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National Longitudinal Study of Children

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SOCIAL-EMOTIONAL AND BEHAVIOURAL OUTCOMES IN EARLY ADOLESCENCE

COHORT '98

REPORT 8

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SOCIAL-EMOTIONAL AND BEHAVIOURAL OUTCOMES IN EARLY ADOLESCENCE

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EXECUTIVE SUMMARY

This report documents the social, emotional and behavioural outcomes of the 13-years-olds in the ***Growing Up in Ireland*** (GUI) study and examines factors that are associated with these outcomes. The analysis is based on data collected from 7,423 families in the Child ('98) Cohort of ***Growing Up in Ireland*** interviewed first in 2007/8 at Wave 1 when the children were 9 years of age, and again in 2011/12 at Wave 2 when the children were 13 years of age.

The work presented in this report is informed by existing research on adolescent mental health, and on puberty and changing family and peer relationships which characterise the teenage years or adolescent period of development. Adolescence is frequently marked by the onset of puberty. Puberty is triggered by the release of hormones, resulting in changes in body composition and the development of sexual characteristics, culminating in the achievement of reproductive maturity. The onset of puberty tends to occur earlier for girls than for boys by about 18 to 24 months, and on average happens between 12 and 13 years. There is wide variation in the age of onset, and the influence of the timing of puberty on adolescent social and emotional well-being has been the focus of considerable research. Early age of onset of puberty is proposed to be a risk factor for mood and behaviour problems due to the mismatch in timing between physical maturity on the one hand (which is advanced when puberty begins early), and cognitive, emotional and social maturity on the other hand, which is less advanced. In addition, social stressors, such as the transition to secondary school and changing social expectations and behaviour norms can heighten these risks even more. This theory is well supported for girls, although the research on the negative impact of boys' early maturity is less clear.

As well as puberty, the changing nature of parent and peer relationships has been highlighted as a key feature of adolescence. The transition from childhood to adolescence brings important changes in the role of peer (same age-mates) relationships in the lives of teenagers: young people spend more time with same age-mates, and increasingly without adults being present. Peers become an increasingly important source of influence on beliefs, behaviours and well-being. Coinciding with these changes in peer relationships, adolescents' growing sense of independence affects and is affected by their relationships with parents, often resulting in a challenge to parental authority and de-idealisation of parents. Teenagers' perceptions of support from parents tends to decline from early to mid-adolescence, and both the frequency and intensity of parent-adolescent conflict tends to peak in early and mid-adolescence and decline thereafter. Adolescents become more likely to question the legitimacy of parental authority and this lies at the root of much adolescent-parent conflict as independence is negotiated. Pubertal changes, peer and parent relationship changes, and the transition to secondary school make the adolescent period a time of challenge and opportunity. A rise in rates of emotional and behavioural difficulties over the period of adolescence has been well documented. Certain disorders, such as eating disorders and mood disorders like depression tend to have their onset in adolescence, and risk-taking behaviours, such as smoking, consumption of alcohol and experimentation with drugs tend to be seen for the first time during adolescence.

Against this backdrop of existing research, four research questions were investigated based on ***Growing Up in Ireland*** Cohort '98 data: 1) How are 13-year-olds faring in terms of their social, emotional and behavioural development? 2) How do social-emotional and behavioural outcomes at 13 years relate to well-being/difficulties at 9 years? 3) What factors are associated with outcomes at 13 years? 4) What factors are associated with stability and change in well-being/difficulties from 9 to 13 years?

In considering the findings presented in this report, it is important to note the scales measuring parent-child closeness, parental responsiveness (meaning the extent to which parents were tuned into and responded appropriately to their children's needs) and parental demandingness (meaning the extent to

which parents make demands of their children and expect them to behave in a manner appropriate to their stage of development) demonstrated less than ideal reliability, so findings based on these scales should be interpreted with some caution.

HOW ARE 13-YEAR-OLDS FARING IN TERMS OF THEIR SOCIAL, EMOTIONAL AND BEHAVIOURAL DEVELOPMENT?

In relation to the first research question, the findings tell us that the majority of 13-year-olds in Ireland were faring well, with no significant difficulties; 88 per cent of the 13-year-olds had scores within the typical[1] range on the Strengths and Difficulties Questionnaire (SDQ), a commonly used screening measure for social-emotional and behavioural difficulties (parent report). One-in-16 (6.25%) of the young people were displaying significant levels of difficulty. Sixteen per cent of the 13-year-olds scored above the cut-off on the Short Moods and Feelings Questionnaire (SMF; young person report) indicating risk of depression, and significantly more girls (18%) than boys (14%) were categorised into the 'at risk' group.

Young people's reports on frequency of engagement in 15 antisocial behaviours (ASB) (including fare evasion, shoplifting, graffiti, damaging another's property, hit, kicked or punched another, involved in a serious fight) indicated that the majority of young people had not engaged in ASB and among those who had, it had occurred on one occasion only. Eighty-four per cent of the sample reported either that they had never engaged in any of the behaviours (66%), or in one of the behaviours once (18%). A further 7 per cent engaged in two of the behaviours at least once, meaning that 91 per cent of the sample engaged in low levels of ASB overall. About 3.5 per cent of the sample engaged in four or more of the behaviours at least once, although many of the behaviours occurred at low frequency. Boys engaged in higher levels of ASB than girls. Seven per cent of the sample had previously been in trouble with the Gardaí (police) and unsurprisingly these young people had engaged in significantly more ASB than those who had not been in trouble with the Gardaí.

Young people's reports of their engagement in substance use (drugs, alcohol, etc) was also considered: 9 per cent of the 13-year-olds said they had previously smoked a cigarette, but only 2 per cent of the sample said they currently smoked, and half of these smoked every day. Among those who smoked the average number of cigarettes smoked per week was 17.46. Boys and girls were equally as likely to have smoked or currently smoke. Experimentation with other types of substances was less common: 1.4 per cent said they had previously smoked cannabis (boys more likely than girls), 2.9 per cent said they had sniffed glue, paint or petrol to get high (girls more likely than boys) and 0.4 per cent said had experimented with 'harder' drugs, such as cocaine (no differences between boys and girls). All reported differences were statistically significant.

Use of alcohol was more prevalent – 15.5 per cent of the sample reported that they had previously had a whole alcoholic drink (boys more likely than girls). Seven per cent of the sample had consumed a whole drink in the previous year (boys more likely), and of those, 8.5 per cent drank alcohol at least once a month – this represents 0.6 per cent of the entire sample. Of the 7 per cent who drank in the past year, half had previously been drunk. Although boys were more likely to drink alcohol, there was no gender difference in relation to the frequency of being drunk.

