

GROWING UP IN SCOTLAND: Family and school influences on children's social and emotional well-being



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GROWING UP IN SCOTLAND: Family and school influences on children's social and emotional well-being

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Responsibility for the opinions expressed in this report, and for all interpretation of the data, lies solely with the authors.

CONTENTS

ACKNOWLEDGEMENTS	iv
EXECUTIVE SUMMARY	4
1 INTRODUCTION	6
1.1 Understanding different aspects of social and emotional well-being	7
1.2 The Growing Up in Scotland Study	8
1.3 Previous research on children's social and emotional well-being using the Growing Up in Scotland study	9
1.4 Understanding children's subjective well-being	9
1.5 Current study: research aims	11
2 METHODS	12
2.1 Analysis data set	12
2.2 Main outcome measures	12
2.2.1 High behavioural and emotional difficulties	12
2.2.2 Low life satisfaction	12
2.3 Potential correlates of child social and emotional well-being	13
3 RESULTS	15
3.1 Prevalence of low child social and emotional well-being among seven year-olds in the GUS sample	15
3.2 Univariate associations between potential risk factors and low child social and emotional well-being	16
3.2.1 Child characteristics associated with low child social and emotional well-being	16
3.2.2 Maternal and household characteristics associated with low child social and emotional well-being	17
3.2.3 Household material deprivation and low child well-being	20
3.2.4 Life events and low child well-being	21
3.2.5 Parenting associated with low child social and emotional well-being	22
3.2.6 School experiences and low child well-being	24
3.2.7 Leisure activities and friendships associated with low child social and emotional well-being	25
3.3 Materialistic values	27

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

3.4	Multivariable associations between risk factors and low child well-being	29
3.4.1	Multivariable model of high behavioural and emotional difficulties	29
3.4.2	Multivariable model of low life satisfaction	31
4	CONCLUSIONS	33
4.1	Summary of findings	33
4.1.1	Factors associated with high difficulties and low life satisfaction	33
4.1.2	Additional measures associated with high difficulties score	34
4.1.3	Additional measures associated with low life satisfaction	34
4.1.4	Measures not associated with either outcome	35
4.2	Child characteristics and social and emotional well-being	35
4.2.1	Child characteristics and children's behavioural and emotional problems	35
4.2.2	Child characteristics and children's low life satisfaction	36
4.3	Parenting and child social and emotional well-being	36
4.3.1	Parenting and children's behavioural and emotional problems	36
4.3.2	Parenting and children's low life satisfaction	37
4.4	Family stressors and child social and emotional well-being	38
4.4.1	Family stressors and children's behavioural and emotional problems	38
4.4.2	Family stressors and children's low life satisfaction	39
4.5	Developmental concerns, school experiences and friendships: associations with child social and emotional well-being	40
4.5.1	Associations with behavioural and emotional problems	40
4.5.2	Associations with low life satisfaction	41
4.6	Leisure activities and child social and emotional well-being	42
4.7	Materialistic attitudes and child social and emotional well-being	42
4.8	Study limitations and strengths	42
4.9	Conclusions and future directions	43
4.10	Policy implications	44
5	REFERENCES	47
6	APPENDICES	57
6.1	Description of Items used in the Strength and Difficulties Questionnaire (SDQ)	57
6.2	Description of measures used to explore correlates of child social and emotional well-being	58
6.2.1	General health of the child and mother	58
6.2.2	Child overweight or obesity	58
6.2.3	Child development	58
6.2.4	Sleep duration and pattern	59

6.2.5	Material deprivation	59
6.2.6	Life events	60
6.2.7	Positive parenting	60
6.2.8	Warmth of the mother-child relationship	61
6.2.9	Conflict in the mother-child relationship	62
6.2.10	Smacking	62
6.2.11	Parental knowledge	63
6.2.12	Regular bedtime	63
6.2.13	Difficulties with school work	64
6.2.14	School emotional engagement (liking school)	64
6.2.15	Media use	65
6.2.16	Play	65
6.2.17	Extra-curricular organised leisure activities	67
6.2.18	Friendship quality	68
6.2.19	Happiness at school playtimes	68
6.2.20	Materialistic values	69
6.3	Results: univariate analyses of potential risk factors for low child social and emotional well-being	69
6.4	Results: multivariate analyses of potential risk factors for low child social and emotional well-being	76
6.4.1	Treatment of missing data	76
6.4.2	Other modelling issues	76
6.4.3	Guide to tables	76

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Executive summary

This report investigated family and school influences on seven year-old children's social and emotional well-being.

Social and emotional well-being is a multidimensional concept linking aspects of both social and psychological functioning, and is an important component of overall well-being.

Research emphasis on children's mental health problems has sometimes neglected consideration of the more positive aspects of children's lives. It has also overlooked children's own views of their happiness, or subjective well-being. Little is known about the importance of relationships, material and other influences on subjective well-being in children younger than 10 years old.

The study explored possible influences on children's behavioural and emotional difficulties, and on their subjective well-being. It used data collected from mothers and children from 3,279 families in the first birth cohort of the Growing up in Scotland Study, interviewed in 2012/13 when the child was seven years old. Mothers were asked about the child's behavioural and emotional problems, and children were asked about their life satisfaction. 11% of children were classed as having high levels of behavioural and emotional problems, while 25% were classed as having low life satisfaction. There was some degree of overlap, with 4% having both high levels of behavioural and emotional problems, and low life satisfaction. Analyses explored the role of child, maternal and household characteristics, parenting behaviours, school experiences, friendships, leisure activities, and materialistic attitudes on both child mental health (high levels of behavioural and emotional problems) and low subjective well-being (low life satisfaction).

Several factors were associated with both child mental health problems *and* low subjective well-being. These factors included greater mother-child conflict and lower parental knowledge of the child's activities or relationships when not at school; child difficulties adjusting to the learning and social environment at primary school; and the child having poorer quality friendships with other children. These findings support the idea that social relationships, involving parents, teachers and friends, are of key importance for young children's social and emotional well-being. In contrast, economic factors and some other aspects of family life (including family structure and the child's leisure activities) did not seem clearly associated with either measure of social and emotional well-being, after allowing for other influences.

The study also suggested that influences on children's subjective well-being may differ somewhat from influences that are important for mental health. Family stressors appeared important for child mental health problems. These seem to relate to ill-health and low psychological or social resources, and are often associated with deprivation. They included poor child health and developmental problems, low maternal education and poor maternal health, family mental health/substance use problems and low mother-child warmth. These factors were not clearly associated with subjective well-being. In contrast, factors linked with experiencing negative affect (such as worry, pain or dislike) or lack of positive affect (such as

joy or pride) seemed important for low life satisfaction among young children. They included experiencing a recent death, illness or accident in the family, and less positive parenting (positive reinforcement of good behaviour and involvement in the child's activities). These factors did not clearly differentiate children with high levels of behavioural and emotional problems.

Further research is required to investigate influences on social and emotional well-being from earlier in the children's lives, particularly for the less studied subjective well-being. Future sweeps of data collection will also allow investigation of consequences of low social and emotional well-being for children's later development. There remain uncertainties about possible causal processes underlying the associations found in this study. Nonetheless, the findings indicate that a more holistic approach to children's social and emotional well-being, addressing its various different components, needs to recognise that these components may be influenced by overlapping, but also distinct, sets of factors. The findings suggest interventions to promote social and emotional well-being could be based on both the family and school context.

INTRODUCTION

This report investigates family and school influences on seven year-old children's social and emotional well-being. Children's social and emotional well-being is a multidimensional concept linking aspects of both social and psychological functioning. According to a recent National Institute for Health and Clinical Excellence local government briefing (National Institute for Health and Clinical Excellence, 2013), children with high social and emotional well-being will:

- be happy and confident, and not anxious or depressed;
- have the ability to be autonomous, problem-solve, manage emotions, experience empathy, be resilient and attentive;
- have good relationships with others, and no behavioural problems such as being disruptive, violent or a bully.

These feelings and capabilities are recognised as being important in themselves, and as predictive of children's future health, risk behaviours and achievement. They include many positive attributes, as well as the absence of emotional and behavioural difficulties.

Social and emotional well-being is an important component of children's overall well-being, which forms the focus of the Scottish Government's approach to child welfare: *Getting it Right for Every Child* (GIRFEC, Scottish Executive, 2005). This policy recognises eight domains of overall well-being: safe, healthy, achieving, nurtured, active, respected, responsible and included. The domains are based on the principles enshrined in the United Nations Convention on the Rights of the Child (Aldgate, 2013) and in turn are related to Scottish Government National Outcomes concerned with improving the health and life chances of children and young people. Child overall well-being is also central to two social frameworks developed by the Scottish Government, the *Early Years Framework* and *Equally Well* (Scottish Government, 2008; Scottish Government, 2008), which both recognise the importance of early life factors in shaping later physical and mental health and health inequalities. The Scottish Government Child Poverty Strategy (Scottish Government, 2011) stressed that material well-being and children's social and emotional well-being often go hand in hand.

The Children and Young People (Scotland) Act 2014 takes GIRFEC forward, placing a legal obligation on Ministers and public bodies to consider, promote and report on children's rights; and extending powers given to the Commissioner for Children and Young People. The Act requires public bodies to prepare and report on Children's Services Plans, and to give each child a Named Person as the first point of contact to address concerns about well-being in conjunction with other services. This person will normally be a health visitor up to school age, conducting assessments following Hall 4 guidance (Scottish Executive, 2005; NHS Scotland, 2011). School-age children will have a Named Person who is a head, deputy head or guidance teacher. Where there is concern about well-being of an individual child, services are required to formulate a Child's Plan defining needs and how these can be met.

Scottish Government policies specifically targeted at social and emotional well-being are contained in the framework document on the prevention, treatment and care of children and young people's mental health problems (Scottish Executive, 2005). Child and adolescent mental health was identified as a "key change area" in the Mental Health Strategy for Scotland 2011-2015 (Scottish Government, 2012), with detailed improvements such as better response to conduct disorders and attachment issues. In schools, under Curriculum for Excellence, all staff have a responsibility for developing and promoting the health and well-being of all children and young people (NHS Health Scotland, 2011).

Scottish national indicators of children's and young people's mental health and accompanying contextual factors are important for assessing and monitoring trends in mental health, and were developed following the Towards a Mentally Flourishing Scotland: Policy and Action Plan 2009–2011 (Donnelley, 2009). Recently published information (Tod, Parkinson, & McCartney, 2013) suggests stability or small overall improvement in these indicators in recent years, while showing consistently worse outcomes for children from families living in more deprived areas. Gender differences in many indicators were also apparent. Behavioural problems were more common for primary school-age boys, but emotional problems are more common among secondary school-age girls.

The next section in this Introduction provides a brief guide to the two areas of social and emotional well-being covered in the current study: mental health problems and subjective well-being. This is followed by sections describing the Growing up in Scotland study (GUS) and reviewing existing GUS research on children's behavioural and emotional problems. As subjective well-being is a new research area for the Growing up in Scotland study, we next include a section outlining approaches to understanding children's subjective well-being. The last section sets out the research aims of the current study.

1.1 Understanding different aspects of social and emotional well-being

Research emphasis on children's mental health problems has sometimes neglected consideration of the more positive aspects of children's lives. In addition, there is growing recognition of the importance of understanding children's own feelings of happiness, or subjective well-being (Ben-Arieh, 2005), despite some arguments against taking children's own reports of happiness or unhappiness at face value (Bradshaw, Martorano, Natali, & de Neubourg, 2013). These include suggestions that feelings of happiness or unhappiness may be particularly transitory in children. In addition, happiness may not be a good reflection of children's circumstances since their capacity to adapt and natural resilience may mean that they feel happy, regardless of their situation. Alternatively, children may develop unrealistic materialistic expectations, fuelled by media pressures including the cult of the celebrity lifestyle. As a consequence, children may feel unhappy even when they are relatively well provided for.

In practice, it has been found that child-reported life satisfaction measures do appear to have validity. Children's views are correlated with other measures of their well-being, including parent-reported views, and are stable over time while being sensitive to changes in circumstances (Gilman & Huebner, 2003). Validity has also been established for different

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

cultures (Park, Huebner, Laughlin, Valois, & Gilman, 2004). While adaptation to circumstances and natural resilience may lie behind the common finding that most children do report being happy, it is important to find out what circumstances cause unhappiness in a minority of children.

To some extent, children's mental health problems and subjective well-being are likely to be interrelated: studies on teenagers have shown that mental health problems may depress later reports of subjective well-being (Lyons, Huebner, Hills, & Van Horn, 2013), while conversely high subjective well-being may buffer teenagers from the effects of stressful experiences, so that they are less likely to develop mental health problems (Suldo & Huebner, 2004) or engage in risk behaviours (Sun & Shek, 2013). However, many children may express unhappiness or dissatisfaction with their life without showing psychological symptoms in the form of behavioural and emotional problems (Huebner, 2004). This suggests that influences on subjective well-being may differ somewhat from those important for mental health. In investigating factors associated with children's social and emotional well-being, this study will therefore focus on children's subjective well-being in addition to behavioural and emotional problems.

1.2 The Growing Up in Scotland Study

Growing Up in Scotland (GUS) is a large-scale longitudinal research project aimed at tracking the lives of several cohorts of Scottish children from the early years, through childhood and beyond. It aims to provide Scottish data on the following aspects of children's development:

- Cognitive, social, emotional and behavioural development
- Physical and mental health and wellbeing
- Childcare, education and employment
- Home, family, community and social networks
- Involvement in offending and risky behaviour

GUS is funded by the Scottish Government and is carried out by ScotCen Social Research in collaboration with the Centre for Research on Families and Relationships (CRFR) at the University of Edinburgh and the CSO/MRC Social and Public Health Sciences Unit at Glasgow University.

GUS comprises three cohorts of children: one child cohort and two birth cohorts. The child cohort comprised around 3000 children born between June 2002 and May 2003. Four sweeps of data were collected from families from when children were aged just under 3 years to just under 6 years. The two birth cohorts both follow families from when the child was aged 10 months. The first birth cohort consists of around 5000 children born between June 2004 and May 2005, while the second consists of around 6000 children born between March 2010 and February 2011.

1.3 Previous research on children's social and emotional well-being using the Growing Up in Scotland study

Existing research on child social and emotional well-being within the Growing up in Scotland study has been based on the Strengths and Difficulties Questionnaire (Goodman, 1997; Goodman, 2001), which assesses children's behavioural and emotional difficulties. To date, information on difficulties has been obtained from parents (in most cases, the child's mother). Both cross-sectional and prospective (longitudinal) studies have been conducted. In cross-sectional studies, it is difficult to rule out the possibility of reverse causation (for example, if a child's behavioural problems elicit particular forms of parenting, rather than parenting being the cause of the child's problems). Associations found between parenting and behavioural problems measured at a later time point in prospective (longitudinal) studies allow us to be more confident about the likely direction of causation. However, associations found in prospective studies do not in themselves demonstrate causal influences, as there may be other confounding factors.

In the GUS child cohort, information collected over three sweeps (at approximate ages 3, 4 and 5) suggested that many problems at age 5 were already apparent by age 3 (Bradshaw & Tipping, 2010). At age 5, increased risk of difficulties was associated with child characteristics (such as poorer health from age 2 to 5), family characteristics (including low household income), and some parenting behaviours including smacking and fewer joint parent-child activities that were measured at earlier sweeps. A study of persistent conduct problems in the child cohort over the 3-5 year age span also underlined the likely role of poor child health and language difficulties, family disadvantage, and aspects of parenting measured at earlier sweeps including smacking (Wilson, Bradshaw, Tipping, Henderson, Der et al., 2013).

In the first GUS birth cohort, information has been collected on behavioural and emotional difficulties from 4 years of age. At age 4, it was apparent that the risk of difficulties increased with lower household income, lower parental occupational class and higher area deprivation (Bromley and Cunningham-Burley 2010). In addition, increased duration of poverty and mother's poor mental health were both associated with a higher risk of child difficulties (Barnes, Chanfreau, & Tomaszewski, 2010; Marryat & Martin, 2010). When the birth cohort children were 5 years old, associations between parenting and overall behavioural and emotional difficulties were explored in more detail in a cross-sectional study (Parkes & Wight, 2011). This found that low warmth and high conflict in the mother-child relationship, use of smacking and lower parental control were all associated with high levels of difficulty, after allowing for other child and family characteristics. A recent prospective study (Scott, Lewsey, Thompson, & Wilson, 2013) also supported the link between smacking at two years and increased risk of child behavioural and emotional difficulties by age 5.

