with very low activity levels (62%), and people who had not eaten any fruit or vegetables on the previous day (61%) mentioned steps that would address each of these unhealthy behaviours or conditions. However, when asked about actual steps recently taken to improve health, such as cutting down on drinking, increasing activity levels or stopping smoking, chapters 4 to 8 show that the majority of people who say they have managed to maintain a change in their behaviour in the past year were not adhering to health recommendations. For example, the majority of people who had maintained a reduction in their alcohol consumption still drank more than is recommended, and among those who had successfully increased their level of physical activity recently, around half still needed to take some further action to meet the recommended level.

10.2.4 *Factors associated with making and maintaining positive lifestyle changes*

Multi-variate logistic regression analysis was carried out to better understand people's motivations towards the various health behaviours discussed in the report. The analysis established the independent effect of a range of factors on a person's motivation to adopt and maintain positive behaviour. A person's motivation or readiness to adopt the health behaviours covered in the module was determined by using their questionnaire answers to classify them according to DiClemente and Proschaska's Stages of Change model. The multi-variate models examined factors associated with being in the maintenance or long-term maintenance stages of change; that is those who successfully took positive steps in the twelve months prior to interview (maintenance) or who didn't take or plan to take any positive steps but who already met

the relevant behavioural target or recommendation (long-term maintenance).

The analysis was carried out for five of the topics discussed in this report: alcohol consumption, smoking, diet, physical activity and weight. For each of the five behaviours examined, sex and age emerged as significant factors relating to successfully adopting or maintaining positive behaviour. In addition, household income was significantly associated with motivations towards both alcohol consumption and physical activity and area deprivation was related both to how motivated people were to cut down on smoking and increase physical activity levels.

With the exception of motivation to be more physically active, women were more likely than men to successfully adopt or maintain positive behaviour on the topics examined.

The exact nature of the relationship between age and motivation towards positive behaviour varied slightly depending on the topic being explored. Generally, when compared with 16-34 year olds, older people tended to have higher odds of being in maintenance/long-term maintenance with regards drinking, smoking and eating healthily but lower odds of successfully adopting or maintaining increased activity levels or controlling weight.

There is also a significant relationship between how educated a person is and their motivation to adopt particular positive health behaviours. With the exception of drinking behaviour, the odds of successfully adopting or maintaining positive behaviour were greatest for those with the highest qualifications (educated to degree level or above). With regards drinking behaviour, it was those with no qualifications that had the highest odds of being in the maintenance/ long-term maintenance stages of change.

Presence of multiple health risks was also significantly related to an individual's motivation to adopt particular positive behaviours. With the exception of smoking, the odds of being in maintenance/ long-term maintenance decreased the greater the number of other risk factors a person had.

Household income is associated both with motivation to reduce alcohol consumption and readiness to be more physically active but the nature of the relationship was different for both. With regards drinking behaviour, odds of successfully adopting or maintaining reduced consumption increased as household income decreased. Whereas, for physical activity, it was those with the lowest household income that were least likely to be in maintenance/ long-term maintenance.

These findings reaffirm the importance of considering wider structural contexts when trying to understand health behaviours. Personal attributes and behaviours should be embedded within the broad context

of the social, economic and cultural environment. Policies and public education campaigns should focus on the structural and individual influences on behaviour and consider the wider socio-economic inequalities if they are to be successful.

10.3 CRITIQUE OF THE TRANS-THEORETICAL MODEL

This section discusses the strengths and limitations of the Trans-Theoretical Model (TTM) specifically in relation to the findings from the KAM module between 2008 and 2011.

The aim of psychological models of behaviour change is to explain, predict and facilitate behaviour change. The TTM is designed to directly facilitate this by explaining behaviour change in terms of distinct stages and in terms of possible interventions to help move individuals from one stage to another. It explores the association between knowledge, attitudes and motivation as predictors of behaviour change (see Chapter 1 for background to TTM).

This section:

- looks at trends in knowledge, motivation and outcome over time from the KAM survey between 2008 and 2011 and explores the connections between knowledge, motivation and behaviour
- explores whether knowledge is a good predictor of motivation and in turn whether motivation is a good predictor of the outcome
- considers the importance of socioeconomic factors for motivation and successful outcomes in motivated individuals.

The intended focus of the KAM report was to look at the TTM model in relation to predicting behaviour change from knowledge and motivation. This critique of the TTM will not consider the effectiveness of potential therapeutic aspects of some TTM processes of change or explore the potentially disempowering effect of a knowledge focused intervention in the context of major structural barriers.

10.3.1 Association between knowledge, attitudes and motivation

The TTM focuses primarily on knowledge, attitudes and motivations as levers for effecting behavioural change. Looking at trends over time, the KAM survey consistently found a lack of association between behaviour change and levels of knowledge and motivation in all health behaviours which were explored.

Time-trend data between 2008 and 2011 showed that knowledge was not a good predictor of motivation. For example, in Chapter 6: Diet, high levels of knowledge of the 'five-a-day' recommendation in the population was not associated with high levels of motivation to change behaviour (taking action to bring BMI into a healthy range), which remained low.

The KAM module also showed that between 2008 and 2011, motivation was similarly not shown to be a good predictor of actual behaviour change. For example, in Chapter 7: Weight, despite increasing levels of knowledge on the health risks associated with overweight and obesity there was no related positive change in behaviour (having a BMI within the healthy range) or motivation to change behaviour over this time period.

This suggests that population approaches intended to change behaviour primarily through increasing levels of knowledge within the population will be met with limited success.

10.3.2 Behaviour change and the wider socio-economic context

As discussed in Section 10.2.4, the contextual analysis that KAM allowed may help to shed some light on the importance of wider socio-economic factors in predicting behaviour change and also highlights an important limitation of the TTM in terms of its exclusion of the wider socio-economic context within the model.

It is not possible to discuss possible alternative models in detail within the limits of this report. However some consideration of other models that may potentially be used to mitigate the limitations of the TTM highlighted above will be considered briefly.

Models based on a multi-dimensional approach to understanding and changing health behaviours such as the "Eco-social theory of disease distribution"[1] may be useful in considering how population health is limited by inequalities in income, wealth and power whilst simultaneously considering factors at the level of the individual. The TTM has been criticised for the ordered linearity of its six stages of behaviour change and contrasting this with a model that considers the interplay between exposure to risk factors for negative behaviours, susceptibility and resistance to such factors may help to give a more realistic picture of the wide range of influences that may be important in predicting behaviour change.[1]

10.4 POLICY IMPLICATIONS

Individuals may achieve positive behaviour change by increasing their knowledge about what is healthy, and by becoming motivated to change their behaviours. However, it is clear that most people already know which behaviours are healthy and what action to take to improve their health, although knowledge about the specific recommendations is less demonstrable.

At population level, there is little to be gained from a focus on improving the knowledge of which behaviours are healthy. Instead, the health of the population is more likely to be enhanced by changing the socio-economic context to facilitate positive behaviour change. This should also be the focus in relation to reducing health inequalities.[2]

References and notes

[1]   Krieger, N (2011) Epidemiology and the People's Health: Theory and Context. Oxford University Press

[2]   Geronimus, A. T. (2000). "To Mitigate, Resist, or Undo: Addressing Structural Influences on the Health of Urban Populations." American Journal of Public Health 90:867-872.