These findings can be compared with findings on outcomes of children in other countries including UK, Norway, Denmark, Sweden, and Australia. These comparisons are possible because studies from these countries used the same measures as those used in ***Growing Up in Ireland*** and because the ages of the children in the samples were similar. The ***Growing Up in Ireland*** 13-year-olds compare favourably with children from the UK, Australia and Norway, where rates of difficulties are generally higher than those reported among the ***Growing Up in Ireland*** sample. However, in contrast, rates of social-emotional and behavioural difficulties indicate that 13-year-olds in Ireland are faring *less* well than their same-aged counterparts in Sweden and Denmark.

1 This a pre-established range of scores determined by the scale authors.

Direct comparison between ***Growing Up in Ireland*** data and data collected in other Irish studies of youth mental health is difficult owing to the different measures used and the broader age ranges of the other samples; notwithstanding these study differences, the rates of difficulties seem to be slightly lower among the ***Growing Up in Ireland*** sample. Also, although these figures suggest that 9-16 per cent of 13-year-olds have experimented with alcohol and cigarette smoking and about 1 per cent of the sample are engaging in these behaviours on a more frequent basis, these prevalence rates are slightly lower than those reported in other national and international studies, most notably the Health Behaviour of School-Aged Children Study. There may be the possibility of under-reporting of these behaviours among the ***Growing Up in Ireland*** sample, given that these data, unlike in HBSC, are not collected anonymously. The possible under-reporting means that rates of difficulty among the ***Growing Up in Ireland*** sample may be underestimated.

HOW DO SOCIAL-EMOTIONAL AND BEHAVIOURAL OUTCOMES AT 13 YEARS RELATE TO WELL-BEING/ DIFFICULTIES AT 9 YEARS?

The second research question addressed how social-emotional and behavioural outcomes changed or stayed the same between 9 and 13 years. This analysis was based upon mother report of social, emotional and behavioural difficulties using the SDQ standardised questionnaire at both waves. The analysis pointed to strong stability across time – if difficulties were present at 9 years it was likely that difficulties would continue at 13 years; the absence of difficulties was also stable over time. About 13 per cent showed evidence of change in risk status over time, either no longer at risk or now at risk. An estimated 8 per cent of the sample or one-in-12 young people was at risk at Wave 1, but was no longer at risk by Wave 2, reflecting an improvement in social-emotional and behavioural outcomes over time. A further one-in-20 young people (5% of the sample) was at risk at Wave 2, having not been at risk at Wave 1 reflecting deterioration over time. Thus, most of the children showed stability in social-emotional and behavioural outcomes over time, with 80 per cent classified as having no significant difficulties at either wave, and 7 per cent of the sample having scores in the 'at risk' category at both waves.

WHAT FACTORS ARE ASSOCIATED WITH OUTCOMES AT 13 YEARS?

The third research question considered factors that were associated with or predicted social-emotional and behavioural outcomes for boys and girls. Initial analyses indicated that timing of puberty had important associations with social-emotional and behavioural outcomes. Put simply, for boys being a late maturer was associated with higher depressed mood and higher internalising difficulties (anxiety, depressive symptoms) but lower levels of antisocial behaviour (ASB). Early maturing boys were more likely to have had a drink in the past year, but not more likely to have smoked cigarettes. For girls, being an early maturer was associated with higher depressed mood, higher internalising and externalising (acting out behaviours) scores and higher levels of ASB than being on-time or a late maturer. Early maturing girls were also significantly more likely to have ever smoked and to have had an alcoholic drink in the past year. This finding suggests, in line with other research, that being an early maturer is a risk factor for poorer social-emotional and behavioural outcomes among girls, but the same does not hold true for boys. Instead, late maturing boys had a higher risk of internalising difficulties/depressed mood. However, the picture is likely to be more complicated and aspects of the young person's context also need to be accounted for. Further analyses revealed that the effect of early or late pubertal status on social-emotional and behavioural outcomes often diminished, once family and peer-relationship variables were accounted for. Thus, early or late onset of puberty per se may not matter significantly for social-emotional and behavioural outcomes; what might matter more is how early or late maturation interacts with the relationships that teenagers have with their parents and peers, and in turn how these relationships influence social-emotional and behavioural outcomes.

The most important predictors of internalising difficulties and depressed mood for girls and boys related to problems with peer relationships – involvement in bullying, as a victim or a perpetrator, and poorer quality peer relationships were linked to more difficulties. The picture was less clear in terms of the number of

friends; for girls, having fewer friends was associated with greater internalising difficulties, while for boys having more friends at Wave 2 was associated with greater difficulties. Where friends were older, girls reported higher levels of depressed mood, but this was not the case for boys. The conclusion that might be drawn is that the quality of relationships with friends, and whether or not one is involved in bullying, are more consistent predictors of internalising difficulties and depressed mood than either the number of friends or the age profile of those friends.

The nature and quality of peer relationships were also important predictors of girls' and boys' externalising difficulties and antisocial behaviour (ASB). As noted previously, levels of ASB were low across the sample. However, having more friends, older friends, being a perpetrator of bullying at age 9, and higher levels of alienation from peers were all associated with higher levels of ASB. For boys, but not girls, pubertal maturation also independently predicted ASB: late maturing boys reported lower ASB while early maturing boys reported higher ASB.

Smoking, drinking and experimenting with drugs was also predicted by factors associated with the peer group, perhaps unsurprisingly, as these are behaviours that typically occur within the context of the peer group. Being a perpetrator of bullying and having older friends significantly predicted both boys' and girls' smoking behaviour and experimentation with drugs, and boys' alcohol consumption. Girls' alcohol consumption was predicted by having older friends and being a victim (not perpetrator) of bullying. Boys with smaller groups of friends (fewer than five friends) were also less likely to have consumed alcohol.

Relationships with families also mattered in terms of 13-year-olds' social-emotional and behavioural outcomes, and in particular high levels of parent-child conflict, as reported upon by parents, were an important predictor of negative outcomes. For girls' internalising difficulties and depressed mood, processes involving mothers emerged as being more important than processes involving fathers. Mother-daughter conflict predicted depressed mood at age 13, and even if conflict had declined from ages 9 to 13, having had high conflict at age 9 still had an effect. Having low levels of closeness (reported upon by parents) at both waves, and low closeness at Wave 2, even if it had been high at Wave 1 predicted greater difficulties for girls. Girls who reported that their fathers were low in responsiveness at both waves also had higher depressed mood. Girls who reported that their mothers and fathers granted them autonomy and freedom had lower levels of depressed mood.