1.4 Understanding children's subjective well-being

The Growing up in Scotland study's first measures of children's subjective (i.e. self-reported) well-being were made at sweep 7, when children from the first birth cohort were seven years old. To provide some background to this new area of data collection, this section briefly considers different approaches to the study of children's subjective well-being.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Subjective well-being has often been measured as part of attempts to assess children's overall well-being, using a series of macro and micro-level indicators to cover various other domains of children's lives: typically, these cover material situation, housing, health, education, children's relationships, civic participation, and risk and safety (Fernandes, Mendes, & Teixeira, 2012). The UNICEF report on child well-being in rich countries is a well-known example of this type of study (UNICEF Office of Research, 2013). Here, subjective well-being was measured by asking 11-15 year olds in each country about life satisfaction¹ using the Cantril ladder, on a scale of 0 to 11. The UK came mid-way in the rankings for subjective well-being (14th out of 29 countries listed). Detailed information for Scottish 11-15 year-olds is available in a separate report (Currie, Levin, Kirby, Currie, van der Sluijs et al., 2011). It suggests that if Scotland had been shown separately in the UNICEF rankings, it would have appeared slightly above the UK as a whole. A recent study pointed to the salience of objectively-measured domains used in the UNICEF report for subjective well-being (Bradshaw et al., 2013). It showed that 11-15 year olds' subjective well-being across rich countries correlated strongly with indexes of material well-being, health and safety, health and risk behaviours, education and housing and the environment furnished using objective macro-level data.

While these findings lend support to the relevance of multiple domains for children's subjective well-being, the emphasis on adult-defined domains coupled with over-reliance on macro- rather than individual- level information may mean that we lack a good understanding of low subjective well-being in children. Two research approaches are helping to address these problems. One strand of research has attempted to find out what children themselves think is important for their own well-being, with several qualitative studies grouping children's own views into alternative sets of "domains". In line with adults' views, children also state the importance of relationships (especially within the family), appropriate behaviour towards others, material well-being, security and school achievement. In addition, this research suggests some areas not usually well represented in adult-oriented lists, such as recreational activities and pets (Eloff, 2008; Chaplin, 2009), special events such as birthday celebrations and skills or talents such as sport or arts (Thoilliez, 2011); as well as children's need for a positive sense of self and autonomy (Thoilliez, 2011; Fattore, Mason, & Watson, 2012).

A second strand of research is exploring correlates of children's life satisfaction using individual-level quantitative data. The present study aims to contribute to this strand. In the UK, several national surveys have recently included questions on subjective well-being among children aged 10 and older. In current research, however, there remains some uncertainty over the relative contributions of material deprivation and other factors related to family life, friends and school. To date, there is very little known about factors associated with subjective well-being in children younger than about 10 years: although the views of children younger than this age have been included with those of older children, they have not usually been evaluated in their own right. A notable exception has been research on nine-year olds using the Growing up in Ireland study (McAuley & Layte, 2012). This found only a small effect of socio-demographic factors on children's subjective well-being. Aspects of family life were more important, including conflict in the parent-child relationship, low parental self-efficacy and parental depression.

¹ Life satisfaction is viewed as a cognitive component of subjective well-being, in contrast to an affective component (positive or negative emotions).

1.5 Current study: research aims

While continuing the pattern established in previous sweeps of asking parents about their child's behavioural and emotional difficulties, GUS birth cohort 1 sweep 7 also collected information from children on subjective well-being by asking about their life satisfaction. This provides a rare opportunity, at this comparatively young age, to assess two aspects of children's social and emotional well-being. This will allow us to examine the extent to which different components of social and emotional well-being are influenced by the same factors, or depend on different sets of factors.

Now that children in the first birth cohort have reached the age of seven years, there is a need to take account of possible influences on social and emotional well-being originating from both within and beyond the family. The seventh sweep of data collection has gathered detailed information on parenting and school experiences, including children's own views of their parents, friends and school.

This analysis is cross-sectional in design, using measurements gathered at sweep 7 to investigate how various child, maternal and household characteristics, parenting behaviours, school experiences, friendships, leisure activities, and materialistic attitudes are associated both with children's behavioural and emotional difficulties, and with children's subjective well-being.

This chapter provides information on the analysis data set, the main outcome measures used to assess seven year-olds' social and emotional well-being and the main types of possible influences on well-being explored in this study.

2.1 Analysis data set

Sweep 7 of GUS first birth cohort collected data from the child and his/her “main carer” during 2012/13 when the child was seven years 10 months old. At this sweep 3456 families were interviewed, representing 66% of cases achieved at sweep 1, with 3371 children (98% of families interviewed) completing a child questionnaire, self-administered using computers. The analysis data set was restricted to 3279 families where both the child and mother supplied information and the child was a singleton birth² (95% of families interviewed at sweep 7).

Data analysis was performed using Stata SE 12.1 (StataCorp, Texas) and used the survey function to take account of the complex survey design and survey weights. Over the course of data collection on GUS birth cohort, survey attrition has been at a higher rate among more disadvantaged families. Survey weights helped to counteract the effect of this differential attrition, and make it more likely that the findings are generalisable to the Scottish population as a whole.

2.2 Main outcome measures

The two main outcome measures in this study were high behavioural and emotional difficulties, and low life satisfaction. Both were assessed at sweep 7.

2.2.1 High behavioural and emotional difficulties

Difficulties were evaluated using mother's responses to the Strengths and Difficulties Questionnaire (Goodman, 1997), a widely-used survey instrument assessing conduct problems, hyperactivity/inattention, emotional problems and peer relationship problems. There were 20 items in total (5 for each subscale), with responses on a 3-point scale (0) not true (1) somewhat true (2) certainly true. Following recommended guidelines, a cut-off of 15 or more was applied to indicate “high difficulties” (abnormal, or borderline abnormal, levels of total difficulties). Details of the items used are supplied in Appendix 6.1.

2.2.2 Low life satisfaction

There have been two main approaches to measuring children's life satisfaction: one is to ask about well-being in a series of domains (for example, measures such as the Multidimensional

² The restriction to singleton births means that twins and higher order multiple births were excluded.

Students' Life Satisfaction Scale (Huebner, 1994), which has questions about family, friends, school, self and the living environment). A second approach is to ask about children's overall or global life satisfaction. The Growing Up in Scotland study used the second approach, which has the advantage of letting children take account of whatever aspects of their lives are most salient for them. Life satisfaction was reported by children using a 5-item scale of global satisfaction, adapted from Huebner's 9-item Student Life Satisfaction Scale (Huebner, 1991; Huebner & Alderman, 1993). This scale was developed for use with children aged 7-14. Numerous studies have demonstrated the validity of the scale (Proctor, Linley, & Maltby, 2009): it is correlated with alternative measures of life satisfaction, while being correlated as expected with related constructs (such as a positive association with self-esteem, but negative associations with anxiety and depression).

As part of the GUS interview, children were asked:

... thinking more generally about your life:

- Do you feel that your life is going well?
- Do you wish your life was different?
- Do you feel that your life is just right?
- Do you feel you have what you want in life?
- Do you feel you have a good life?

Responses were on a 4-point scale: (1) never (2) sometimes (3) often (4) always. The 5 items showed good internal reliability (Cronbach alpha=0.71). Mean scores were calculated, after reversing the scores for the second item and standardizing scores. "Low life satisfaction" was defined as the least favourable 25% of scores, which were contrasted with the remainder. The raw mean score for the low life satisfaction group was 2.5, indicating that, on average, these children gave one of the two less positive responses to the items.

2.3 Potential correlates of child social and emotional well-being

Various potential correlates of child social and emotional well-being were explored. Like the main outcomes, these were assessed at sweep 7. Details of measures are provided in Appendix 6.2. They comprise measures from the following main areas:

- Child characteristics.

These included gender, birth order, number of siblings in the household at the time of the interview; health and body mass index (BMI) status, developmental concerns regarding literacy and other matters, and sleep patterns.

- Maternal and household characteristics

These included maternal ethnic group (White/minority), highest education level, employment status; family type, equalised³ household income and material deprivation, area deprivation and urban-rural location.

³ Equalisation used the McClements scale to take account of household size and composition.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

- Life events

These included significant events in the child's life in the previous two years, such as illness or death of a family member, a parent losing a job or the family moving house.

- Parenting

This covered positive parenting (reinforcement of appropriate behaviour and involvement with the child's activities), warmth and conflict in the parent-child relationship, smacking, parental knowledge of the child's activities and regular bedtime. Note that when we refer to "parenting", information collected from parents is confined to information collected from the child's mother. However, when information has been collected from the child about parenting, this relates to both parents.

- School experiences

These covered difficulties with school work and emotional engagement (liking school).

- Friendships and leisure activities

This included the quality of friendships, happiness at school playtimes, media use, unstructured play at weekends, and participation in organized extra-curricular leisure activities (such as Brownies or swimming lessons).

- Materialistic values

These assessed whether the child valued "expensive things".

This Chapter describes the prevalence of low social and emotional well-being among seven year-old GUS children, and considers how the two different measures of well-being (high total difficulties and low life satisfaction) were associated with one another. It then proceeds to investigate factors associated with low social and emotional well-being. This analysis of potential risk factors is divided into two parts. First, we report on univariate (simple) associations between factors and each of the two well-being outcomes. Tables in the first part show the percentages of children with each of the indicators of low well-being, according to potential risk factors. An asterisk system has been used to indicate statistical significance levels, or the probability p of a non-zero difference where *denotes an association that can be considered statistically significant at the usual threshold in social science ($p < 0.05$), ** denotes a stronger level of significance ($p < 0.01$), and *** denotes a stronger level still ($p < 0.001$). Only factors with a statistically significant association with one or both well-being outcomes have been shown in these Tables. A full set of univariate associations has been supplied in Appendix 6.3.

The second part of the analysis involves multivariable models, where the simultaneous influence of a number of different factors can be assessed. Here, all factors with a statistically significant ($p < 0.05$ level) univariate association with the outcome in question are entered into multivariable models.

3.1 Prevalence of low child social and emotional well-being among seven year-olds in the GUS sample

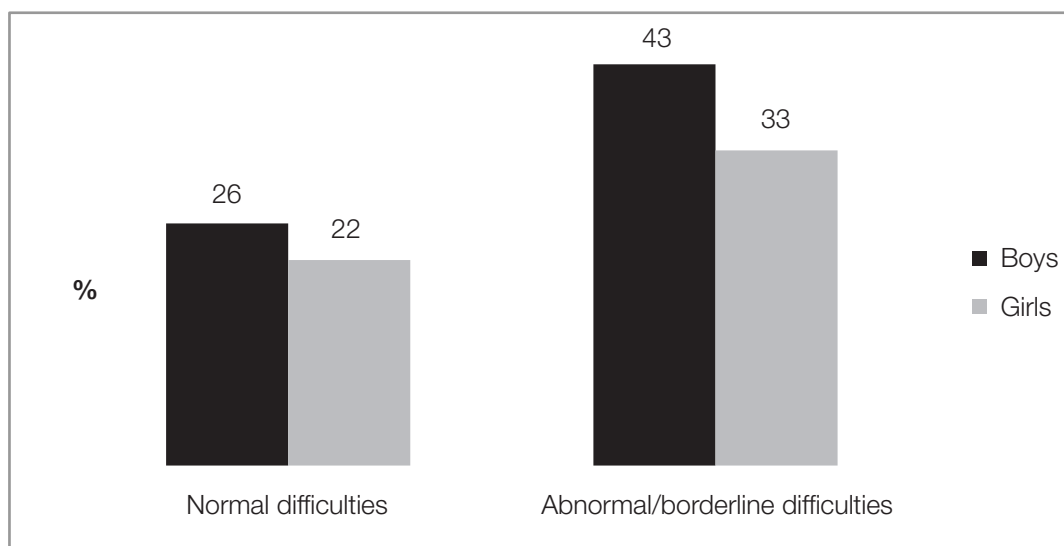
Across the sample, 11% of seven year-olds were classified as having high levels of behavioural and emotional difficulties and 25% as having low life satisfaction. Children with high levels of difficulty were more likely to report low life satisfaction (39%) than those with normal levels (24%), $p < 0.001$. Figure 3.1 shows that this association held for boys ($p < 0.001$) and girls ($p < 0.05$). This Figure suggests that high levels of difficulty might affect boys' life satisfaction more than girls, but the apparent gender difference was not statistically significant. Further analysis showed associations between each of the subscales of the total difficulties score (conduct problems, emotional problems, hyperactivity/inattention, peer relationship problems) and low life satisfaction appeared to be of similar magnitude (details not shown here).

Despite this overlap between the two aspects of social and emotional well-being, only 4% of children experienced both high behavioural and emotional problems AND low life satisfaction. 21% of the sample were classified as having low life satisfaction and normal levels of behavioural and emotional problems, while 7% of children had high levels of behavioural and emotional problems but did not report low life satisfaction.

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

Figure 3.1 Percentage categorised as having low life satisfaction according to level of behavioural and emotional difficulties, by gender



Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279 with boys n=1,646 and girls n=1,633). Differences in low life satisfaction according to difficulties level were statistically significant for boys and girls, $p < 0.005$.

3.2 Univariate associations between potential risk factors and low child social and emotional well-being

This section describes univariate or simple associations between potential risk factors and each of the two aspects of child social and emotional well-being. The presence of a statistically significant association ($p < 0.05$ level) between a potential risk factor and low well-being should not be taken to imply causation. This part of the analysis does not try to take account of possible confounding influences, which might be responsible for associations found. Additionally, as in any cross-sectional analysis where all variables have been measured at the same time-point, even where there is a causal relationship between two variables it is not possible to ascertain the direction of causation. In some cases, reverse causation might apply (for example, children's behavioural and emotional problems might increase parent-child conflict, rather than conflict driving problems). In other instances, causation might run in both directions (for example, creating a vicious circle between parent-child conflict and child problems).

3.2.1 Child characteristics associated with low child social and emotional well-being

Table 3.1 shows the prevalence of high levels of difficulties and low life satisfaction according to various child characteristics. Some characteristics were associated with both outcomes. It was more likely for a child to have high levels of difficulties and low life satisfaction if the child was a boy, if the child was described as having only fair or poor general health, if the mother

expressed concern about the child's ability to read or write, and if the child typically had less than the recommended 10.5 hours sleep. However, the child's BMI status was not clearly associated with either measure of well-being.

Some characteristics were associated with only one of the outcomes being explored. Being born after the first child in the family was associated with low life satisfaction (but not with difficulties). Interrupted sleep and concerns about the child's development not involving reading/writing ability were associated with high levels of difficulties (but not with low life satisfaction). Where a mother had a concern about reading/writing development as well as a concern about another aspect of development, this was particularly strongly associated with high total difficulties score: almost half of children whose mothers had multiple developmental concerns also had high levels of behavioural and emotional problems.

Table 3.1 Associations between child characteristics and prevalence of low child social and emotional well-being

		High total difficulties		Low life satisfaction	
		%	<i>p</i>	%	<i>p</i>
Child gender	Male	14		28	
	Female	9	***	23	**
Birth order	First born	12		23	
	Second or later born	11		28	**
Child general health	very good	8		24	
	good	19	***	29	*
	fair/poor	37	***	37	**
Developmental concern	none	8		24	
	reading/writing	18	***	35	***
	other	32	***	26	
	both	48	***	33	*
Sleep duration (nightly)	10.5 hours or more	9		24	
	Less than 10.5 hours	15	***	28	*
Sleeps through night	always	10		25	
	6 nights/week	13		29	
	5 or fewer nights/week	26	***	29	

Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note:

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

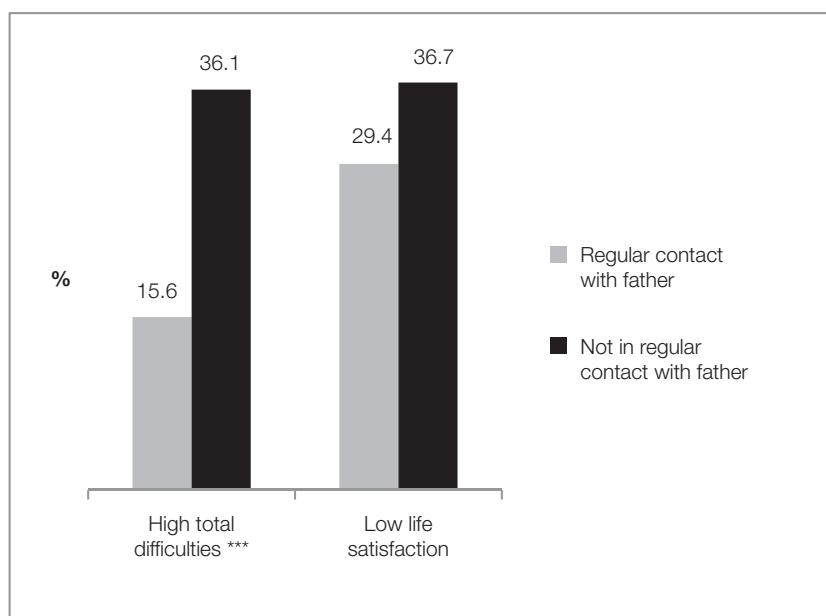
3.2.2 Maternal and household characteristics associated with low child social and emotional well-being

Child behavioural and emotional difficulties were strongly patterned by factors associated with greater deprivation: these included maternal minority ethnic group, lower educational level, lack of employment and fair/poor general health; as well as with living in a household without the biological father, having a low household income, and residing in a deprived area (see Table 3.2). There was less socio-economic patterning of low life satisfaction, although this was associated with fair/poor maternal health, living in a household without the biological father and having a low household income. Neither the number of siblings in the household nor urban-rural location were correlated with either measure of well-being.