For boys' internalising difficulties and depressed mood, again parent-child conflict had a key role, although it was conflict with fathers, rather than with mothers that mattered more, particularly in terms of depressed mood. Boys who had high conflict with fathers (as reported by fathers) at Wave 1, regardless of whether it remained high or had decreased by Wave 2, had higher depressive symptoms. Also, boys with low levels of father-child closeness at Wave 2 had higher levels of difficulties. As was the case for girls, boys who reported their fathers to be low in responsiveness had higher internalising difficulties and depressed mood, and this finding also held with respect to mother responsiveness. In contrast, increases in fathers' responsiveness across waves appeared to be protective, as these boys had lower internalising difficulties. Fewer difficulties also emerged when mothers engaged in more monitoring behaviours and when boys perceived that their mothers granted them appropriate autonomy. Thus, for both boys and girls, autonomy-granting was a protective factor. It is important to note that boys' and girls' internalising and externalising difficulties may also give rise to difficulties in the parent-child relationship, such as lower closeness and higher conflict – the associations among these factors are likely to be bidirectional over time.

Broadly similar family- and parenting-related factors predicted externalising difficulties and ASB for boys and girls. High mother-child conflict at Wave 2 was associated with more difficulties for girls, regardless of levels of conflict at Wave 1. For boys, having had high levels of mother-child conflict at either or both waves significantly predicted externalising difficulties. High father-child conflict at Wave 2 regardless of whether it was high at Wave 1 was associated with higher difficulties for both boys and girls. Similar findings

emerged in relation to parent-child closeness: low closeness to mothers at either or both waves for girls was associated with greater difficulties, whereas boys experienced greater difficulties when mothers' or fathers' responsiveness and closeness to mothers or fathers decreased between waves (from high to low). Mothers' autonomy granting was associated with lower ASB and externalising difficulties for girls, while fathers' autonomy granting was associated with lower externalising difficulties (but not ASB) for boys.

In terms of smoking behaviour, perceptions of mothers' autonomy granting were associated with a decreased likelihood of having smoked for girls, while for boys, low closeness with mothers (at either or both waves), a decline in closeness to fathers between waves, and low father responsiveness at both waves were associated with an increased likelihood of smoking. Fathers' parenting was particularly important in terms of boys' alcohol consumption: high father-child conflict (at either or both waves) was associated with a higher likelihood of consuming alcohol, as well as low responsiveness at both waves. Low maternal responsiveness at both waves was also associated with a higher likelihood of boys consuming alcohol. For girls, low paternal responsiveness at Wave 2 (regardless of level at Wave 1) and a decrease in maternal responsiveness between waves was a risk for alcohol consumption. Increases in father-child conflict and a decline in maternal responsiveness between waves were both associated with an increased likelihood of having experimented with drugs (boys and girls combined). As noted previously, these types of behaviours among young people may also give rise to difficulties in the parent-child relationship.

In terms of broader family economic and structural factors, the main conclusion that can be drawn is that when other processes that occur within the household are accounted for, these broader economic and structural factors are often non-significant predictors, although there is a number of noteworthy patterns. For example, girls whose mothers' highest level of education was a lower secondary education (relative to girls whose mothers had a degree) were more likely to smoke and consume alcohol and had higher levels of internalising (but not externalising) difficulties. Interestingly, girls whose mothers had gone onto third-level non-degree education had lower levels of depressed mood and ASB than girls whose mothers had a degree. Boys whose mothers' highest level of education was a lower secondary education had higher internalising and externalising difficulties, but no association was found between maternal education and boys' depressed mood, ASB or drinking, smoking or drug-taking behaviour.

In relation to family income level, no effect was observed for girls' or boys' drinking or smoking behaviour, (except somewhat spuriously, boys in the second income quintile were less likely to smoke than those in the highest income quintile). Girls in the lowest (in comparison with the highest) income quintile had higher levels of internalising and externalising difficulties – this pattern did not hold for boys. Boys and girls in the lowest income quintile (in comparison with the highest) had lower levels of depressed mood, and those in the second (for boys) and third (for girls) income quintile had lower ASB (in comparison with those in the highest income quintile). This is a somewhat spurious finding. None of the other income quintile groups differed from the highest group on the outcomes.

Finally, with respect to family structure, in comparison with being in a stable two-parent household, boys and girls in a stable single-parent household had a two-fold increased likelihood of having experimented with drugs, while boys in a stable single-parent household were also more likely to have smoked. Changes in family structure were not associated with boys' or girls' alcohol consumption or girls' smoking behaviour. Girls who transition from a single-parent to a two-parent household had higher internalising and externalising difficulties, depressed mood and ASB, while girls who transition from a two-parent to a single-parent household were more likely to also have higher externalising difficulties (but not internalising difficulties, depressed mood or ASB).

Change in household structure was not associated with boys' internalising difficulties, depressed mood or ASB, but as was the case for girls, boys who transition from single-parent to two-parent and from two-parent to single-parent households had higher levels of externalising difficulties. Thus, household

structure changes in both directions (i.e. from one-parent to two-parent and from two-parent to one-parent) had different effects on different outcomes and seemed to have more negative consequences for girls than for boys.

WHAT FACTORS ARE ASSOCIATED WITH STABILITY AND CHANGE IN WELL-BEING/DIFFICULTIES FROM 9 TO 13 YEARS?

The final research question considered the predictors of stability and change in social-emotional and behavioural outcomes between 9 and 13 years. As noted previously, stability in social-emotional and behavioural outcomes characterised most of the sample, with 7 per cent exhibiting SDQ risk at both waves, and 80 per cent displaying no risk at both waves. Variables associated with an increased likelihood of having low stable SDQ risk for girls included: higher income levels, higher maternal education levels, having more friends than none or 1, and having low conflict with mothers and fathers. Being a perpetrator of bullying was associated with an increase in girls' SDQ risk across waves. In addition, experiencing any change in household structure between waves was associated with an increase in SDQ risk, while girls who experienced a transition from a single-parent to a two-parent household between waves were almost ten times more likely to be the in the high stable SDQ risk group than the low stable SDQ risk group. For boys, variables associated with an increased likelihood of having low stable SDQ risk included: low conflict with mothers and fathers, having more friends than one or none, higher maternal education and higher income levels. Having older friends was associated with an increase in boys' SDQ risk across waves. Boys who experienced any household transition between waves were two to four times more likely (depending on the nature of the transition) to be in the high stable SDQ risk group than the low stable SDQ risk group.

In conclusion, the following take-home messages arise from this report:

Most young people are faring well in terms of their social-emotional and behavioural outcomes, and there was **strong stability in terms of outcomes across waves. Seven per cent of the sample displayed poor outcomes at both waves**, and it is this group which is most in need of support.

Maternal education, income quintile and household structure demonstrated some noteworthy associations with social, emotional and behavioural difficulties. Higher income levels and higher levels of maternal education were associated with low SDQ risk at both waves. Changes in household structure tended to have negative consequences, regardless of the type of transition (i.e. from one-parent to two-parent and from two-parent to one-parent). Where these transitions occurred, boys and girls had higher levels of externalising difficulties and were more likely to have high stable SDQ risk over time, while girls also had higher levels of internalising difficulties.

However, these factors did not emerge as strong and consistent predictors across the models. This suggests that **social-emotional and behavioural difficulties can affect youth across all social contexts**, and it is not just those in contexts of disadvantage who are affected. This suggests that there is need for **universal intervention and prevention programmes** that can be targeted towards all youth.

Early onset of puberty *per se* was not a strong predictor of outcomes. Early puberty did exert a small independent effect, but it was the association between early puberty and other factors such as having older friends that seemed to matter more. **Having older friends was associated with greater antisocial behaviour, higher levels of smoking, drinking and drug use (among boys and girls) and greater depressed mood (among girls only).** Thus, those who experience early puberty – particularly those who hang around with older youth – may be at particular risk of poorer outcomes. Thus, it is useful to think about how those who experience early puberty might best be identified and supported appropriately through the difficult transition.

The findings suggest that involvement in **bullying, both as a victim and as a perpetrator, has important damaging consequences for social-emotional and behavioural well-being**. Being a victim of bullying is associated with increased depressed mood (youth report) and internalising behaviours (parent report). Being a perpetrator of bullying tends to be associated with behaviours such as drug and alcohol use and smoking, as well as young person's reports of antisocial behaviour and depressive symptoms. Thus, there is a need to identify the specific nature of involvement in bullying as the consequences and types of intervention needed will be different. In addition, **having good quality relationships with peers is an important protective factor** (rather than having many friends, which in some contexts might elevate the risk for poorer outcomes). Considering how positive peer relationships can be promoted may be worthwhile, as well as possibly providing skill training to support youth through peer conflict and rejection.

Parenting and parent-child relationships emerged across the board as strong predictors of social-emotional and behavioural well-being. Promoting positive relationships between parents and children may go a long way to protecting children from social-emotional and behavioural difficulties: managing conflict, promoting closeness in the parent-child relationships, and parental responsiveness and demandingness are worthwhile goals to pursue – in particular **helping parents to understand the adolescent transition and how they can appropriately support adolescents' sense of autonomy is likely to yield positive outcomes**, both in terms of the parent-child relationship and in terms of youth outcomes. Parental monitoring and disclosure did not emerge as particularly strong predictors of ASB; what may matter more is how parents and children communicate with each other and the level of connectedness in the relationship.

Chapter 1

INTRODUCTION AND OUTLINE

This report documents the social, emotional and behavioural outcomes within members of Cohort '98 (formerly the Child Cohort) of ***Growing Up in Ireland*** at 13 years. ***Growing Up in Ireland***, the national longitudinal study of children in Ireland commenced in 2006. Two samples of children and their families – an infant ('08) and a child ('98) cohort – have been followed and studied over time. Cohort `98, the focus of the current report, was initially studied at age 9 years (Wave 1 - 2007/8), followed again at age 13 years (Wave 2 - 2011/12), subsequently at age 17 years (Wave 3 - 2015/16), and age 20 years (Wave 4 - 2018). This report draws upon data from Waves 1 and 2. The broad aims of ***Growing Up in Ireland*** are to describe the lives of children in Ireland in order to establish what is typical as well as what is atypical and problematic, and to identify the factors that support or undermine children's development. In keeping with these broad objectives, previous analyses of Cohort '98 at Wave 1 documented social, emotional and behavioural outcomes at age 9 years and the factors contributing to those outcomes (Nixon, 2012; Williams et al., 2009). In addition, a basic description of Cohort '98 at age 13 years has been published (*The lives of 13-year-olds,* Williams, Thornton, Morgan, Quail, Smyth, Murphy & O'Mahony, 2018). The present investigation builds upon these analyses and seeks to address the following questions:

1) How are young adolescents in Ireland faring in terms of their social, emotional and behavioural outcomes at 13 years?
2) To what extent is there change in adolescents' social, emotional and behavioural outcomes between 9 years and 13 years?
3) What factors – both positive and negative - are associated with these outcomes and with changes in these outcomes?

The choice of factors to investigate as being associated with social, emotional and behavioural outcomes has been informed by a review of the literature on early adolescent development, as well as the bioecological model (Bronfenbrenner & Morris, 2006), which is the conceptual model that underpins the ***Growing Up in Ireland*** study. Briefly, Bronfenbrenner's model posits that children's development is influenced by a myriad of factors and processes, both intrinsic and extrinsic to the child. Intrinsic or child characteristics include gender, presence of an illness or disability or dimensions of temperament/personality. Factors extrinsic to the child are characterised according to their proximity to the child. Closest to the child are the settings within which children spend their time, and the interactions they have in those settings. These include the family and school setting, and the child's relationships with parents and peers. Beyond these immediate or proximal settings lie what are termed distal settings, which may affect development through shaping the contexts within which children interact on a daily basis. Examples of these distal processes include educational and healthcare settings and policies. A central premise of Bronfenbrenner's theory is that the influence of all contexts on development operate through proximal processes – those enduring interactions between children and people and objects in their environment. Prior to describing variables used to represent outcomes and proximal processes in the analysis in the current study, a brief overview of the literature and theory on early adolescent development will be provided. The review will largely focus upon the pubertal transition, parent and peer relationships, and mental health outcomes, as these represent the conceptual foci of the present study.

1.1 ADOLESCENCE AND THE PUBERTAL TRANSITION

While the scientific study of adolescence as a distinct period in the life-course began over 100 years ago with the publication of G. Stanley Hall's two volume work on adolescence (Hall, 1904), it was not until the 1970s that a proliferation of research on the decade from 10 to 20 years of life really emerged. A deficit perspective permeated much of the earliest theorising on adolescence – the view that adolescence was a period of life characterised by risk-taking, raging hormones and identity crises was widely propagated (Arnett, 1999). Since the 1980s however, the study of adolescence has increasingly focused upon diversity and plasticity in development, the adolescent's ability to act as an agent in their own development, and upon individual-context relations (Lerner & Steinberg, 2009).

Physiologically, adolescence is marked by the onset of puberty, which endows the adolescent with reproductive maturity. Among the changes that characterise puberty are increases in height and weight and changes in body composition, development of primary sexual characteristics (ovaries and testes) and secondary sexual characteristics (breast and genital development). These changes reflect activation of adrenal and gonadal hormones controlled through the hypothalamus-pituitary-adrenal axis (HPA system) and through the hypothalamus-pituitary-gonadal (HPG) axis (Archibald, Graber & Brooks-Gunn, 2006; Susman & Dorn, 2009). Generally, the onset of puberty occurs earlier for girls than for boys, by approximately 18 to 24 months (Patton & Viner, 2007). For girls, the onset is marked by a variety of changes, including breast development and pubic hair development, and menarche (the onset of menstruation). Because menarche is a discrete event it is frequently taken as a key index to reflect pubertal development. However, relative to the other changes that occur for girls, menarche occurs relatively late in the pubertal process. The average age of menarche is 12.6 to 12.9 years for White girls in the U.S. (Wu, Mendola & Buck, 2002), 13.4 years in Denmark (Juul, Teilmann, Scheike, Hertel, et al., 2006), and 12.6 years in the United Kingdom (Lawn, Lawler & Fraser, 2018) with earlier ages of menarche for Black and Latino girls. For boys, pubertal changes involve an increase in testicular volume, height spurt, the appearance of pubic hair, deepening of the voice, facial hair growth and spermarche (first ejaculation). The onset of testicular growth occurs at about the ages of 11 to 11.5 years, spermarche most frequently occurs between 13 and 14 years of age, and on average boys' voices break first around 14 years (Brooks-Gunn & Reiter, 1990).