Further investigation showed that in families where the mother did not have a resident partner, the child was twice as likely to have high levels of difficulties if the mother reported no regular contact with their father (Figure 3.2). The difference in prevalence of low life satisfaction according to father contact was not statistically significant.

For couple families, further investigation found that the risk of high total difficulties approximately tripled where the relationship between partners was poor⁴, compared to families where the partners enjoyed a good relationship. However, the quality of the partner relationship was not clearly associated with the child's low life satisfaction (Figure 3.3).

Figure 3.2 Contact with father and low child social and emotional well-being, among families with a lone mother



Base: Families with a lone mother providing information on father contact, N=484: Regular contact with father, N=374; no regular contact with father, n=110. Note: *** $p < 0.001$

⁴ For couple families, the partner relationship was assessed by inviting the main carer to indicate agreement with three items using a 5-point scale ("I sometimes feel lonely even when I am with my partner", "My partner doesn't seem to listen to me", "My partner is usually sensitive to and aware of my needs" (reverse-scored). Cronbach alpha was 0.80, indicating good internal reliability. Mean scores were divided into tertiles, to indicate good, medium and poor relationship quality.

Table 3.2 Associations between maternal and household characteristics and low child social and emotional well-being

		High total difficulties		Low life satisfaction	
		%	<i>p</i>	%	<i>p</i>
Mother's ethnic group	White	11		25	
	Minority	24	**	32	
Mother's education	No qualifications	24		25	
	Lower level standard grades/vocational	14	*	26	
	Upper level standard grades/intermediate vocational	17		26	
	Highers/advanced vocational	9	***	26	
Mother's employment	Degree-level academic/vocational	6	***	25	
	Full time	7		25	
	Part time	9		25	
Mother's general health	Not employed	19	***	26	
	Excellent/very good	6		24	
	Good	13	***	26	
Household type	Fair/poor	27	***	31	**
	Both natural parents	8		24	
	Couple, stepfather	18	***	27	
Household income	Lone mother	21	***	31	**
	q1 - bottom	18		29	
	q2	16		28	
	q3	8	***	26	
	q4	5	***	23	*
SIMD ¹ area deprivation quintile	q5 - top	3	***	19	***
	q1 - least deprived	6		25	
	q2	7		25	
	q3	12	***	25	
	q4	14	***	25	
	q5 - most deprived	19	***	27	

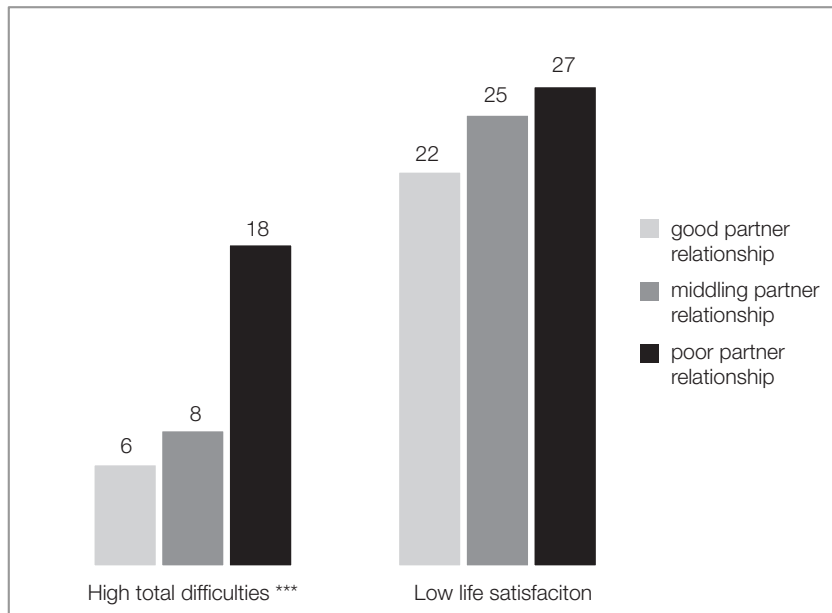
Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note:

¹Scottish Index of Multiple Deprivation. **p*<0.05, ***p*<0.01, ****p*<0.001

GROWING UP IN SCOTLAND:

Family and school influences on children’s social and emotional well-being

Figure 3.3 Quality of partner relationship and low child social and emotional well-being, among couple families

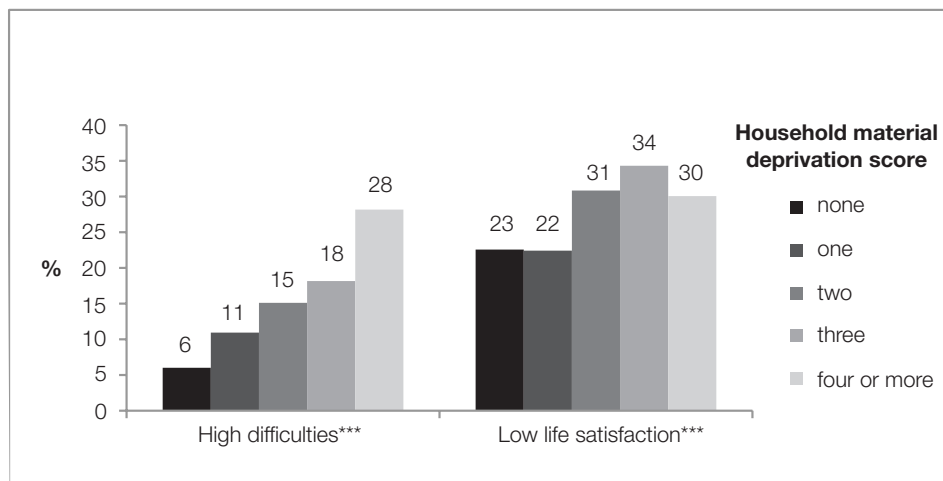


Base: Couple families, N=2769. Note: ***p<0.001

3.2.3 Household material deprivation and low child well-being

An index of material deprivation was created using the mother’s response to seven questions about whether the family could afford various goods, modest investments and treats enjoyed by most families (see 6.2.5 in appendices for further details). High levels of material deprivation reported by a mother were associated with high levels of child difficulty score and low life satisfaction, although the gradient appeared less steep for the latter outcome (Figure 3.4).

Figure 3.3 Material deprivation and child social and emotional well-being



Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) *p<0.05, **p<0.01, ***p<0.001

3.2.4 Life events and low child well-being

The death of a grandparent or other close family member, and a family illness or accident, were events that were both associated with low life satisfaction (Table 3.3). These events were combined in subsequent multivariable models. Deaths, illness and accident to other family members were not associated with high difficulties score, but the child experiencing two or more accidents/injuries, relatives' mental health problems/substance use, parental conflict and moving home were all associated with this measure of well-being.

Several of the events reported by mothers at sweep 7 had no clear association with either low life satisfaction or high difficulties score: these were separation of grandparents or close relatives, death of a pet, family experience of crime, parent in trouble with the police or in prison, parent losing a job, or a parent getting married. In addition, a recent change in family structure (such as a parent moving out of the household since the last survey) did not have a measurable association with low well-being, over and above an association of well-being with family structure at the previous survey.

Table 3.3 Associations between life events and low child social and emotional well-being

Event in the previous two years		High total difficulties		Low life satisfaction	
		%	<i>p</i>	%	<i>p</i>
Death of a family member	no	11		24	
	yes	13		29	*
Illness/accident in family	no	11		25	
	yes	15		32	*
Child accident/injury	none	12		25	
	one	9		26	
	two or more	20	*	33	
Mental health/substance use problems in family	no	11		25	
	yes	24	**	28	
Parental conflict	no	11		25	
	yes	27	***	32	
Moving house	no	10		25	
	yes	18	***	26	

Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) **p*<0.05, ***p*<0.01, ****p*<0.001

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

3.2.5 Parenting associated with low child social and emotional well-being

The quality of the parent-child relationship (reported by mothers) appeared to be linked with child social and emotional well-being. Two aspects of this relationship were measured (warmth and conflict). Lower parent-child warmth and higher parent-child conflict were both associated with both high difficulties and low life satisfaction (Table 3.4).

Less positive parenting (involving less parental positive reinforcement of good behaviour, and parental involvement in the child's activities) was associated with low life satisfaction, for both the mother and the child reports of these parenting behaviours. However, positive parenting behaviours were not clearly associated with high levels of behavioural and emotional difficulties.

Parental knowledge of the child's behaviour (when not at school) and use of smacking were also associated with both well-being outcomes, although less consistently so across the different measures and sources used. Mothers who did not know who their child was with all of the time (when not at school) were more likely to have a child with high levels of difficulty and low life satisfaction. Associations between parental knowledge of what the child was doing and well-being varied according to whether the mother or child supplied the measure. The mother-reported measure was associated with high total difficulties score, while the child-reported measure was associated with low life satisfaction.

Smacking reported by the child was associated with high levels of difficulty and low life satisfaction, but as reported by the mother was only associated with high levels of difficulty.

Lastly, mother's reports of an irregular child bedtime were associated with high levels of child difficulties, but not with low life satisfaction.

Table 3.4 Associations between parenting and low child social and emotional well-being

Parent-reported measures	Warmth in mother-child relationship	high	High total difficulties		Low life satisfaction	
			%	<i>p</i>	%	<i>p</i>
Child-reported measures	Warmth in mother-child relationship	low	21	***	31	***
	Conflict in mother-child relationship	low	1		19	
		medium	6	***	24	**
		high	27	***	33	***
	Positive parenting	high	10		19	
		medium	11		24	
		low	13		31	***
	Parent knows what child is doing	always	10		25	
		often	16	**	30	*
		sometimes/never	35	***	26	
	Parent knows who child is with	All of the time	11		24	
		Mostly/sometimes/rarely	18	***	34	***
	Smacking	low	9		24	
		medium	10		26	
		high	18	***	28	
	Regular bedtime	Always/usually	10		25	
		Sometimes/never	26	***	26	
	Positive parenting	high	11		12	
		medium	11		24	***
		low	13		40	***
	Parents know what child is doing	often/always	11		17	
		sometimes	10		30	***
		never	13		36	***
	Smacking	never	8		21	
		sometimes	13	***	27	***
		often/always	16	***	34	***

Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note: **p*<0.05, ***p*<0.01, ****p*<0.001

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

3.2.6 School experiences and low child well-being

Difficulties with schoolwork (as reported by mothers) were associated with both high difficulties and low life satisfaction, although finding the pace of learning too fast was associated clearly only with high difficulties score. Low emotional engagement with school (as reported by mothers, and by children themselves) was also associated with both aspects of low child well-being (Table 3.5).

Table 3.5 Associations between school experiences and low child social and emotional well-being

			High total difficulties		Low life satisfaction	
			%	<i>p</i>	%	<i>p</i>
Parent-reported measures	Pace of learning at school	about right	12		25	
		too slow	10		22	
		too fast	31	***	32	
	Child finds schoolwork hard	never	6		20	
		some parts	12	***	27	***
		sometimes/always	20	***	29	***
	Emotional engagement	high	6		23	
		low	25	***	34	***
Child-reported measure	Emotional engagement	high	10		13	
		medium	10	**	21	***
		low	14	*	42	***

Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note:

p*<0.05, *p*<0.01, ****p*<0.001

3.2.7 Leisure activities and friendships associated with low child social and emotional well-being

Children whose mothers reported that they engaged in relatively short or relatively long periods of either quiet or active play over a weekend were more likely to have high levels of difficulty, as were children using screen entertainment for four or more hours daily (Figure 3.5). This information on use of leisure time at home was not clearly associated with low life satisfaction.

Non-participation in any organised leisure activity (community groups, team sports, individual sports and arts/music) was associated with both measures of lower well-being, and likelihood of low well-being (particularly difficulties) seemed to reduce with greater number of organised activities (Table 3.6).

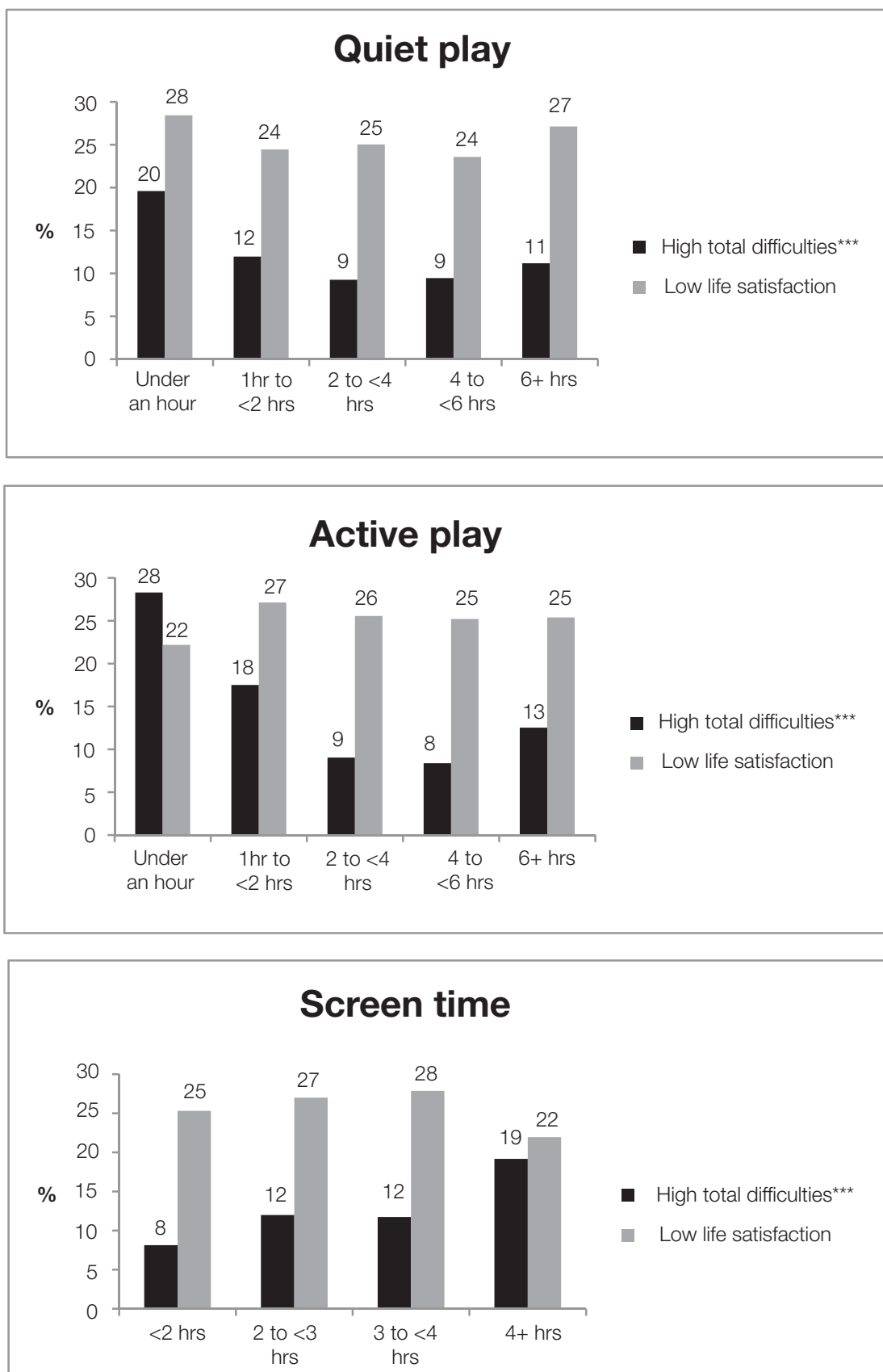
This table also shows that bedroom TV was associated with high difficulties score, but not with low life satisfaction. Two-thirds of children with a bedroom TV also had a bedroom games console, and the latter was also individually associated with high difficulties score but not low life satisfaction (not shown). However, there did not appear to be any stronger association with difficulties for children who had both, rather than only one, of these pieces of equipment. Other types of bedroom media equipment were less common in the sample and did not show clear individual associations with either well-being outcome. In addition, the total number of different types of bedroom media facility did not appear to be correlated with well-being.