There is wide variation in the age of onset for puberty and variations in the sequence of pubertal events that occur. A substantial body of research has investigated the psychological correlates of hormonal changes at puberty, and the associations between timing of puberty and adolescent psychological health. It has been hypothesised that negative emotions may increase as the neuroendocrine system is 'switched on' at the start of puberty (Mendle, Turkheimer & Emery, 2007). Brooks-Gunn and Warren (1989) found that levels of hormones such as estradiol accounted for only a small amount of variance in negative affect among girls age 10 to 14 years, and hormone effects were overshadowed by life events which accounted for more variance in depressive affect. Similarly, Susman et al. (1985) and Susman, Nottelmann, Inoff-Germain, Dorn & Chrousos (1987) reported that hormone levels did not affect girls' adjustment over the influence of pubertal timing, and hormone levels were associated with being emotional and aggressive among boys, but not among girls. The conclusion drawn from much of this early research was that the negative influence of hormones on adolescent emotional well-being was not well substantiated (Buchanan, Eccles & Becker, 1992).

The influence of pubertal timing on adolescent social and emotional well-being has been the focus of considerable research interest. One theory regarding the timing of puberty and adolescent adjustment underscores how boys and girls may be differentially affected by early or late maturation. The theory proposes that any deviation from normal development is stressful and thus may elevate the risk for mood and behaviour problems. Because girls have an earlier onset of puberty than boys, early maturing girls enter puberty before other girls and all boys. Thus, it is hypothesised that they will be the most physically deviant and therefore the most detrimentally affected by early maturation. Late maturing boys, on the other hand, will be the last to enter puberty and this deviance will also place them at risk for greater adjustment difficulties. Thus, maturational deviance (or off-time pubertal development) represents a risk factor for poorer outcomes (Peterson & Taylor, 1980).

A second theory, known as the early timing or developmental readiness hypothesis, posits that early maturation, especially for girls, poses a risk for mood and behaviour problems, owing to the mismatch between physical maturity and cognitive and social maturity (Caspi & Moffit, 1991). Due to physical maturity, early maturing girls may be assumed to be psychologically more mature than is actually the case and thus these girls may have to confront issues for which they are not adequately developmentally prepared. According to this theory, new environmental stressors during early adolescence, such as the transition to secondary school, changing social expectations and behaviour norms and asynchrony among

physical, social, emotional and cognitive maturity mean that early maturing girls will be at the most risk of poorer outcomes. In contrast, late maturing boys will have the most positive outcomes because they have had the most time to acquire and refine the skills necessary for coping with the demands of adolescence (Negriff & Susman, 2011).

In support of both hypotheses, early maturation for girls is associated with higher levels of depressive symptoms in comparison with on-time or late-maturing girls (Ge, Conger & Elder, 2001a; Stice, Presnell & Bearman, 2001). Ge, Conger and Elder (2001b) reported that early maturing boys also display more depressive symptoms and hostile feelings when compared to on-time or later maturing boys, suggesting that the effects of early maturation are true for boys as well as girls. A later study on African American youth revealed support for the developmental readiness hypothesis for girls, but not for boys (Ge et al., 2003). They found that early maturing girls displayed higher levels of depression at 11 and 13 years, but early maturing boys displayed higher levels of depression at 11 years only. Similarly, Kaltiala-Heino, Marttunen, Rantanen and Rimpela (2003) found that among girls, earlier puberty was associated with higher levels of internalising and externalising symptoms, but among boys, externalising symptoms only were associated with early puberty. The findings of these and other studies suggest that the answer to the question of how males and females might be differentially affected by early or later pubertal maturation is not clear, and additional factors might also be implicated in the relationship between pubertal timing and emotional and behavioural outcomes among adolescents (Negriff & Susman, 2011). Ge and Natsuaki (2009) proposed the contextual amplification hypothesis which states that contextual circumstances can either exacerbate or impede the effects of early puberty through the opportunities, norms, expectations, reward and punishment structures provided by the young person's context. When the social environment is particularly stressful, the early maturer may suffer due to the demands of early maturation and a stressful environment and their relatively undeveloped coping resources may be overwhelmed. In support of this theory, Ge et al. (2001a) reported that an early pubertal transition, coupled with recent stressful life events was associated with significantly higher levels of depressive symptoms among adolescent girls. The gender composition of an adolescent girl's social network has also been found to represent a risk or protective factor against depressive symptoms in the context of early maturity. Early maturing girls who associated more with mixed-gender friends displayed higher levels of depressive symptoms than early maturing girls with same-gender friends (Ge, Conger & Elder, 1996), while dating elevated the effects of early pubertal timing on depressed mood for girls (Natsuaki, Biehl & Ge, 2009).

In terms of externalising or 'acting out' behaviours, such as delinquent acts, Caspi, Lynam, Moffitt & Silva (1993) found that early-maturing girls in mixed-sex schools engaged in more norm-violating behaviour than early-maturing girls in single-sex schools. For boys, Felson and Haynie (2002) found that biologically mature boys who socialised with delinquent boys were more likely to engage in delinquency themselves, than less mature boys with similar types of friends. Stattin and Magusson (1990) reported that early maturing girls who associated with older peers (especially older boys) were more likely to engage in problem behaviour at an earlier age than their age-matched peers. Associating with older peers, opposite-sex peers or delinquent peers appears to be one mechanism through which the timing of puberty and externalising problems are associated. Several studies have also noted an association between early pubertal timing and alcohol and cigarette use (Wiesner & Ittel, 2002; Wichstrom, 2001), with the role of peers implicated as a linking mechanism. It is suggested that early maturers may feel pressure to socialise with older peers, thereby perhaps using substances as a means to gain access to older peers. Furthermore, early maturers might attempt to cope with the gaps between biological and social maturity through engaging in adult-like behaviours, such as cigarette and alcohol use. In contrast, the child-like appearance of late maturers may mean that these youngsters are assigned less responsibility and independence, with the result that these adolescents are prevented from participating in peer activities that may lead to deviant behaviour (Susman & Dorn, 2009).

In conclusion, studies are relatively consistent in identifying the timing of puberty as an important risk or protective factor in the trajectory towards social, emotional and behavioural difficulties among youth. Early maturing youth, particularly girls, appear to be particularly vulnerable to the deleterious effects of puberty, with an elevated risk of depressive symptoms and behavioural difficulties. Evidence regarding the negative effects of early maturation among boys is less equivocal however, although the widely held belief that early maturation is protective for boys is no longer accepted. Increasingly it is recognised that variations in one's context need to also be taken into account in understanding why early maturation may or may not be problematic. To illustrate, Caspi and Moffitt (1991) found that early maturation was associated with behavioural problems but only among those who had previous difficulties in childhood. The authors denote this as an accentuating effect of timing on development:

> *stressful transition events, such as the early onset of menarche, do not generate uniform reactions among people, they appear, rather to accentuate pretransition differences between them (p. 166).*

Thus, the effects of the pubertal transition need to be studied in light of contextual factors, including the family, school and peer group (Buchanan et al., 1992).

1.2 PARENT AND PEER RELATIONSHIPS DURING ADOLESCENCE

The changing nature of parent and peer relationships has been highlighted as a key feature of adolescence. Broadly speaking, peer relationships can incorporate friendships, dating or romantic relationships, as well as cliques and crowds. Cliques represent relatively intimate groups of peers who 'hang around' together and develop close relationships. Although they vary in size, intimacy and openness to outsiders, they remain small enough to allow regular interaction among members, such that the members regard the clique as their primary base of interactions with same age mates. Contrastingly, crowds are larger groups of individuals who share the same image or status among peers, even if they do not spend time together (Brown, 1990; Brown & Dietz, 2009).

As documented by Brown and Larson (2009), the transition from childhood to adolescence engenders important changes in the salience of peer relationships: young people spend more time with age mates, and increasingly without adults being present, and peers represent an increasingly important source of influence on adolescent attitudes, opinions and well-being. Additionally, gender segregation which typifies peer groups of middle childhood yields to the mixing of sexes, and new types of relationships, most notably romantic relationships emerge. Peer groups also become more complex ranging from similarity-based friendship groups to reputation-based crowds. Relative to research on romantic relationships, friendships and cliques, less research has considered crowds owing to the challenges in identifying crowds and defining crowd membership (Cross & Fletcher, 2001). One exception to this has been the research on crowds who engage in antisocial behaviour and in particular studies on youth resistance to peer pressure in crowds (e.g. Brown, Clasen & Eicher, 1986; Erickson, Crosnoe & Dornbusch, 2000).

During adolescence, perceptions of support from friends and peers increase. Helsen, Vollebergh and Meeus (2000) reported that support from friends increased significantly between the ages of 12 and 14 years for girls, and surpassed perceptions of parent support in middle adolescence. By late adolescence however there was no difference in girls' perceptions of peer and parent support. Among boys, parental support declines with increasing age whereas support from friends increases, although the support of parents remains greater than peers at both 12 to 14 and 15 to 17 years. For boys and girls no difference was found between perceptions of peer and parent support from age 18 years onwards, and those receiving little support from both parents and peers had higher levels of emotional difficulties. In contrast, Bokhorst, Sumter and Westenberg (2010) reported that parents and friends were perceived as equally

supportive at all ages between 9 and 15 years, and it was only the 16- to 18-year-olds who perceived friends as being more supportive than parents. Also, perceptions of classmate support declined over the period of adolescence. However, in line with Helsen, Vollebergh & Meeus (2000) girls perceived more support from friends than boys, while perceived support from parents was equal among boys and girls. Thus, it is not the case that friends replace parents as sources of support over the period of adolescence, and parent and peer support over the period of adolescence reflect both continuity and change. These findings also point to important gender differences in peer group relations. Although girls typically report greater intimacy, companionship, support and emotional intensity in their close friendships than boys, these relationships also tend to be less stable and are dissolved more often. Thus, closeness to friends may generate vulnerability among girls and in the context of friendship, dissolution may be a risk factor for internalising difficulties such as depression (Benenson & Christakos, 2003; Bowker, 2011). Poulin and Chan (2010) further highlight a substantial level of friendship instability during early adolescence, perhaps partly due to the transition to secondary or high school.

Another feature of peer relationships during adolescence is the emergence of romantic relationships, representing a heretofore unknown foray into voluntary and mutual relationships integrated with passion, intimacy and sexual attraction (Connolly & McIsaac, 2009). Relative to research on adolescent cliques and friendships, significantly less research has focused upon romantic relationships during adolescence. In one of the few studies on the prevalence of romantic relationships during adolescence in the United States, Carver, Joyner and Udry (2003) indicated that approximately one-quarter of 12-year-olds, half of 15-year-olds and 70 per cent of 18-year-olds report a romantic relationship within an 18 month time-frame. Younger adolescents (< 14 years) tended to have shorter romantic relationships, rarely lasting beyond four months and these relationships become more enduring as adolescents become older; among 18-year-olds romantic relationships typically endure for 12 months or longer. Studies of Canadian youth aged 12 to 13 years found that 58 per cent reported at least some dating activity (Friedlander, Connolly, Pepler & Craig, 2007). Boys and girls also appeared to display similar patterns in their romantic relationships, although boys tend to initiate dates more frequently than girls (Jackson, Jacob, Landman-Peeters & Lanting, 2001).

With developments in social media and online dating, it is imperative to consider how the online context may be influencing the prevalence and nature of adolescent romantic relationships. Data based on over 5,000 adolescents aged 13 to 18 years revealed that 47 per cent of non-LGBTQ (lesbian, gay, bisexual, transgendered and queer) youth had had a boyfriend/girlfriend in the past year, with a higher prevalence of 64 per cent among LGBTQ youth. Interestingly, among those who had a boyfriend/girlfriend in the past 12 months, only 7 per cent of non-LGBTQ youth and 24 per cent of LGBTQ youth had met their partner online (Korchmaros, Ybarra & Mitchell, 2015). The finding suggests that the internet is not where the majority of teenagers are meeting their partners and they continue to rely upon in-person methods to meet romantic partners.

While dating during adolescence is a normative phenomenon, there is wide variation in dating behaviours exhibited by adolescents, ranging from no dating, to casual dating relationships with a single or with multiple partners, to steady relationships with a single partner. Dating during adolescence has been conceptualised as source of vulnerability to socio-emotional development, particularly when it occurs early in adolescence. According to Connolly and McIsaac (2009) this risk may arise due to the relatively immature development of other skills necessary for managing romantic relationships; Samet and Kelly (1987) proposed that the demands for intimacy and commitment, particularly within the context of a steady and exclusive dating relationship may overwhelm the developing emotional maturity of adolescents and lead to a premature crystallisation of their identity that halts subsequent socio-emotional development. Early entry into dating and romantic relationships has been the focus of considerable research, perhaps because precocious dating is found to be a risk factor for poorer psychosocial adjustment among both girls and boys (Davies & Windle, 2000; Zimmer-Gembeck, Siebenbruner & Collins, 2001). Precocious dating is

also predicted by early pubertal maturation which, as has been discussed, represents a risk factor in itself for poorer adjustment.