Table 3.6 also shows that a child's reports of low-quality friendships and of feeling unhappy at school playtimes were associated with both high levels of difficulty and low life satisfaction.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Figure 3.5 Associations between leisure activities and low child social and emotional well-being



Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) *p<0.05, **p<0.01, ***p<0.001

Table 3.6 Leisure interests, friendships and low child social and emotional well-being

			High total difficulties		Low life satisfaction	
			%	<i>p</i>	%	<i>p</i>
Parent-reported measures	Extra-curricular leisure activity	none	21		34	
		one	16		26	*
		two	9	***	24	***
		three	6	***	24	***
		four	4	***	21	**
		Bedroom TV	no	8		26
	yes	13	***	25		
Child-reported measures	Friendship quality	good	8		14	
		medium	8		26	***
		poor	19	***	41	***
	Happiness at school playtimes	Very happy	11		18	
		Quite happy	8	*	32	***
		Not happy	20	***	50	***

Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note:

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

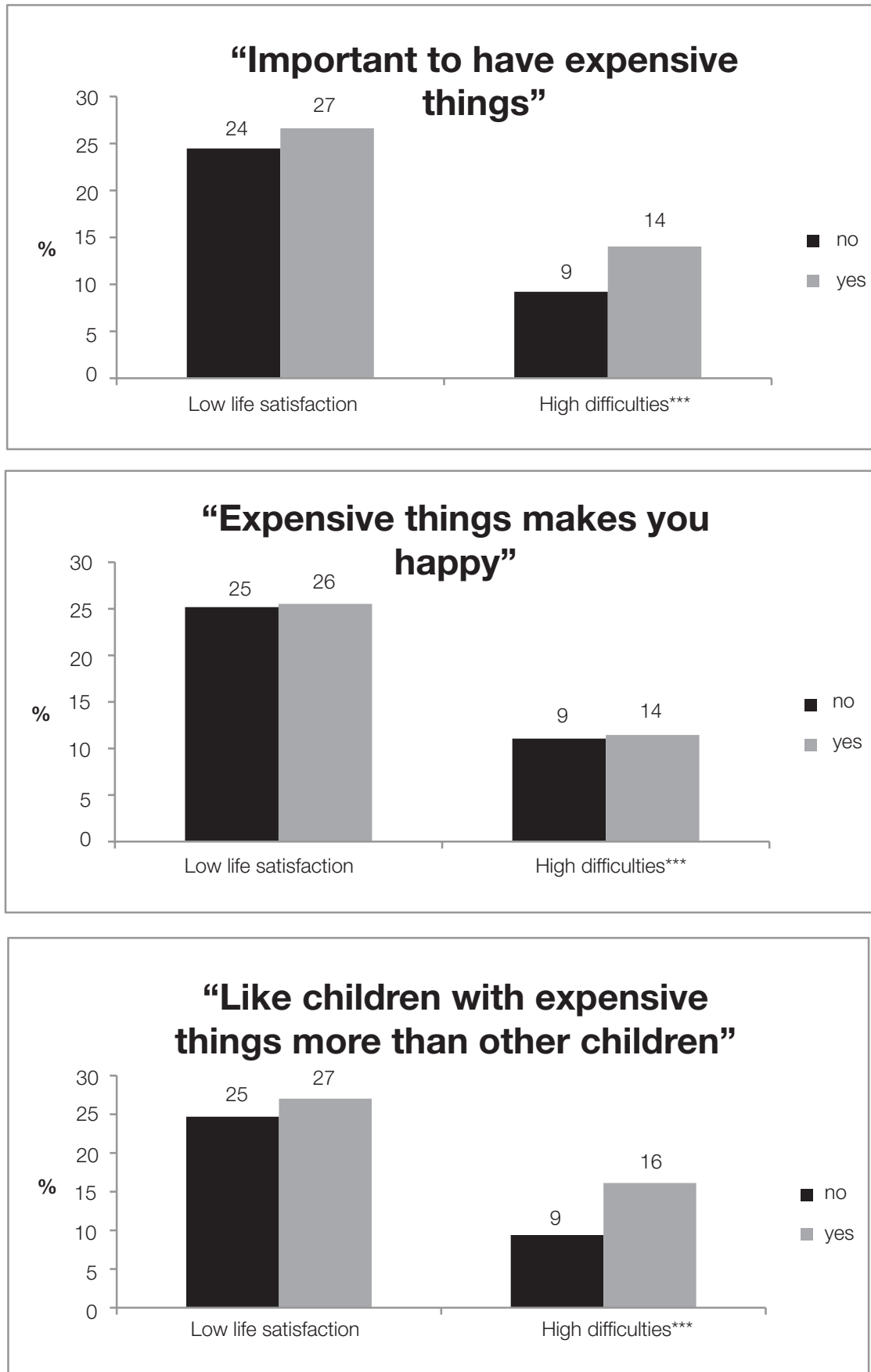
3.3 Materialistic values

Materialistic values (the importance of “expensive things” to the child) did not appear to be associated with low life satisfaction, but some materialistic values were associated with high levels of behavioural and emotional problems. Although thinking that buying expensive things would make one happy was not associated with high difficulties, the other two materialistic values measured, relating to the status conferred by expensive possessions, were associated with a high difficulties score (Figure 3.6).

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Figure 3.6 Materialistic values and low child social and emotional well-being



Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) *p<0.05, **p<0.01, ***p<0.001

3.4 Multivariable associations between risk factors and low child well-being

Two separate multivariable models (one for high behavioural and emotional difficulties, and one for low life satisfaction) allowed for simultaneous assessment of various factors that were found in section 3.2 to have simple (univariate) associations with the outcome in question. Multivariable models allow for the simultaneous assessment of several different and potentially confounding influences on an outcome measure. While likely to give a better indication of risk factors than simple univariate associations, any associations found should not be taken to imply causation, particularly given the cross-sectional design of the present study.

Each model was divided into two stages: the first stage considered parent-reported measures, and the second added child-reported measures. In the following sections, we outline which factors had statistically significant associations with each outcome variable, after controlling for the other variables in the model. Further details of modelling and the full set of results are provided in Appendix 6.4.

3.4.1 *Multivariable model of high behavioural and emotional difficulties*

The results of this model are shown in Table 3.7. In the first stage of modelling using only parent-reported information, several child, maternal and family characteristics were significantly associated with a high difficulties score. Child characteristics included poorer health, maternal concern over the child's development (unrelated to, or coupled with a concern over reading or writing), and disrupted sleep. Maternal characteristics included lower educational qualifications, and having poorer general health.

There were no clear associations with high difficulties score for child gender, sleep duration, maternal developmental concern solely related to the child's reading and/or writing ability, maternal ethnic group, maternal employment, household structure, material deprivation, household income or with area deprivation. Modelling with income in place of material deprivation gave similar non-significant association with high total difficulties score.

Family problems related to mental health or substance use since the last survey more than doubled the chance that a child would have high levels of behavioural and emotional problems. There were no clear associations for other types of event.

Aspects of parenting associated with high difficulties score were low mother-child warmth, high mother-child conflict, and lower parental knowledge of what the child was doing when not at school. In particular, high levels of conflict were very strongly associated with difficulties. However, once other factors had been allowed for, parent-reported smacking and an irregular child bedtime were not clearly associated with high difficulties score.

In terms of school experiences, a mother of a child with a high difficulties score was likely to say that the child found the pace of learning too fast and report lower emotional engagement with school. The child's leisure activities did not seem clearly associated with high difficulties.

GROWING UP IN SCOTLAND:

Family and school influences on children’s social and emotional well-being

With the addition of child-reported measures at stage 2, the associations noted for parent-reported measures remained similar, although child health lost statistical significance. Child-reported poor friendship quality and liking other children with expensive things were both significantly associated with high difficulties score.

Further analysis (not shown here) involved adding low life satisfaction to the model of high difficulties. However, despite univariate associations between high difficulties and low life satisfaction described in 3.1, there was no statistically significant independent effect of low life satisfaction after allowing for other factors.

Further analysis also explored the effects of allowing for the quality of a couple’s relationship, and whether a lone mother had contact with the non-resident father, but failed to find any clear associations with high difficulties score in multivariable models.

Table 3.7 Factors associated with high total difficulties score: results of multivariable analyses

		Stage 1 – parent- reported measures	Stage 2 – parent- and child- reported measures
		<i>p</i>	<i>p</i>
Child characteristics	General health poorer		
	Sleeps through the night less often	*	*
	Developmental concern (unrelated to, or additional to, reading /writing ability)	***	***
Maternal characteristics	Maternal education lower	*	*
	Health poorer	**	**
Major events since last survey	Mental health/substance use problems in family	*	*
Parenting	Mother-child warmth lower	***	***
	Mother-child conflict higher	***	***
	Mother knows what child is doing less often	***	***
School	Emotional engagement with school lower	***	***
	Pace of learning at school (about right)		
		*	*
Child-reported friendships	Friendship quality lower		***
Child-reported materialism	Like children with expensive things more		***

Base: N=3254. Note: **p*<0.05, ***p*<0.01, ****p*<0.001. Where a measure had several response categories, the statistical significance for the overall measure has been provided in this table. See Appendix 6.4 for more information and detailed results.

3.4.2 Multivariable model of low life satisfaction

The results of this model are shown in Table 3.8. Compared to the multivariable model of high difficulties score, there were many fewer child, mother and household characteristics associated with low child life satisfaction.

At stage 1 (parent-reported measures), being a male child or born after the first child in the family were both associated with lower life satisfaction. Child and maternal health, maternal concerns about the child's development, child sleep duration, household type, household income and material deprivation were not associated with low life satisfaction, after controlling for other factors in the model.

Experiencing death, illness or accident involving a close relative during the previous two years increased the chance of low life satisfaction.

Several aspects of mother-reported parenting were associated with low child life satisfaction: these were greater parent-child conflict, less positive parenting and not always knowing who the child was with (when not at school). Low parent-child warmth and less parental knowledge of what the child was doing did not have significant associations with low life satisfaction, after controlling for other factors.

Lower school emotional engagement and finding schoolwork hard were also associated with low life satisfaction. Lack of an organised leisure activity was not associated with low life satisfaction, after allowing for other factors.

At stage 2, child-reported measures of less positive parenting, parental use of smacking and parents not always knowing what the child was doing were associated with low life satisfaction, as were the child's reports of low emotional engagement with school, low-quality friendships and not being happy in the school playground.

After taking account of these child-reported measures, some other measures lost statistical significance: these were child gender, birth order, and mother-reported information on parenting and school experiences. Experiencing a family death/illness/accident remained associated with increased risk of low life satisfaction at stage 2. In addition, at stage 2 a mother's concern over her child's ability to read or write (in the absence of other concerns) became significantly associated with increased risk of low life satisfaction.

Further analysis (not shown here) involved adding high total difficulties score to the model of life satisfaction. Despite univariate associations between high difficulties and low life satisfaction described in section 3.1, there was no statistically significant independent effect of difficulties after allowing for other factors.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Table 3.8 Factors associated with low life satisfaction, age 7: results of multivariable analyses

		Stage 1 – parent- reported measures	Stage 2 – parent and child reported measures
N=3241		<i>p</i>	<i>p</i>
Child characteristics	Male	*	
	Not first born child	*	
	Developmental concern over reading/writing, without any other concerns		*
Major events since last survey	Death/illness/accident in family	**	**
Parenting	Positive parenting lower	*	
	Parent knows who child is with less often	*	
	Mother-child conflict higher	**	
School	Emotional engagement with school lower	*	
	Child finds schoolwork hard more often	*	*
Child-reported parenting	Positive parenting lower		***
	Smacking more often		**
	Parents know what child is doing less often		***
Child-reported school experience	Emotional engagement with school lower		***
Child-reported friendships	Friendship quality poorer		***
	Happiness in school playground lower		***

Base: N=3254. Note * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Where a measure had several response categories, the statistical significance for the overall measure has been provided in this table. See Appendix 6.4 for more information and detailed results.

This study has examined correlates of two different measures of seven year-old children's social and emotional well-being: low life satisfaction, and high total difficulties score. This chapter summarises the main study findings, discusses findings in relation to other research, and comments on strengths and limitations of the study. Lastly, it offers some concluding comments and future directions.

4.1 Summary of findings

Multivariable models identified some factors that were common to both outcomes, and others that were associated with only one outcome. There were also some factors that, despite showing univariate associations with one or both outcomes, did not seem to be important after allowing for other influences.

4.1.1 Factors associated with high difficulties and low life satisfaction

Some child characteristics, aspects of parenting, school experiences and the child's relations with friends were associated with both aspects of child social and emotional well-being examined in this study. Parent-reported risk factors common to high levels of behavioural and emotional problems and low life satisfaction included:

- High conflict in the mother-child relationship
- Low child emotional engagement with school
- Child problems with school work
- Maternal developmental concern over the child's ability to read/or write (this associated with behavioural and emotional problems, only when coupled with another developmental concern)

All these factors, particularly mother-child conflict, appeared more strongly associated with high mother-reported difficulties than with low child-reported life satisfaction. To some extent, it is to be expected that correlations will be stronger with the *mother*- than the *child*-reported outcome due to the effects of "shared method variance". This refers to the spurious association between measures that have all been collected in the same way or from the same source.

There was also a child-reported measure that was common to both outcomes, with similar strengths of association:

- Poor friendship quality.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

4.1.2 Additional measures associated with high difficulties score

High total difficulties score was associated with several additional measures of child, maternal and family characteristics and an additional aspect of parenting. These measures were all reported by mothers, and were not associated with low life satisfaction. They included:

- Child characteristics
 - fair/poor general health
 - sleep problems
 - developmental problem (other than reading/writing ability)
- Maternal and family characteristics
 - Lower maternal education
 - Fair/poor general maternal health
 - Family member with mental health/substance use problems in the two years since the last survey
- Parenting
 - Low warmth
 - Low parental knowledge of what child is doing (when not at school)

A child-reported measure of materialistic attitudes was associated only with high difficulties score, namely

- Liking children with expensive things more than other children.

4.1.3 Additional measures associated with low life satisfaction

Other measures were associated with low life satisfaction, and not with high difficulties score. Parent-reported measures only associated with low life satisfaction included:

- A death, illness or accident involving a close family member in the two years since the last survey
- Less positive parenting
- Lower parental knowledge of who the child is with, when not at school

Child- and parent-reported measures only associated with low life satisfaction comprised:

- Less positive parenting (parent- and child-reported)
- Smacking (child-reported measure only)
- Low parental knowledge of who the child was with (parent-reported), what the child was doing (child-reported)
- Finding schoolwork hard (parent-reported)
- Low emotional engagement with school (parent- and child-reported)
- Not feeling happy in the school playground (child-reported - parent-reported not available)

4.1.4 Measures not associated with either outcome

Lastly, there were some factors that were not clearly associated with either outcome in multivariable models incorporating the full set of parent- and child-reported measures, although these factors were shown to have univariate associations with one or both outcomes. They comprised:

- Child gender
- Child birth order
- Mother's ethnic group (white or minority)
- Family structure
- Household income
- Household material deprivation
- Area deprivation
- Regular bedtime
- Bedroom TV
- Leisure activities, including
 - o Quiet play time
 - o Active play time
 - o Screen time
 - o Organised leisure activities

4.2 Child characteristics and social and emotional well-being

This section will consider the child characteristics investigated in the multivariable models, although consideration of mothers' concerns about the child's development has been left until section 4.5.

4.2.1 Child characteristics and children's behavioural and emotional problems

We did not find gender differences in total difficulties after controlling for other factors. This is in line with an international review suggesting that gender differences in mental health problems among young children are generally very small (Rescorla, Achenbach, Ivanova, Harder, Otten et al., 2011). Our finding that fair or poor general health was associated with behavioural and emotional difficulties is likely to reflect a mental health component to general health, as well as an association between physical and mental well-being. Short or disrupted sleep patterns were associated with high levels of behavioural and emotional problems, in agreement with existing research (Chervin, Archbold, Dillon, Panahi, Pituch et al., 2002; Smaldone, Honig, & Byrne, 2007; Nixon, Thompson, Han, Becroft, Clark et al., 2008; Proctor, Linley, & Maltby, 2009).

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

4.2.2 *Child characteristics and children's low life satisfaction*

The finding of a lack of gender difference in low life satisfaction in the full multivariable model is in line with research generally finding no gender differences in older children's life satisfaction (Proctor et al., 2009). An association with birth order and low life satisfaction was found in the first stage of the model of low life satisfaction. This could reflect parental differential treatment of children within the family: research has found greater maternal warmth and parental involvement with first born children of primary school age (McHale, Updegraff, Jackson-Newsom, Tucker, & Crouter, 2000). In our study, the effect of birth order became non-significant after the addition of child-reported measures including parenting, suggesting that it may have been explained by differences in the child's perceived treatment by parents compared to any siblings.