Romantic relationships are also the context in which most adolescents' sexual behaviour occurs. Girls in particular hold strong norms that sexual activity should occur within the context of a romantic relationship (Collins, Welsh & Furman, 2009); and when it occurs outside of such a context has been associated with higher levels of depressive symptoms. For example, based on a longitudinal follow-up of a representative sample of adolescents in the U.S., Grello, Welsh, Harper & Dickson (2003) found that the transition to dating or romantic sexual intercourse was not associated with significant increases in depressive symptoms, delinquent behaviours or experiences of violent victimisation. However, almost 15 per cent of adolescents aged 12 to 16 years had had casual sex in the preceding years, and this was associated with significantly greater psychological distress and problem behaviours both before and after the transition. An earlier onset of sexual intercourse, regardless of the context, is also associated with a variety of risk factors including lower use of contraceptives and greater number of sexual partners (Coker et al., 1994; Kaplan, Jones, Olsen & Yunsal-Butler, 2013). However, these associations between early sexual initiation and a range of problem behaviours and risk factors are more likely to be a function of pre-existing or concurrent characteristics of adolescents and their families, rather than due to the early sex per se (Diamond & Savin-Williams, 2009; Meier, 2007).

Relative to research on adolescents' relationships with peers and romantic partners, relationships with parents have been the focus of considerably more research (Laursen & Collins, 2009). Traditional theories of adolescence emphasised unrest in the parent-adolescent relationship, arising from a key psychosocial task of adolescence: attaining individual competence and autonomy from the influence of parents (Collins & Steinberg, 2008). Early theories highlighted the need for adolescents to detach from parents, and adolescent-parent conflict was viewed as normal and desirable (McElhaney, Allen, Stephenson & Hare, 2009). Later theories focused less on detachment and more on individuation, involving the relinquishment of dependencies on parents and a process of de-idealising parents (Blos, 1967), eventually culminating in an achievement of identity (Erikson, 1968) and emotional autonomy. Collins and Steinberg (2006) propose that emotional autonomy results from a negotiation between adolescents and parents over issues related to granting and exercise of autonomy. Adolescents' growing sense of emotional independence affects and is affected by their relationships with parents, beginning with a de-idealisation of parents and challenges to parental authority (Youniss & Smollar, 1985). While change is central to these theories of parent-adolescent relationships, other theories, most notably attachment theory, focus upon stability within parent-child relationships over time. Attachment to parents manifests in distinct ways from attachment during previous stages of development, although the function of the relationship remains the same: security facilitates the adolescent's explorations outside the family, including the formation of new friendships and romantic relationships (Laursen & Collins, 2009).

The extent of continuity and change in specific dimensions of parent-adolescent relationships that have been studied include closeness and perceived support, conflict, autonomy granting, and monitoring and supervision. Closeness pertains to interdependence, intimacy, trust, support and positive interactions, and research has indicated that perceived parental support is lower in mid-adolescence than in early adolescence (Furman & Buhrmester, 1992), that the amount of time parents and adolescents spend together decreases over adolescence (Larson, Richards, Moneta, Holmbeck & Duckett, 1996), and that parents and their teens go out together less often (Dubas & Gerris, 2002). Expressed warmth declines from pre-adolescence to mid-adolescence (McGue, Elkins, Walden & Iacono, 2005) but then stabilises in late adolescence (De Goede, Branje & Meeus, 2009; Helsen et al., 2000).

In relation to parent-adolescent conflict, early studies documented an inverted U-shaped trend in conflict: early and mid-adolescents reported higher levels than pre- or late adolescents (Furman & Buhrmester, 1992). However, this trend has since been critiqued, with subsequent studies revealing a linear decline

in frequency of conflict from early to late adolescence (Laursen, Coy & Collins, 1998). While frequency of conflict may decrease through the adolescent years, the affective intensity of conflict increases from early to mid-adolescence and stabilises thereafter (Laursen et al., 1998). Adolescent questioning the legitimacy of parental authority appears to lie at the root of much adolescent-parent conflict. Bickering or squabbling is often precipitated over domains that were once defined as being under parental authority but are now defined as a personal choice by adolescents, such as choice of clothing, hairstyle, keeping one's room tidy, privacy, choice of one's friends and activities (Smetana, 2011). Thus, during the adolescent years parents and children are renegotiating domains of authority and conflict is a primary vehicle through which this renegotiation occurs.

Laursen and Collins (2009) note that many of the changes in the parent-adolescent relationship reflect a declining dependence on parents, rather than an erosion of the closeness that tends to characterise parent-adolescent relationships. Indeed, both continuity and change in the parent-adolescent relationship are central to healthy psychological development during adolescence. According to the autonomy-relatedness perspective, emotional independence is facilitated by realigning the existing parent-child relationship while also staying connected to the parents (Cooper, Grotevant & Condon, 1983). The process of establishing emotional independence begins early in adolescence with the de-idealisation of parents and challenges to parental authority, eventually yielding to more mature views of one's parents (Collins & Steinberg, 2008). Parental warmth, involvement, lack of intrusiveness and tolerance of the adolescents' expressions of individuality all facilitate the adolescents' development of emotional independence. In contrast, psychological control – that which stifles the child's independent expression and autonomy – is counterproductive to healthy development and is associated with poor mental health outcomes, such as depression (Barber, 1996; Pomerantz, 2001).

In addition to the construct of psychological control, parental behavioural control has been the focus of research. According to Barber and colleagues, the distinction between the two types of control is centred on the locus of the parents' control: psychological control is exercised to control the child's psychological world (thoughts and feelings), whereas behavioural control is concerned with regulating the child's behaviour (Barber, Olsen & Shagle, 1994). While high behavioural control is indicative of an authoritarian style of parenting, low behavioural control is indicative of a permissive style of parenting (McElhaney et al., 2009) and the latter has been associated with rebelliousness, sensation seeking and conduct problems (Hayes, Hudson & Matthews, 2004).

During the teenage years, adolescents increasingly begin to regulate their own activities as they spend more time away from authority figures and with friends and peers. This has implications for the extent to which parents can and do exert behavioural control. Indeed, the validity of the measured dimensions of parental behavioural control has been called into question. Typically, the focus has been on parental monitoring – behaviours involving attention to and tracking of the child's whereabouts and activities (Dishion & McMahon, 1998). However, measures of parental monitoring have focused more on parental knowledge rather than on actions on the part of parents to obtain that knowledge. As noted by Stattin and Kerr (2000), there are three possible ways in which parents can obtain knowledge about their child's activities or whereabouts: their children could spontaneously tell them (child disclosure), parents could ask their children for the information (parental solicitation), and parents can impose rules and restrictions on their children, thereby controlling the freedom children have to do things without telling them (parental control). The findings based on this conceptualisation of parental monitoring indicate that parent-child communication is more effective than surveillance and control and most of what parents know about their teenagers' activities outside of the home is as a result of what their child tells them (Stattin & Kerr, 2000).