There were no clear associations between child general health and low life satisfaction after allowing for other influences, despite research showing that children view being physically healthy as important for happiness (Fattore, Mason, & Watson, 2007). There was no independent association between short sleep duration and low life satisfaction, echoing other research (Chervin et al., 2002; Smaldone et al., 2007; Nixon et al., 2008; Proctor et al., 2009). Further investigation in our study also failed to find any association between low total difficulties score and low life satisfaction in our multivariable model. However, this could emerge at a later date, as effects of poor physical and mental health on subjective well-being have been reported in the literature on older children (Proctor et al., 2009).

4.3 Parenting and child social and emotional well-being

Our findings for parenting, with several elements common to both high levels of difficulty and low life satisfaction, echo some themes already established in the research literature examining these two aspects of social and emotional well-being separately.

4.3.1 *Parenting and children's behavioural and emotional problems*

Parenting has received particular attention in the case of possible links with children's emotional and behavioural difficulties. Our findings for low parent-child warmth and high conflict agree with research supporting the relationship between parental rejection or hostility and children's behavioural problems (Hoeve, Dubas, Eichelsheim, van der Laan, Smeenk et al., 2009). The harmful effect of parental hostility in escalating behaviour problems was echoed in a study that also, on a more positive note, demonstrated the beneficial effects of proactive parenting behaviour including being supportive, providing clear instructions and setting limits (Denham, Workman, Cole, Weissbrod, Kendziora et al., 2000). While we did not have a definitive measure of proactive parenting, it seems possible that our findings for parent- and child-reported low parental knowledge of what the child was doing may have reflected a similar lack of parental involvement and clearly expressed parental expectations for the child's behaviour.

We did not find associations between parent- or child-reported positive parenting behaviours and high total difficulties score. This might seem surprising, in view of parenting interventions branded as promoting "positive parenting" to address children's behavioural problems

(Wiggins, Sofronoff, & Sanders, 2009), but in these interventions the term is used differently, to encompass a wider range of skills including therapy to remedy parental negative attributions for child behaviour. Our measure of positive parenting was constructed using items on parental positive reinforcement of good behaviour and involvement in the child's activities. Previous work using similar measures to our own also found that positive reinforcement and involvement were not reliable discriminators of children's conduct problems (Scott, Briskman, & Dadds, 2011).

Our results did not show an independent association between parent-reported smacking and child behavioural and emotional difficulties, despite research indicating that the use of harsh discipline predicts an increase in children's mental health problems (Lansford, Criss, Laird, Shaw, Pettit et al., 2011), and research using the Growing up in Scotland study that shows associations between smacking and high levels of behavioural and emotional problems at an earlier age (Parkes & Wight, 2011; Scott et al., 2013). This difference with previous Growing up in Scotland research could reflect differences in the wording of questions asked about smacking⁵. There is also danger of social desirability bias to parental response, due to awareness of negative publicity about smacking children. But it also seems possible that smacking was relatively unimportant for seven year olds, compared to overall levels of parent-child conflict.

With all the findings for parenting, it is important to bear in mind that a poor relationship between a parent and their primary school age child may stem from much earlier problems, such as poor maternal mental health (Dubois-Comtois, Moss, Cyr, & Pascuzzo, 2013) or mother-infant attachment problems (Easterbrooks, Bureau, & Lyons-Ruth, 2012). There may be an inherited component to both parental negativity and child mental health problems (Alemany, Rijdsdijk, Haworth, Fananas, & Plomin, 2013), and the child's early temperament and behaviour may contribute to sub-optimal parenting (Bradley & Corwyn, 2008; Miner & Clarke-Stewart, 2008).

4.3.2 Parenting and children's low life satisfaction

Existing research on older children supports the idea that family life is a key determinant of subjective well-being. To take a UK example, a large study of 10-15 year olds for the Children's Society in England found that life satisfaction in the domain of family life was more strongly associated with subjective well-being than satisfaction in other domains (amount of choice, material possessions, safety, health, school work, leisure, friends, and local area) (Rees, Bradshaw, & Goswami, 2010). Less is known about *which* aspects of family life, including parenting, are most important for life satisfaction - especially in younger age groups. Research using the British Household Panel survey supported the likely importance of the parent-child relationship for 10-15 year olds' subjective well-being, as changes in the amount of conflict and communication between parent and child were associated with changes in life satisfaction (Clair, 2012). This seems to tally with our findings for the role of parental conflict in seven year-olds. Some other research on teenagers found aspects of authoritative parenting (emotional support, strictness/supervision, and autonomy granting)

⁵ Sweep 7 asked about current frequency of smacking, whilst previous sweeps asked about any use of smacking over a specified period of time, such as the past year.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

were all associated with subjective well-being, with emotional support having the strongest relationship (Suldo & Huebner, 2004). The findings of these authors on the effects of emotional support and strictness/supervision appear to have some overlap with our own for positive parenting (positive reinforcement, and involvement in the child's activities and interests), and for parental knowledge. Our additional finding for child-reported (but not parent-reported) smacking and low life satisfaction has not, as far as we are aware, been found elsewhere.

4.4 Family stressors and child social and emotional well-being

Turning to the role of family stressors linked to deprivation and ill-health, our study suggested that these were more important for behavioural and emotional problems than for life satisfaction.

4.4.1 Family stressors and children's behavioural and emotional problems

For high difficulties score, we found independent effects of maternal education and health, and of recent mental health or substance use problems involving the child's close family. A recent systematic review (Reiss, 2013) of more than fifty studies considered how various markers of socio-economic position (family income, parental occupational class, parental education, parental employment) were associated with mental health problems among children and adolescents. It found that low parental education and low household income were the markers that were most strongly associated with an increase in the risk of mental health problems among children and adolescents. In our study, one possible explanation for an association with maternal education, rather than household income, is poorer access to children's mental health services among less educated mothers (McLaughlin, Breslau, Green, Lakoma, Sampson et al., 2011). This possible explanation is supported by GUS research showing that mothers from more disadvantaged circumstances perceive more barriers to professional support, including fear of interference or stigma (Mabelis & Marryat, 2011).

There are also well-established associations between maternal depression and children's mental health problems, appearing strongest for families living in poverty (Goodman, Rouse, Connell, Broth, Hall et al., 2011). Research using GUS has also found that poor maternal mental health may negatively impact child behaviour and development (Marryat & Martin, 2010). Elsewhere, poor maternal physical health has also been linked to children's mental health (Eisenhower, Blacher, & Baker, 2013). Again, it is well to bear in mind that there are inherited components to maternal and child health (Taylor, Allan, Mikolajewski, & Hart, 2013). In addition to an effect of poor maternal general health, our study found an additional effect of mental health or substance use problems in the family. This might reflect a mental health component to poor maternal health – no direct measure of maternal mental health was available at this sweep of data collection. It could also relate to problems among other family members, especially the child's father: for example, paternal depression has been shown to predict child mental health problems in addition to maternal depression (Gross, Shaw, Moilanen, Dishion, & Wilson, 2008).

We did not find that a death, illness or accident involving a family member was associated with children's behavioural and emotional problems, although research on children and teenagers has suggested that parental bereavement is a risk factor for subsequent mental health problems (Black, 1998; Stoppelbein & Greening, 2000). We also did not find a role for parental conflict, although again research elsewhere has suggested it may have harmful effects later in life (Turner & Kopiec, 2006). It may be that our measure (presence/absence of conflict since the last survey) was not sensitive enough: detailed information on parental relationship with partner was collected only for mothers with a co-resident partner, so could not be used across the whole sample.

Like the current study, other UK research has distinguished separate effects of different family stressors on children's mental health problems: research using the Millennium Cohort Study found poverty and maternal depression were independent risk factors for behavioural and emotional problems among three-year old children, explained only in part by less supportive mother-child relations and harsh discipline (Kiernan & Huerta, 2008). While living in a single parent or step family, and parental divorce or separation have been linked to children's lower mental health (Bramlett & Blumberg, 2007; Magnuson & Berger, 2009), our study found no effect for family structure after controlling for other influences. This is in agreement with UK research suggesting similar effects of poverty and deprivation on three-year olds' mental health for children of single mothers and those in couple families (Kiernan & Huerta, 2008).

4.4.2 Family stressors and children's low life satisfaction

Overall, our finding of few associations between socio-demographic factors and seven year-old children's life satisfaction is in line with much previous research on older age groups (Proctor et al., 2009). A recent study of older Scottish children found some associations between increased family affluence and greater life satisfaction after allowing for family structure and ease of communication with parents, although these were most consistent in the 15 year-old age group studied, compared to 11 and 13 year olds (Levin, Dallago, & Currie, 2012). Our study does not appear to support the idea that material well-being is important to seven-year old children's subjective well-being, independent of other correlated influences. Nonetheless, it could be that factors related more specifically to children's, rather than household, material deprivation would have shown a stronger association with life satisfaction⁶. Research using the first wave of the new UK Household Longitudinal survey, *Understanding Society* (Knies, 2012) found that while conventional income-based indicators of poverty were not clearly associated with well-being among 10-15 year-olds, material deprivation, particularly if it affected the children themselves, was associated with lower well-being. However, this particular study, unlike our own, was unable to allow for possible confounders associated with other aspects of family life (such as parent-child relationships and parenting behaviours) to show whether the effect of deprivation was related to a lack of money, rather than other factors.

⁶ Although it should be noted that our study did not find an association between the number of children's bedroom electronic possessions and their life satisfaction.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Turning to other types of stressor, we found that a recent death, illness or accident in the family was associated with low life satisfaction. The effect of a sad life event is known to be associated with low subjective well-being among older children and teenagers (Proctor et al., 2009), and this review also found associations for other stressful life experiences such as parental alcoholism and conflict that were not apparent in our own study. It could be that younger children are to some extent less exposed to more direct effects of some life experiences, although these might still have an indirect effect via parent-child relationships.

4.5 Developmental concerns, school experiences and friendships: associations with child social and emotional well-being

Problems with schoolwork, a mother's concern over her child's ability to read and/or write and the child's low emotional engagement with school were associated with both behavioural and emotional difficulties, and with low life satisfaction. Nonetheless there were some differences in which measures were associated with each outcome, suggesting that different processes may be involved for the two different aspects of social and emotional well-being.

4.5.1 Associations with behavioural and emotional problems

There were differences in how measures of schoolwork problems and concern over reading/writing ability (all parent-reported) associated with each outcome. In the case of high difficulties, it was the whole pace of learning that was "too fast" for the child: this might suggest more fundamental school adjustment problems than "sometimes/always finding schoolwork hard" (the measure associated more clearly with low life satisfaction). A mother's concern over her child's reading and/or writing ability was associated with high difficulties only when coupled with another developmental concern. At this sweep, the mother was not asked for any further details about the nature of her concerns, but it seems possible that this may in some cases reflect more serious language or cognitive deficits. Cognitive ability was not measured directly at this sweep, but research has indicated a link with children's mental health problems (Andersson & Sommerfelt, 2001; Bennett, Brown, Boyle, Racine, & Offord, 2003; Weeks, Wild, Ploubidis, Naicker, Cairney et al., 2014). Previous research has also found associations between academic underachievement and increases in children's mental health problems, after taking account of "school readiness" in terms of language and cognitive development (van Lier, Vitaro, Barker, Brendgen, Tremblay et al., 2012).

Children's emotional engagement with school is likely to reflect adjustment to aspects of both the learning and social environments (Fredricks, Blumenfeld, & Paris, 2004). It is known that pre-school behavioural problems interfere with children's learning at school (Stormshak, Bierman, & Conduct Problems Prevention Res Grp, 1998) and reduce their social skills when interacting with other children and adults (Olson & Hoza, 1993). Thus, some of the cross-sectional associations we found for school emotional engagement and friendship quality with total difficulties score may be due to reverse causation. Nonetheless, there is evidence that poor school engagement predicts problem behaviours and depression in older children (Carter, McGee, Taylor, & Williams, 2007; Hirschfield & Gasper, 2011; Li & Lerner, 2011; Li, Zhang, Liu, Arbeit, Schwartz et al., 2011). Mechanisms for these effects need to be explored

further, but it seems likely that children who enjoy school and put effort into their schoolwork are more connected to school values, develop closer ties with teachers and like-minded peers, and have less time and inclination for antisocial behaviours. Low school engagement may be a reflection of poor pupil-teacher relations and an unsupportive classroom environment, both of which have been linked to children's mental health at school (Murray & Greenberg, 2000; Silver, Measelle, Armstrong, & Essex, 2005; Buyse, Verschueren, Verachtert, & Van Damme, 2009). It is interesting that in our study, the multivariable models found that only *parental* reports of the child not looking forward to school or being reluctant to go seemed associated with high child difficulties: when we included children's views, their feelings about friends seemed more important than whether they liked school, or how happy they felt at school playtimes. Peer rejection, involving victimisation, and/or exclusion from friendship groups and activities, may lead to feelings of loneliness and depression (Buhs & Ladd, 2001): these internalising problems may in turn trigger behavioural problems (Gooren, van Lier, Stegge, Terwogt, & Koot, 2011). Other work has also shown that peer rejection is an important reason for the escalation of children's pre-existing behavioural problems (Laird, Jordan, Dodge, Pettit, & Bates, 2001; Murray-Close, Hoza, Hinshaw, Arnold, Swanson et al., 2010).

4.5.2 Associations with low life satisfaction

Although family relationships tend to come high on child-generated life domains important for subjective well-being, relationships with friends also feature. A large study of English secondary school children supported the idea that positive and negative friendships, as well as family relationships, were associated with corresponding differences in the level of subjective well-being (Goswami, 2012). Our finding of an association between low friendship quality and low life satisfaction among seven year-olds is echoed in a study of 9-12 year old children that found feeling left out of friendships was associated with lower subjective well-being (Holder & Coleman, 2009), and in a study of 12 year-olds indicating a protective role for close friendships on subjective well-being (Uusitalo-Malmivaara & Lehto, 2013). Both studies allowed for the effect of family processes.

Additionally, academic competence and emotional engagement with school have been associated with life satisfaction in studies of teenagers (Proctor et al., 2009). Although there is a lack of research on younger children, this seems to tally with our findings for mothers' concerns over the child's reading and/or writing ability, and maternal reports that the child finds schoolwork hard and does not seem to like school. When we included child-reported emotional engagement for school in our multivariable model, the effect of the corresponding mother-reported measure was reduced to non-significance, suggesting that mother- and child-reported measures tapped in to the same aspects of school experience. We do not know which aspects of school life were important here, although a US study found that enjoying school work, receiving teacher support during lessons, and absence of peer victimisation were all associated with primary school age children's liking for school (Lohre, Lydersen, & Vatten, 2010).

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

4.6 Leisure activities and child social and emotional well-being

Other research on older children's subjective well-being has found positive associations with physical activity (Holder, Coleman, & Sehn, 2009), and there is also evidence that play activities are associated with higher levels of pre-school children's emotional well-being (Howard & McInnes, 2013); although neither study took account of many other possible confounding influences including parenting. UK research on primary school-age children has found few associations between screen time and mental health problems, after allowing for family processes and other confounding factors (Parkes, Sweeting, Wight, & Henderson, 2013).

Our study found no clear independent associations between play time, screen time or bedroom TV and either measure of children social and emotional well-being, after allowing for other influences. We also found no clear effect of participation in organised leisure activities on seven year-olds' behavioural and emotional problems, and only a borderline association with low life satisfaction. This is in line with a study finding no association between organised leisure participation and children's mental health problems (Fletcher, Nickerson, & Wright, 2003). Although other studies suggest benefits of organised extra-curricular activities for different aspects of social and emotional well-being (Gilman, Meyers, & Perez, 2004; Molinuevo, Bonillo, Pardo, Doval, & Torrubia, 2010), there is a need for more consideration of possible confounders in this area of research.

4.7 Materialistic attitudes and child social and emotional well-being

Our study did not find that materialistic attitudes were associated with low life satisfaction among seven year-olds. Despite some research suggesting that the consumer culture and media pressure may lead children to develop unrealistic expectations and become unhappy (Piko, 2006; Nairn, Omerod, & Bottomley, 2007), the relationship between materialism and life satisfaction was contested in a recent study of 8-11 year olds, which found that decreased life satisfaction led to greater materialism, not the other way round (Oprea, Buijzen, & Valkenburg, 2012). Other recent work suggests that UK children may place a lower priority on material possessions than their parents, but did suggest that UK consumer culture might reinforce perceptions of unequal status, and contribute towards unhappiness among poorer children (Ipsos MORI & Nairn, 2011). Our study found an association between liking children with expensive things and high levels of mother-reported behavioural and emotional problems. Perceptions of classroom peer status inequality have been associated with socio-emotional problems in a study of Scottish 8-13 year olds (Ostberg, 2003). It is possible that children whose behavioural difficulties lead them to be marginalised by their peers will attach greater importance to attributes reflecting peer status, and perceived inequality.

4.8 Study limitations and strengths

This study is cross-sectional in nature, and associations found between measures of potential risk factors and children's social and emotional well-being cannot be taken to show causal effects. There may be other confounding influences, including genetic effects on temperament, and early life factors. In some cases there may be reverse causation, if, for

example, a child's behavioural and emotional difficulties lead to more parent-child conflict. For the most part, the study relies on mothers' reports, with the possible drawbacks of social desirability to responses and other forms of bias. The omission of fathers' views (due to low numbers interviewed) is a weakness, as is the fact that children were asked about their parents together, rather than about their mother and father separately. This difference will limit the correlation to be expected between child and maternal reports of the same measures: nevertheless, there was some agreement between mother and child-reported parenting behaviours. The range of possible influences considered (especially in relation to family life) and the inclusion of two observers for many measures both lend strength to the study, although ideally it would have been better to have had more extensive replication of measures including a child- or teacher-completed Strengths and Difficulties Questionnaire. However, it was not thought practicable to extend the length of the child questionnaire at this age of data collection. Other limitations include the small ethnic minority component in the Growing Up in Scotland study, which precluded detailed investigation of ethnic differences. Study attrition from the first sweep of data collection means that disadvantaged groups tend to be under-represented: however, use of survey weights helped to counteract biases arising from this.

4.9 Conclusions and future directions

This study has found associations between several aspects of seven year-old children's family life and school experiences, and their social and emotional well-being. Several aspects of parenting, school adjustment and friendships were associated with both child mental health problems and low subjective well-being. Greater conflict in the parent-child relationship, lower parental awareness of the child's activities or relationships, children's difficulties adjusting to the learning and social environment at primary school and the child having poorer quality friendships were associated with both high levels of behavioural and emotional problems, and with low life satisfaction. These findings support the idea that social relationships, involving parents, teachers and friends, are of key importance for young children's social and emotional well-being. In contrast, economic factors and some other aspects of family life (including family structure and the child's leisure activities) did not seem clearly associated with social and emotional well-being, after allowing for other influences.

The study also suggested that influences on children's subjective well-being may differ somewhat from influences that are important for mental health. Family stressors appeared important for child mental health problems. These seem to relate to ill-health and low psychological or social resources, and are often associated with deprivation. They included poor child health and developmental problems, low maternal education and poor health, family mental health/substance use problems and low mother-child warmth. These factors were not clearly associated with subjective well-being. In contrast, factors linked with experiencing negative affect (such as worry, pain or dislike) or lack of positive affect (such as joy or pride) seemed important for low life satisfaction among young children. They included experiencing a recent death, illness or accident in the family, and less positive parenting (positive reinforcement of good behaviour and involvement in the child's activities). These factors did not clearly differentiate children with high levels of behavioural and emotional problems.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Further research is required to investigate possible influences on social and emotional well-being from earlier in the children's lives, particularly for the less studied subjective well-being. GUS now has repeated measures of behavioural and emotional difficulties from sweep 4 (3 years 10 months) to sweep 7 (7 years 10 months). Research is currently under way to examine various influences on trajectories of difficulties, starting with early life factors and the family environment, and then looking at the influence of the peer group and school environment as the child grows. It is hoped that future sweeps of data collection will repeat measurement of subjective well-being to allow for similar analysis of change in this outcome, as well as investigation of consequences of low social and emotional well-being for children's later development.

4.10 Policy implications

The study endorses several of the indicators of overall child wellbeing used in the Scottish Government GIRFEC framework: safe, healthy, achieving, nurtured, active, respected, responsible and included (Scottish Executive, 2005a). For instance, findings for the parent-child relationship and positive parenting underline the importance of "nurtured"; and evidence on the significance of friendships is relevant to "included".

Overall, findings indicate that a more holistic approach to children's social and emotional well-being, addressing its various different components, needs to recognise that these components may be influenced by overlapping, but also distinct, sets of factors. Despite uncertainties about causal processes underlying the associations found in this study, the findings suggest that child social and emotional well-being may be supported by interventions in both family and school settings.

Better access for parents and their children to professional advice and support services, including the development of parenting skills through group- or individually- based parenting programmes, may help promote supportive, responsive parent-child relationships and effective management of behavioural problems. The Scottish Parenting Strategy and the Mental Health Strategy for Scotland 2012-2015 (Scottish Government, 2012; Scottish Government, 2012) propose several measures that tie in with this study's findings, including a national roll-out of parenting programmes to address disruptive behaviour in young children, extending professional training in basic infant mental health and child psychotherapy, better services for children with learning disabilities, and improved access to specialist Child and Adolescent Mental Health Services. These focus on providing help for behavioural and emotional problems. However, our study suggests that even where a child does not have behavioural and emotional difficulties, initiatives to develop parenting skills through closer interaction, developing shared interests and positive reinforcement may improve children's subjective well-being.

The current study helps to identify families at increased risk of behavioural and emotional problems, suggesting that service provision by the Early Years Collaborative should be prioritised where there is poor maternal health, family mental health or substance use and/or maternal-child attachment problems. There may also be extra support needs (eg. transport costs or childcare needs) to ensure disadvantaged families' participation in group-based

parenting programmes. Existing GUS research has also shown that barriers to help-seeking involving lack of awareness, perceived stigma of receiving help and fear of losing control are relatively common among disadvantaged groups (Mabelis & Marryat, 2011): these will require great sensitivity to overcome. Equally, the Scottish Parenting Strategy has recognised the need to address wider issues, such as parental mental health problems, that may interfere with a parent's ability to care for a child (Scottish Government, 2012b). Our study also suggested that some families could benefit from advice and support in how to help a child understand and cope with a distressing family event involving an accident, illness, or death, especially if a parent is distressed too.

Turning to the school context, the study suggests the importance of promoting adjustment to both the learning and social environment in primary schools. NICE public health guidance for promoting social and emotional well-being among primary school-age children recommends both universal and targeted approaches (National Institute for Health and Clinical Excellence, 2008).

The universal approach involves each primary school developing a whole-school approach to social and emotional well-being, to create conditions for positive learning, successful relationships and the prevention of bullying and violence. The development of social and emotional skills should be integrated within the school curriculum, appropriate training should be provided for teachers and practitioners, and support for parents provided in the form of parenting skills development and communication about school policies. In Scotland, the Health and Wellbeing in Schools Project (Scottish Government, 2011) suggested ways in which social and emotional well-being could be promoted effectively within the Curriculum for Excellence, emphasising the importance of supporting children at key transition periods and the role of co-ordinated partnerships in schools. More recent Scottish Government policy includes a reformulation of the School Nurse role (Chief Nursing Officer, 2013). Case studies of different approaches to promoting health and well-being have been posted on the Scottish Education website (see <http://www.educationscotland.gov.uk/learningteachingandassessment/curriculumareas/healthandwellbeing/supportmaterials/sharingpractice>). Other initiatives include the ongoing SEED (Social and Emotional Education and Development) trial, a randomised control trial of Scottish primary schools to assess the effectiveness of whole-school interventions (<http://www.sphsu.mrc.ac.uk/research-programmes/sh/shvg/seedtr.html>).

Targeted approaches focus on identifying and assessing primary school children with early signs of behavioural and emotional difficulties, discussing possible solutions with parents and involving specialist help for the child and parents if difficulties are complex and persist (National Institute for Health and Clinical Excellence, 2008). Our study findings underline the importance of teacher training to develop supportive relationships with all pupils, as well as resources for additional classroom assistance, so that children who find learning difficult do not become frustrated, disruptive and demoralised.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Initiatives to help children who experience difficulties making friends might involve parents and out-of-school settings, as well as schools. Possible approaches include training in social skills such as sharing; developing strategies to reduce behaviour that alienates other children (such as anger or bossiness); and help in finding an environment that is conducive to friendship formation, such as being placed in a small learning group, the parent inviting other children to play after school, or joining an out-of-school activity (Fast Track Project, 2010/2011). With regard to this last approach, the Scottish National Play Strategy has recognised play as an important part of children's social development (Scottish Government, 2013), and supports the provision of safe play environments in homes, schools and local communities where children may have opportunities to build friendships.

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GROWING UP IN SCOTLAND:

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Family and school influences on children's social and emotional well-being

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6.1 Description of Items used in the Strength and Difficulties Questionnaire (SDQ)

Conduct problems

Often has temper tantrums or hot tempers

*Generally obedient, usually does what adults request

Often fights with other children or bullies them

Often lies or cheats

Steals from home, school or elsewhere

Hyperactivity/inattention

Restless, overactive, cannot stay still for long

Constantly fidgeting or squirming

Easily distracted, concentration wanders

*Thinks things out before acting

*Sees tasks through to the end, good attention span

Emotional problems

Often complains of headaches, stomach-aches or sickness

Many worries, often seems worried

Often unhappy, down-hearted or tearful

Nervous or clingy in new situations, easily loses confidence

Many fears, easily scared

Peer relationship problems

Rather solitary, tends to play alone

*Has at least one good friend

*Generally liked by other children

Picked on or bullied by other children

Gets on better with adults than with other children

*Item reverse-scored

For more information, see the SDQ web pages: <http://www.sdqinfo.org/a0.html>

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

6.2 Description of measures used to explore correlates of child social and emotional well-being

6.2.1 *General health of the child and mother*

These were assessed by asking parents:

How is (child's name)'s health in general? Would you say it is ...

- Very good
- Good,
- Fair,
- Bad,
- Very bad

In general, would you say your health is...

- Excellent
- Very good
- Good
- Fair
- Poor

For both mothers and children, there were too few cases in the worst health response categories to consider separately. Three-part measures of health were constructed: for the child responses were "very good" (74%), "good" (21%), "fair"/"bad"/"very bad" (5%); and for the mother "excellent"/"very good" (55%), "good" (30%) and "fair"/"poor" (15%).

6.2.2 *Child overweight or obesity*

Body mass Index (BMI) was calculated from height and weight measurements taken by trained researchers at the time of the sweep 7 interview. BMI scores were classed as underweight/normal, overweight or obese using UK 1990 growth curve information. 25% of children were classified as either overweight or obese.

6.2.3 *Child development*

Parents were asked two items:

- Do you have any concerns about (child's name)'s ability to read and/or write?
- Do you have any concerns about any other areas of (child's name)'s development?

Responses were either yes or no to each item. There were no further questions asking about the 'other' concerns at this sweep. 11% of parents were concerned about their child's reading and/or writing ability, and 9% had another concern. There was some overlap of

concerns, so a combined measure was created. Overall, 83% of parents had no concern, 8% had a reading/writing concern, 6% had another type of concern and 3% had both concerns.

6.2.4 Sleep duration and pattern

Mothers were asked how many hours' sleep their child obtained on a typical night, and how many nights of the week their child had unbroken sleep. Following NHS recommendations suggesting that seven-year olds require 10.5 hours of sleep each night (<http://www.nhs.uk/Livewell/Childrenssleep/Pages/howmuchsleep.aspx>), sleep duration was divided into those receiving at least this amount (55%) and those receiving less (45%). Sleep pattern was grouped into those sleeping through the night seven days a week (83%), six days (7%), or fewer nights than this (9%).

6.2.5 Material deprivation

Household income may not be a sensitive indicator of family deprivation. An index of material deprivation was created, based on questions from European household deprivation scales (European Commission, 2012). Parents were asked whether their family had the following seven items:

- a holiday away from home for at least one week a year, whilst not staying with relatives at their home;
- a celebration with presents, for friends and family at special occasions like birthdays;
- a night out once a month;
- a car or van;
- enough money to keep your home in a decent state of decoration;
- household contents insurance;
- regular savings of £10 a month or more for rainy days or retirement.

For each item, responses were (1) I/We do this, (2) I/We would like to do this but cannot afford this at the moment, or (3) I/We do not want/need this at the moment. A count was made of response (2), to give a scale running from 0 to 7. Because of small numbers with high scores, the top end of the distribution was collapsed to give a 5-point scale running from 0 to 4. Over half (56%) of families scored zero, 18% scored one, 11% scored 2, 8% three and 7% four or more.

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

6.2.6 Life events

Information on events that may have affected the child since the survey two years previously was gathered from parents, grouped for analysis purposes into 13 different types of event:

- Moving house since the last survey (13% had done so)
- Change in presence of biological father in the household (in 3% of households, a father had left, while a father had returned in 1% of households).
- Change in presence of a partner in the household, whether or not this was the biological father (in 3% of households, the mother had lost a partner, while in 3%, the mother gained a partner)
- Conflict between parents (5% of households)
- Parent got married (3% of households)
- Separation or divorce of grandparents or other close relatives (4% of households)
- Death of a family member (parent, parent figure, sibling, grandparent or other close relative) – this affected 22% of households
- Illness or an accident involving family members (6% of households)
- Accident or injury to the child, requiring medical attention (19% had one and 4% had two or more).
- Mental health or substance use problems involving family members (2% of households)
- Death of a pet (19% of households)
- Family experienced crime (1% of households)
- Parent in trouble with police, or in prison (1% of households)
- Parent lost job (5% of households)

There were additional items about whether the child had changed primary school, and whether the child had been in a foster home or residential care since the last survey, but no children in the data set had experienced either of these events.

6.2.7 Positive parenting

This was based on 6 items from the Alabama Parenting Questionnaire (APQ) (Shelton & Frick, 1996). Both parent- and child-reported measures were collected, but were explored separately.

Items in the parent-reported version:

- You let (child's name) know when he/she is doing a good job with something
- You compliment (child's name) after he/she has done something well

- You praise (child's name) if he/she behaves well
- You ask (child's name) about his/her day in school.
- You play games or do other fun things with (child's name)
- You check to make sure (child's name) is doing OK

Parent responses were on a 5 point scale from (1) “never” to (5) “always”. A factor analysis showed that items loaded on to one factor, with loadings between 0.5 and 0.8. Cronbach alpha (standardised scores) was 0.76, indicating good reliability.

Items in the child-reported version:

- My parents tell me when I'm doing a good job with something
- My parents tell me when I do something well
- My parents tell me if I behave well
- My parents ask about my day in school
- My parents play games or do other fun things with me
- My parents check to make sure I'm doing OK

Child responses were on a 4-point scale from (1) “never” to (4) “always”. Again, factor analysis showed that items loaded on to one factor, with loadings between 0.4 and 0.7. Cronbach alpha (standardised scores) was 0.66, indicating acceptable internal reliability.

Mother- and child-reported scores showed a moderate positive correlation, $r=0.15$. This relatively modest correlation might reflect the fact that the child was asked about both parents together, rather than just about the mother.

Mean standardized scores for both the parent- and child-reported items were divided into three equal groups, to indicate high, medium and low levels of positive parenting.

6.2.8 Warmth of the mother-child relationship

This was based on 8 items from the Pianta scale (Pianta, 1992). Only parent-reported information was collected. Items were:

- I share an affectionate, warm relationship with (child's name)
- (Child's name) will seek comfort from me
- (Child's name) is uncomfortable with physical affection or touch from me
- (Child's name) values his relationship with me
- When I praise (child's name), he/she beams with pride
- (Child's name) spontaneously shares information about him/herself

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

- It is easy to be in tune with what (child's name) is feeling
- (Child's name) openly shares his/her feelings and experiences with me

Responses were on a 5-point scale from (1) definitely applies to (5) definitely does not apply. (Response (6), "can't say", was treated as missing.) Cronbach alpha (standardized scores, reversing item 3) was 0.70, indicating good reliability. Mean standardized scores were divided into two groups. Due to the large number of tied scores at the more positive end of the scale, this division was unequal. Nearly two-thirds of parents (64%) had a relationship with their child characterized by "high" warmth, while the remaining 36% had "low" warmth.

6.2.9 Conflict in the mother-child relationship

This was based on 7 items from the Pianta scale, collected from parents only (see previous section):

- (Child's name) and I always seem to be struggling with each other
- (Child's name) easily becomes angry at me
- Dealing with (child's name) drains my energy
- (Child's name) remains angry or is resistant after being disciplined
- When (child's name) wakes up in a bad mood, I know we're in for a long and difficult day
- (Child's name)'s feelings towards me can be unpredictable or can change suddenly
- (Child's name) is sneaky or manipulative with me

The response scale was as for warmth. Cronbach alpha (standardized scores) was 0.85, indicating good reliability. Mean standardized scores were divided into three equal groups, indicating low, medium and high levels of conflict between parent and child.

6.2.10 Smacking

This was based on items from the Alabama Parenting Questionnaire, with both parent- and child-reported information collected. Responses were on a 5-point scale for parents, and a 4-point scale for children, as for the positive parenting items (section 6.2.7). Parent- and child-reported measures were explored separately.

The parent-reported version used 2 items, strongly correlated with $r=0.58$.

- You smack (child's name) with your hand when he/she has done something wrong
- You slap (child's name) when he/she has done something wrong

Mean standardised scores were divided into three groups, indicating low, medium and high levels of harsh discipline. Due to the presence of tied scores at the low end of the scale, these groups were unequal. 51% of parents reported low levels of harsh discipline, 20% medium levels and 28% high levels.

The child-reported version used one item:

- My parents smack me when I have done something wrong

44% of children reported never being smacked, 35% sometimes, 8% often and 13% were “always” smacked if they did something wrong. Mother- and child-reported scores showed a moderate correlation, $r=0.28$. As for the positive parenting measures, note that the child was asked about smacking by either parent, rather than just the mother.

6.2.11 Parental knowledge

Two aspects of parental knowledge were assessed: knowledge of what the child was doing (when not at school) and who the child was with (when out of the home). Knowledge of what the child was doing was measured using one item from the Alabama Parenting Questionnaire (see section 6.2.7). Both parent- and child-reported information were collected, but were explored separately.

Parent-reported version:

- When (child’s name) is not at school, you know what he/she is doing

Child-reported version:

- (when you are not at school) My parents know what I’m doing

Responses were on a 5-point scale for parents, and a 4-point scale for children, as for the positive parenting items (section 6.2.7). Nearly all (83%) of parents thought they always knew what their child was doing, compared to 47% of children who thought their parents always knew. Mother- and child-reported measures were only weakly correlated, $r=0.03$. This could partly reflect the fact that children were asked about both parents, rather than just the mother.

Knowledge of who the child is with was measured using one item, reported only by parents:

- About how often do you know who (child’s name) is with when he/she is not at home?

Responses were on a 4-point scale from “almost always” to “only rarely”. The majority of parents (88%) thought they always knew who their child was with. This item was, as expected, negatively correlated with parent-reported knowledge of what the child was doing, $r=-0.32$ (the negative rather than positive sign for the correlation coefficient reflecting the different direction of response codes for the two items).

6.2.12 Regular bedtime

This was measured using a single parent-reported item:

On weekdays during term time, does (child’s name) go to bed at a regular time?

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Responses were on a 4-point scale from (1) "always" to (4) "never". The first two responses were combined, giving 93% of children "always" or "usually" having a regular bedtime, with only 6% "sometimes" or "never" having one.

6.2.13 Difficulties with school work

This was assessed with 2 items. The first asked parents

- Which of these statements best describes how (child's name) is finding his/her school work?

Responses were on a 4-point scale: (1) (Child's name) *usually* finds school work hard, (2) (Child's name) *sometimes* finds school work hard, (3) (Child's name) finds *some parts* of school work hard, (4) (Child's name) *never* finds school work hard.

Due to low numbers giving response (1), responses 1 and 2 were combined to give a 3-part measure of difficulty with schoolwork: (1) usually/sometimes (17%), (2) some parts hard (56%) and (3) never (27%).

A second item asked parents

- Which of the following statements best describes how you feel about (child's name)'s *learning* experience at school so far?

Responses were on a 3-point scale: (1) The pace of learning at school is *too fast* (6%), (2) The pace of learning at school is *just right* (83%), (3) The pace of learning at school is *too slow* (11%).

6.2.14 School emotional engagement (*liking school*)

Emotional engagement with school was measured using parent and child reports, which were explored separately.

The parent-reported measure was based on 2 items, asking parents to think about the child during the "last month, on average":

- How often has (child's name) looked forward to going to school?
- How often has (child) been upset or reluctant to go to school?

Responses were measured using a 3-point scale: (1) "more than once a week", (2) "once a week or less", (3) "not at all". Responses to the two items were negatively correlated, $r=-0.33$. The first item was reversed and a mean score of the standardized items was calculated. These were divided into "low" vs. "high" emotional engagement: due to the high volume of tied scores, the split was unequal with only 25% of children classed as showing low emotional engagement.

The child-reported measure was based on 3 items, adapted from the school domain of the Multidimensional Life Satisfaction Scale for children (Huebner, 1994).

- I look forward to going to school
- I enjoy learning at school
- I hate school

Responses were measured on a 4-point scale: (1) never, (2) sometimes, (3) often, (4) always. Cronbach alpha (standardized scores) = 0.78. Mean scores (third item reversed) were divided into tertiles indicating low, medium and high school emotional engagement. There was a moderate negative correlation ($r=-0.29$, the negative sign expected given the opposite coding) between parent and child measures of emotional engagement

6.2.15 Media use

The child's exposure to media influences was assessed by asking about screen time and bedroom media equipment.

Screen time

Daily average screen time was calculated from parental reports of the child's average daily exposure to TV/DVDs and the average daily time spent playing electronic games on weekdays and weekends. Time was grouped as follows: under 2 hours (46%), 2 to under 3 hours (29%), 3 to under 4 hours (15%), and 4 or more hours daily (10%).

Bedroom media equipment

Parents reported on whether the child had any of the following in his/her bedroom:

- Television (64%)
- Computer, laptop or tablet computer (19%)
- Games console, including a handheld gaming device (51%)
- Internet access (17%)
- Mobile phone (12%)

These were looked at individually, and in addition a count was made of all the types of media equipment/facility (range 0-5). Around a quarter of children (26%) in the sample had no bedroom media equipment, while 12% had four or all five items on the list.

6.2.16 Play

Measures of quiet and active play were collected.

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

Quiet play

This was assessed using the following question to parents:

Not counting watching television or DVDs or using a computer or games console, how long does (child's name) spend in *quiet* play? (By quiet play I mean things like reading, playing board games, doing crafts, drawing or colouring-in and playing with Lego)

Active play

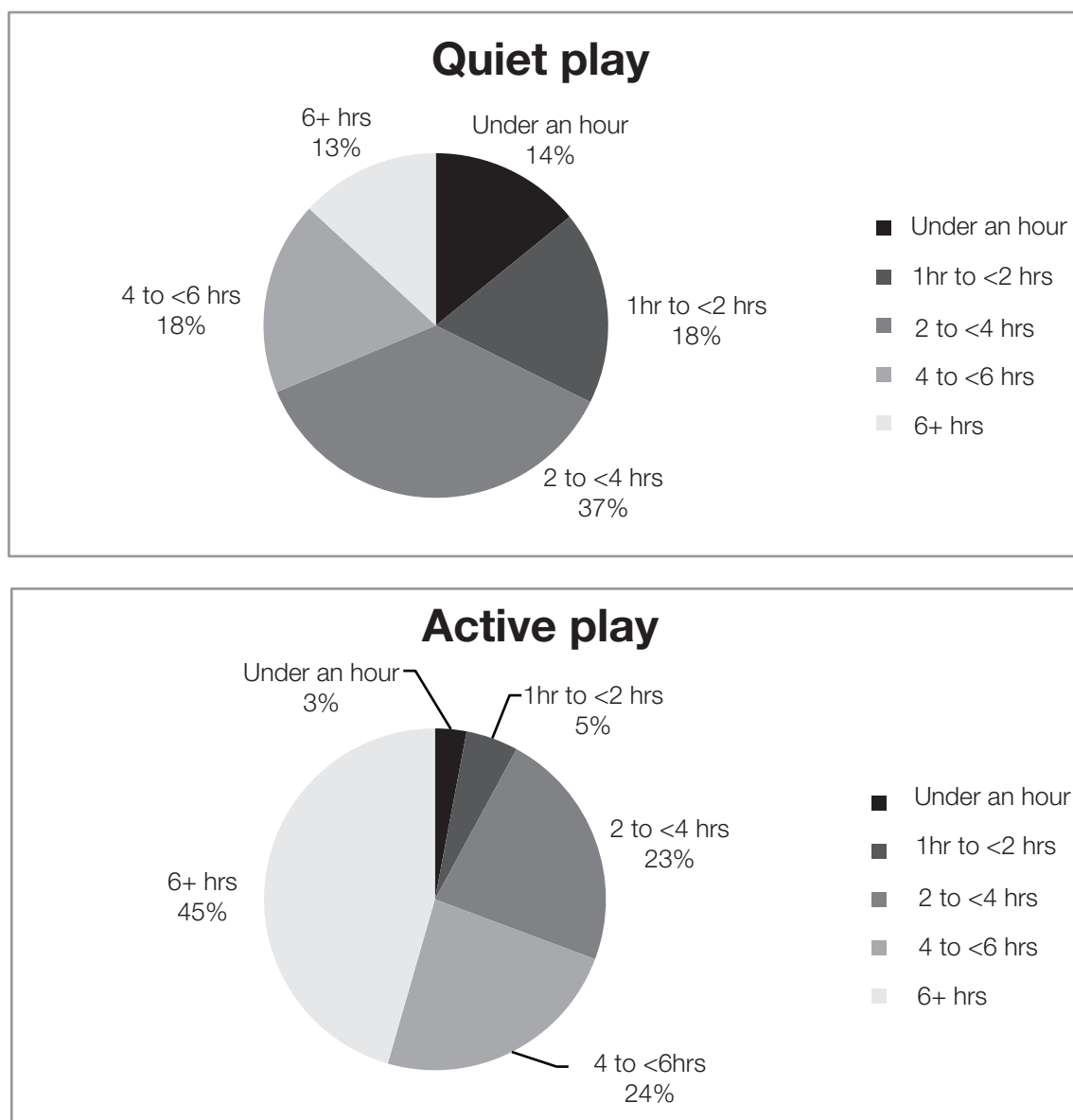
This was assessed using the following question to parents:

Still thinking about the times when (child's name) is *not* at school, and *not* attending an organised club, lesson or other activity, how long does he/she spend in *active* play? (By active play I mean things like running around, dancing, playing ball games, on a trampoline or on a bike.)

Questions were asked about quiet and active play time for a typical school day, and over a whole weekend. Since children's weekday play times might be subject to greater variability according to other constraining factors (such as after school childcare, time spent on organized leisure activities and school work) it was decided to focus on weekend measures.

Response scales for quiet and active play over a weekend (Saturday and Sunday combined) were as follows: (1) less than 30 minutes (2) 30 minutes, less than 1 hour (3) 1 hour, less than 2 hours (4) 2 hours, less than 4 hours (5) 4 hours, less than 6 hours (6) 6 hours or more. The first two categories were combined for each type of play, to give a 5-point scale. The distribution of quiet and active play among seven-year olds in the GUS sample is shown in Figure 6.1. This indicates that most seven-year olds spent more time on active than quiet play.

The two types of play showed only a weak correlation ($r=0.05$), and also did not appear correlated with the screen time measure (correlation for quiet play $r=-0.05$, for active play $r=0.00$).

Figure 6.1 Patterns of weekend quiet and active play at age 7**6.2.17 Extra-curricular organised leisure activities**

Parents reported on the child's regular participation during the previous 12 months in various organised leisure activities, excluding those forming part of the child's normal outside school hours childcare arrangements. "Regular" participation was defined as "at least once a week, for three months or more". Activities were:

- Community group or club (e.g. Cubs/Beavers, Rainbows/Brownies, Anchor Boys, or cultural group) – 48%
- Team sport (e.g. football, cricket or netball) – 36%
- Individual sport, coached or lessons (e.g. swimming, tennis, karate or gymnastics) – 64%
- Art, music, performance lessons (e.g. piano, dance, choir or drama) – 35%

GROWING UP IN SCOTLAND:

Family and school influences on children's social and emotional well-being

- Only 12% of children in the sample did not regularly do any of these four types of activity. 24% did one, 34% two, 25% three and 4% all four.

6.2.18 Friendship quality

The quality of relationship between the child and his/her friends was assessed using items from the Friends domain of the Multidimensional Life Satisfaction Scale for children (Huebner, 1994).

Children were asked for their agreement with 3 items:

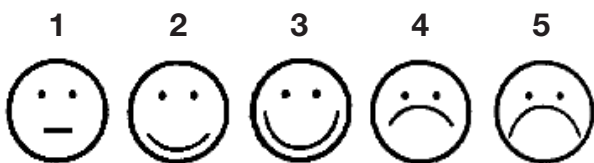
- My friends are nice to me
- I wish I had different friends
- My friends are mean to me

Responses were on a 4-point scale: (1) never, (2) sometimes, (3) often, (4) always. Taken together, these three items had low internal reliability (Cronbach alpha=0.49), due to the relatively low correlation of the second item with the other two. A measure of friendship quality was therefore based on the first and third items, which had more acceptable reliability (alpha=0.54). Mean standardized scores were divided into three groups. Due to the presence of tied scores, groups were unequal with 40% of children reporting high, 27% medium and 32% poor friendship quality.

6.2.19 Happiness at school playtimes

Children were also asked about their happiness at school playtimes (likely to reflect social relationships with other school pupils), by inviting them to

Press the number above the face that best shows how happy you feel at playtime and lunchtime



Due to low numbers, responses 3 to 5 were combined. This gave scores distributed as follows: very happy (65%), quite happy (22%) and not happy (13%).

6.2.20 Materialistic values

Children were asked for their agreement with three items, from the Material Values Scale for children (Opree, Buijzen, van Reijmersdal, & Valkenburg, 2011). These were:

- Do you think it's important to have expensive things?
- Does buying expensive things make you happy?
- Do you like children who have expensive things more than you like other children?

Responses were on a 4-point scale (1) No, not at all (2) No, not really (3) Yes, a little (4) Yes, very much.

This three-item scale was developed for children aged 8 to 11, with good internal reliability. However in the GUS sample, internal reliability was low (Cronbach alpha=0.47). It was therefore decided to use the items singly, and to create binary measures by comparing children disagreeing with a statement (responses 1 and 2) with those who were in agreement. 44% of children thought it was important to have expensive things, 63% agreed that expensive things made them happy, but only 27% liked children more if they had expensive things.

6.3 Results: univariate analyses of potential risk factors for low child social and emotional well-being

Tables in this section show percentages and odds ratios from logistic regression models of each well-being outcome. Odds ratios indicate the likelihood of the outcome associated with a given risk factor, when compared with the likelihood of the outcome in a reference group. Odds for the reference group are shown as 1.00. Odds ratios greater than one indicate an increased risk of low well-being, and an odds ratio less than one a reduced risk compared to the reference group. An asterisk system has been used to indicate statistical significance levels, or the probability p of a non-zero difference where *denotes $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

Table 6.1 Associations between child characteristics and low child well-being

		High total difficulties			Low life satisfaction		
		%	Odds ratio	<i>p</i>	%	Odds ratio	<i>p</i>
Child gender	Male	14.1	1.00		28.0	1.00	
	Female	8.7	0.58	***	23.0	0.77	**
Birth order	First born	12.4	1.00		23.1	1.00	
	Second or later born	10.5	0.83		27.8	1.28	**
Child general health	very good	7.6	1.00		23.7	1.00	
	good	18.7	2.82	***	29.2	1.33	*
	fair/poor	37.3	7.26	***	36.5	1.85	**
Child BMI status	normal/underweight	11.0	1.00		22.6	1.00	
	overweight/obese	12.6	1.17		25.8	0.94	
Developmental concern	none	7.9	1.00		24.2	1.00	
	reading/writing	17.8	2.52	***	35.0	1.68	***
	other	31.6	5.38	***	26.2	1.11	
	both	47.7	10.60	***	33.0	1.54	*
Sleep duration (nightly)	10.5 hours or more	8.7	1.00		23.5	1.00	
	Less than 10.5 hours	14.7	1.82	***	27.9	1.26	*
Sleeps through night	always	9.6	1.00		24.8	1.00	
	6 nights/week	13.2	1.43		29.2	1.25	
	5 or fewer nights/week	26.2	3.33	***	28.9	1.24	

Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note: **p*<0.05, ***p*<0.01, ****p*<0.001

Table 6.2 Associations between maternal and household characteristics and low child well-being

		High total difficulties			Low life satisfaction		
		%	Odds ratio	p	%	Odds ratio	p
Mother's ethnic group	White	11.0	1.00		25.3	1.00	
	Minority	24.1	2.57	**	31.5	1.36	
Mother's education	no qualifications	23.9	1.00		25.0	1.00	
	lower level standard grades/vocational	13.9	0.51	*	25.6	1.03	
	upper level standard grades/intermediate vocational	17.3	0.67		26.2	1.06	
	Highers/advanced vocational	8.5	0.29	***	25.7	1.04	
	Degree-level academic/vocational	6.2	0.21	***	25.3	1.01	
Mother's employment	Full time	7.1	1.00		25.4	1.00	
	part time	8.8	1.26		25.3	1.00	
	not employed	18.9	3.03	***	25.7	1.02	
Mother's general health	excellent/very good	6.3	1.00		23.5	1.00	
	good	13.0	2.22	***	26.3	1.16	
	fair/poor	26.5	5.37	***	31.0	1.46	**
Household type	both natural parents	8.4	1.00		23.8	1.00	
	couple, stepfather	17.6	2.32	***	27.2	1.19	
	lone mother	20.7	2.84	***	31.3	1.45	**
Siblings in household	None	13.8	1.00		22.8	1.00	
	One	10.9	0.76		26.2	1.20	
	Two or more	11.0	0.77		25.4	1.15	
Household income	q1- bottom	17.7	1.00		28.9	1.00	
	q2	16.2	0.90		27.5	0.93	
	q3	7.7	0.39	***	25.5	0.84	
	q4	4.7	0.23	***	23.3	0.75	*
	q5 - top	3.3	0.16	***	19.3	0.59	***
SIMD area deprivation	q1 - least deprived	5.9	1.00		24.7	1.00	
	q2	7.1	1.21		25.1	1.02	
	q3	11.5	2.07	***	25.3	1.03	
	q4	13.8	2.54	***	25.2	1.03	
	q5 - most deprived	18.8	3.70	***	27.0	1.12	
Urban-rural	large urban	12.3	1.00		26.2	1.00	
	other urban	11.8	0.96		23.2	0.85	
	accessible small towns	10.1	0.81		22.6	0.82	
	remote small towns	14.2	1.18		31.8	1.32	
	accessible rural	9.1	0.71		28.4	1.12	
	remote rural	8.9	0.70		31.4	1.29	

Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

Table 6.3 Associations between life events and low child well-being

		High total difficulties			Low life satisfaction		
		%	Odds ratio	<i>p</i>	%	Odds ratio	<i>p</i>
Death of a family member	no	10.9	1.00		24.4	1.00	
	yes	13.3	1.25		29.2	1.28	*
Illness/accident in family	no	11.2	1.00		25.0	1.00	
	yes	14.6	1.36		32.1	1.42	*
Child accident/injury	none	11.5	1.00		25.0	1.00	
	one	9.0	0.76		25.9	1.05	
	two or more	19.6	1.89	*	32.8	1.47	
Mental health/substance use problems in family	no	11.1	1.00		25.4	1.00	
	yes	23.8	2.50	**	28.3	1.16	
Parental conflict	no	10.6	1.00		25.1	1.00	
	yes	26.5	3.01	***	32.1	1.41	
Moving house	no	10.4	1.00		25.4	1.00	
	yes	17.6	1.84	***	25.8	1.02	

*Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

Table 6.4 Associations between parenting and low child well-being

Parent-reported measures	Positive parenting	high	medium	low	high	low	High total difficulties			Low life satisfaction							
							%	Odds ratio	p	%	Odds ratio	p					
Parent-reported measures	Positive parenting	high	medium	low	9.9	10.7	13.2	1.00	1.09	1.38	19.3	23.8	30.7	1.00	1.31	1.85	***
		Warmth in mother-child relationship	high	low	6.0	21.1	1.00	4.17	***	22.4	30.9	1.00	1.55	***			
			Conflict in mother-child relationship	low	medium	high	0.7	6.0	26.6	1.00	9.16	52.10	19.1	24.1	32.7	2.05	***
Harsh discipline	low	medium		high	8.5	9.5	17.7	1.00	1.00	1.12	2.32	24.0	25.5	27.9	1.00	1.08	1.22
	Parent knows what child is doing	always	often	sometimes/never	10.0	15.5	35.1	1.00	1.66	4.90	24.6	30.2	25.7	1.00	1.33	1.06	*
		Parent knows who child is with	All of the time	Mostly/sometimes/rarely	10.5	17.7	1.00	1.82	***	24.3	34.3	1.00	1.63	***			
Regular bedtime			Always/usually	Sometimes/never	10.4	25.6	1.00	2.97	***	25.4	26.0	1.00	1.03	***			
Child-reported measures	Positive parenting	high	medium	low	10.5	11.3	12.5	1.00	1.12	1.22	12.1	24.4	2.04	1.00	***		
		Harsh discipline	never	sometimes	8.3	12.7	1.00	1.61	***	20.7	26.7	1.00	1.39	***			
			Parents know what child is doing	often/always	sometimes	15.7	10.7	9.6	2.07	1.00	0.88	16.8	30.2	2.15	1.00	***	
	never	often/always	sometimes	10.7	9.6	13.4	1.00	0.88	1.29	35.6	2.74	***					

Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note: *p<0.05, **p<0.01, ***p<0.001

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

Table 6.5 Associations between school experiences and low child well-being

Parent-reported measures	Pace of learning at school		High total difficulties			Low life satisfaction		
			%	Odds ratio	p	%	Odds ratio	p
		about right	11.5	1.00		25.4		
		too slow	9.9	1.18		22.1	0.84	
		too fast	31.4	4.17	***	32.4	1.41	
	Child finds schoolwork hard	never	6.0	1.00		20.2	1.00	
		some parts	11.5	2.05	***	27.0	1.46	***
		sometimes/ always	19.9	3.91	***	29.0	1.62	***
		Emotional engagement	6.4	1.00		22.5	1.00	
		low	25.2	4.95	***	33.6	1.74	***
Child-reported measure	Emotional engagement	high	9.9	1.00		12.8	1.00	
		medium	10.1	1.45	**	20.9	2.70	***
		low	14.0	1.49	*	41.5	4.76	***

Base: families at sweep 7 with singleton child, where mother was main carer interviewed (N=3,279) Note: * p<0.05, ** p<0.01, *** p<0.001

Table 6.6 Leisure interests, friendships and low child well-being

		High total difficulties			Low life satisfaction		
		%	Odds ratio	<i>p</i>	%	Odds ratio	<i>p</i>
Parent-reported measures	Attends extra-curricular leisure activity	none	20.8	1.00	34.0	1.00	
		one	16.4	0.74	25.7	0.67	*
		two	9.3	0.39	23.8	0.60	***
		three	6.1	0.25	24.1	0.62	***
		four	4.2	0.17	20.9	0.51	**
	Bedroom TV	no	7.9	1.00	26.2	1.00	
		yes	13.4	1.79	25.1	0.95	***
Child-reported measures	Friendship quality	good	7.9	1.00	13.5	1.00	
		medium	8.1	1.03	25.5	2.20	***
		poor	18.6	2.67	40.5	4.38	***
	Happiness at school playtimes	Very happy	11.0	1.00	18.1	1.00	
		Quite happy	7.7	0.67	32.4	2.17	***
		Not happy	19.7	1.98	50.2	4.58	***

Base: families at sweep 7 with singleton child, where mother was main carer interviewed
(*N*=3,279) Note: **p*<0.05, ***p*<0.01, ****p*<0.001

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

6.4 Results: multivariate analyses of potential risk factors for low child social and emotional well-being

Two separate multivariable logistic regression models (one for high behavioural and emotional difficulties, and one for low life satisfaction) allowed for simultaneous assessment of various factors that were found to have statistically significant (defined as $p < 0.05$) univariate associations with the outcome in question (see Appendix 6.3).

6.4.1 Treatment of missing data

To reduce bias and increase statistical power, missing information for measures used in this analysis was imputed using the multiple imputation (mi) package in Stata SE 12.1. Analysis results were combined over 20 imputed datasets ($N=3254$). This excludes cases with missing information on either main outcome.

6.4.2 Other modelling issues

Some measures were modelled using a reduced number of categories to those shown in the exploratory univariate analyses already described. This was done after univariate analysis suggested simplification was appropriate. For instance, screen time was reduced to a binary measure contrasting children using screens for four or more hours daily, with those using screens for less than four hours. Similar considerations led to the simplification of maternal education and measures of active and quiet play. Additionally, participation in after school activities was reduced to a simple variable indicating any or no participation, after it was found that the number of activities did not add any extra information.

There were two sets of strongly correlated measures, which were modelled separately to reduce problems associated with collinearity. These were household income and the index of material deprivation, and the two measures of children's difficulty with school (finding the work hard, and finding the pace of learning too fast). Various alternative models were therefore constructed using only one measure of these two pairs. Table 6.7 and Table 6.8 each show one set of measures only: more information on the effects of using alternative measures has been provided in the note below these tables.

6.4.3 Guide to tables

Table 6.7 and Table 6.8 show odds ratios from logistic regression models of each well-being outcome. Odds ratios indicate the likelihood of the outcome associated with a given risk factor, when compared with the likelihood of the outcome in a reference group. Odds for the reference group are shown as 1.00. Odds ratios greater than one indicate an increased risk of low well-being, and an odds ratio less than one a reduced risk compared to the reference group.

As in the univariate analyses (Appendix 6.3), statistical tests were used to compare each response category with a reference category. As before, an asterisk system is used in tables to denote the level of statistical significance of these tests (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$). In addition, for all measures with more than two ordered response categories, statistical tests

to assess the overall effect of the measure were conducted. Here, a letter system is used to denote the statistical significance of a measure overall (a $p < 0.05$, b $p < 0.01$, c $p < 0.001$). Note that the absence of such a letter code indicates that some measures were not clearly associated with the outcome overall, despite statistically significant ($p < 0.05$) effects for some individual response categories. The inclusion of individual response categories as extra dummy variables in models increases the chances of finding a statistically significant difference. Consequently, in the Results chapter section 3.4, more importance has been attached to an association that was significant for the overall measure⁷.

7 For instance, in Table 6.7 below, consider the association between child-reported smacking and high total difficulties score. Despite the statistically significant contrast between “sometimes smacking” and “never smacking”, there was no difference between “always/often” smacking and “never smacking”. The lack of a dose-response relationship in the size of the coefficients together with the non-significant overall effect of child-reported smacking suggests that the difference between “sometimes” and “never” smacking could be a chance result.

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

Table 6.7 Multivariable model of high behavioural and emotional difficulties, age 7

			Stage 1		Stage 2	
			Odds ratio	<i>p</i>	Odds ratio	<i>p</i>
Child characteristics	Gender (male)	female	0.81		0.79	
	Child's general health (very good)	good	1.48	a	1.36	
		fair/poor	2.01	*	1.69	
	Sleep duration (10.5 hours or more)	less than 10.5 hours	1.33		1.31	
	Sleeping through the night (7 days/week)	6 days/week	0.76	a	0.84	a
		<6 days/week	1.73	*	1.84	**
	Developmental concern	Concern over reading/writing	1.31		1.30	
		other concern	4.50	***	4.40	***
		both concerns	5.93	***	5.88	***
	Maternal characteristics	Mother's ethnic group (white)	minority	1.70		1.69
Maternal education (degree/Highers)		Standard grades	1.73	**a	1.70	**a
		None	1.52		1.51	
Mother's employment (FT)		PT	1.02		0.98	
		not working	1.21		1.13	
Mother's general health (excellent/very good)		good	1.30	b	1.23	b
	fair/poor	2.05	***	2.09	***	
Family characteristics	Index of material deprivation (none) ¹	one	1.18		1.16	
		two	1.15		1.24	
		three or more	1.36		1.44	
	Household type (lives with both parents)	mother and non biological father	1.27		1.41	
		lone parent mother	1.34		1.40	
	Area deprivation (SIMD) quintile (q1 - least deprived)	q2	1.10		1.18	
		q3	1.54		1.59	
		q4	1.33		1.27	
		q5 (most deprived)	1.88	*	1.97	
	Major events since last survey	Mental health/substance use problems in family (no)	yes	2.62	*	2.44
no			1.03		0.96	
Moved home (no)		yes	1.24		1.16	
Accident/injury to child (none)		one	0.75		0.75	
		two or more	0.85		0.77	

Parenting	Mother-child warmth (high)	low	1.78	***	1.71	***
	Mother-child conflict (low)	medium	6.08	***c	5.84	***c
		high	22.82	***	22.74	***
	Use of smacking (low)	medium	1.12		1.12	
		high	1.24		1.19	
	Mother knows what child is doing (always)	often	1.13	c	1.08	c
		sometimes/never	4.78	***	4.59	***
	Mother knows who child is with (all of the time)	most/some of the time	0.72		0.72	
	Regular bedtime (always/usually)	sometimes/never	1.36		1.48	
Leisure activities	Active play at weekend (2-6 hrs)	under 2 hrs	1.43		1.33	
		6+ hrs	1.06		1.00	
	Quiet play at weekend (2-6 hrs)	under 2 hrs	1.05		1.06	
		6+ hrs	1.30		1.35	
	Daily screen time (under 4 hrs)	4+hrs	1.27		1.28	
	TV in child's bedroom (no)	yes	0.94		0.88	
	Extra-curricular leisure activity (yes)	no	1.04		0.96	
School	Emotional engagement with school (high)	low	2.18	***	2.49	***
	Pace of learning at school (about right) ²	too slow	1.24	a	1.33	a
		too fast	1.88	*	1.92	*
Child-reported parenting	Parent smacks child when naughty (never)	sometimes			1.48	*
		often/always			1.24	
	Emotional engagement with school (high)	medium			0.84	
		low			0.62	*
Child-reported school experience	Friendship quality (good)	medium			1.16	c
		poor			2.26	***
Child-reported friendships	Happiness in school playground (high)	medium			0.67	
		low			1.32	
Child-reported materialism	Important to have expensive things (disagree)	agree			0.99	
	Like children with expensive things more (disagree)	agree			1.86	***

Base: N=3254, 20 sets of imputed data. Note: Unless otherwise stated, measures were reported by parents. All measures were mutually adjusted. Wald tests used to compare response categories with reference group: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Wald tests for overall effect of factor: a $p < 0.05$, b $p < 0.01$, c $p < 0.001$. ¹Modelling with income in place of material deprivation gave similar non-significant association with high total difficulties score. ²Substituting the measure of finding schoolwork hard for this measure did not find a similar association with difficulties score.

GROWING UP IN SCOTLAND:

Family and School influences on children's social and emotional well-being

Table 6.8 Multivariable model of low life satisfaction, age 7

			Stage 1		Stage 2	
N=3241			Odds ratio	<i>p</i>	Odds ratio	<i>p</i>
Child characteristics	Gender (male)	female	0.84	*	1.04	
	Child's general health (very good)	good	1.08		1.08	
		fair/poor	1.25		1.17	
	Birth order (first born)	not first born child	1.27	*	1.14	
	Developmental concern	Concern over reading/writing	1.20		1.45	*
		other concern	0.83		0.88	
		both concerns	1.06		1.11	
	Sleep duration (10.5 hours or more)	less than 10.5 hours	1.12		1.04	
Maternal characteristics	Mother's general health (excellent/very good)	good	0.94		0.92	
		fair/poor	1.00		1.18	
Household characteristics and deprivation	Household type (lives with both parents)	mother and non biological father	1.07		1.19	
		lone parent mother	1.15		1.15	
	Index of material deprivation (none) ¹	one	0.86		0.81	
		two	1.24		1.23	
	three or more	1.18		1.27		
Major events since last survey	Death/illness/accident in family (no)	yes	1.33	**	1.34	**
Parenting	Positive parenting (high)	medium	1.24	a	1.07	
		low	1.56	**	1.32	
	Parent knows what child is doing (always)	often	0.97		0.94	
		sometimes/never	0.72		0.77	
	Parent knows who child is with (always)	mostly/sometimes/rarely	1.30	*	1.24	
	Mother-child warmth (high)	low	1.17		1.08	
Mother-child conflict (low)	medium	1.16	b	1.03		
	high	1.50	**	1.25		
Leisure activities	Organised extra-curricular leisure activity (yes)	no	1.32		1.36	

School	Emotional engagement with school (high)	low	1.33	*	1.06	
	Child finds schoolwork hard (never) ²	some parts	1.37	**a	1.29	*
		sometimes/always	1.34	*	1.19	
Child-reported parenting	Positive parenting (high)	medium			1.70	***c
		low			2.87	***
	Parent smacks child when naughty (never)	sometimes			1.19	b
		often/always			1.55	***
	Parents know what child is doing (often/always)	sometimes			1.53	***c
		never			1.78	***
Child-reported school experience	Emotional engagement with school (high)	medium			2.05	***c
		low			2.57	***
Child-reported friendships	Friendship quality (good)	medium			1.36	*c
		poor			2.08	***
	Happiness in school playground (high)	medium			1.42	*c
		low			2.17	***

Note: Base: N=3254, 20 sets of imputed data. Unless otherwise stated, measures were reported by parents. Missing data for measures used in this analysis was imputed using the multiple imputation (mi) package in Stata SE 12.1. Results were combined over 20 imputed datasets (N=3241, excludes cases with missing information on either main outcome). All measures were mutually adjusted. Wald tests used to compare response categories with reference group: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Wald tests for overall effect of factor: a denotes $p < 0.05$, b $p < 0.01$, c $p < 0.001$.¹Substituting household income for material deprivation also produced a NS association with low life satisfaction.²Substituting finding the "pace of learning is too fast" for this measure produced a NS association with low life satisfaction.



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