Moreover, evidence is not strong that parental monitoring (solicitation and control) protects children from engaging in antisocial behaviour (Kerr, Stattin & Burk, 2010). Keijsers and Poulin (2013) found that

early adolescents reported a decreased willingness to disclose information to their parents, but more open patterns of communication emerged from mid-adolescence onwards. Parental knowledge gradually decreased during adolescence, and adolescents reported declines in parental control over time (e.g. needing parents' permission to go out) and in parental solicitation (e.g. how often parents asked the adolescent about unsupervised time). These changing communication patterns reflect parental relinquishment of unilateral control as adolescents seek to become more autonomous. The outcome of this process matters greatly for adolescent adjustment: in general adolescents' mental health is most positive when there is a goodness of fit between their desire for autonomy and expectations of what their parents are willing to grant (Collins & Steinberg, 2008).

1.3 EMOTIONAL AND BEHAVIOURAL WELL-BEING AMONG ADOLESCENTS

The transition to adolescence is not only indicated by the pubertal transition but also by a plethora of changes in a variety of other domains of life. The confluence of events, some of which are experienced as challenging and novel, may account for the rise in rates of emotional and behavioural difficulties during the adolescent period that have been well documented (Ge, Conger & Elder, 2001a). Changes in mood have long been considered a hallmark of the adolescent period (Arnett, 1999) and studies involving adolescent reports of mood at intervals throughout the day demonstrated that relative to adults and children, adolescents experience more mood changes, but these were highly dependent on negative or positive daily experiences (Larson & Ham, 1993). Weinstein and colleagues' longitudinal research on daily mood fluctuations found that positive affect declined significantly from 14 to 16 years, but negative affect remained relatively stable. Boys experienced greater decline in mood over time, but overall girls expressed higher depressed mood than boys (Weinstein, Mermelstein, Hankin, Hedeker & Flay, 2007). Larson, Moneta, Richards and Wilson (2002) also found greatest instability in mood over the early adolescent years, and relations between life stresses and mood fluctuations. Thus, the research indicates that declines in mood, particularly over the early years of adolescence, may be typical. However, more extreme fluctuations in mood may be symptomatic of more serious problems, such as internalising or externalising difficulties. Internalising difficulties refer to problems that involve disturbances in emotion or mood, or dysregulation of emotion (like sadness, worry, guilt). Externalising difficulties refer to problems that involve dysregulation of behaviour (such as aggression, impulsivity) (Graber & Sontag, 2009).

Epidemiological research has considered rates of internalising disorders (such as depressive or anxiety disorders) and externalising disorders (such as conduct disorder), determined by diagnostic criteria, as well as sub-clinical levels of problems (Petersen et al., 1993). Certain externalising disorders (such as attention deficit hyperactivity disorder) and internalising disorders (such as certain anxiety disorders – specific phobias, separation anxiety) typically have their onset during childhood. In contrast, certain disorders that typically have their onset in adolescence include depressive disorders, some anxiety disorders (such as panic attacks), substance use disorders and eating disorders (Costello, Foley & Angold, 2006). One-year prevalence rates[2] of depression are 4 to 5 per cent in mid- to late-adolescence (Costello, Erkanli & Angold, 2006; Thapar, Collishaw, Pine & Thapar, 2012) and these rates represent a substantial rise from childhood, when rates are typically less than 1 per cent. During the period of adolescence, gender differences in rates of depressive disorder begin to emerge, and by about age 15 years, the gender difference is at the adult rate of about 2:1 for girls to boys (Graber & Sontag, 2009).

While a small proportion of youth will go on to be diagnosed with internalising or externalising disorders, another sub-group will report symptoms of these difficulties, but will not meet the threshold for diagnosis of the clinical disorder. Findings from the first iteration of the My World Survey (MWS1) of a nationally representative sample of over 6,000 secondary school youth in Ireland aged 12 to 19 years revealed that 70 per cent of adolescents displayed 'normal' symptoms of depression, while 11 per cent were in the mild range, 11 per cent in the moderate range, and 8 per cent in the severe or very severe range, with

2 One-year prevalence rates refer to the proportion of the population that currently has or had the condition at some point during the previous year.

males more likely to be classified in the normal range. Similarly, 68 per cent of adolescents were in the normal range on anxiety symptoms, while 7 per cent were in the mild range, 14 per cent were in the moderate range and 11 per cent in the severe or very severe range. Again, males were more likely to fall into the normal category on symptoms of anxiety. In terms of stress, 80 per cent of the adolescents were categorised as normal, 7 per cent were in the mild range, 7 per cent in the moderate range, and 5 per cent in the severe to very severe range. Across the categories of depression, anxiety and stress, symptoms tended to increase gradually across the secondary school years (Dooley & Fitzgerald, 2012).

These findings broadly resonate with those of previous smaller scale studies of mental health symptoms among Irish youth: Lynch, Mills, Daly and Fitzpatrick (2004, 2006) reported that one-in-five 12- to 15-year-olds in Dublin were at risk of mental health difficulties, with 16 per cent meeting the criteria for a current diagnosis. Martin, Carr, Burke, Carroll and Byrne (2006) found that 21 per cent of young people in the south-east of Ireland aged 12 to 18 years (n = 1,444) met the diagnostic criteria for at least one psychological disorder: of these cases, 45 per cent had an anxiety disorder, 16 per cent had a mood disorder, and 40 per cent[3] had a disruptive behaviour disorder (including ADHD, Oppositional Defiant Disorder and Conduct Disorder). Anxiety disorders were more common among girls and disruptive behaviour disorders were more common among boys. Sullivan, Arensman, Keeley, Corcoran and Perry (2004) surveyed almost 4,000 adolescents aged 15 to 17 years in the south of Ireland. In line with findings of Dooley and Fitzgerald (2012), 80 per cent of teenagers scored below the cut-off for depression (77% for girls and 82% for boys). One-in-11 teenagers (9.1%) reported having deliberately self-harmed in the past, with females three times more likely than males to have done so. Additionally, there was a higher proportion of teenage girls who were either possibly (14.5%) or probably (8.4%) depressed in comparison with teenage boys, where 11.9 per cent were possibly and 5.1 per cent were probably depressed. The findings from these studies in Ireland converge to indicate that approximately one-in-five adolescents in Ireland experience emotional distress at any one time.

The second iteration of the My World Survey published in 2019 indicated increases in levels of symptoms experienced by adolescents in Ireland: 60 per cent of adolescents displayed 'normal' symptoms of depression (compared with 70% in MWS1), 11 per cent were in the mild range,[4] 15 per cent in the moderate range and 15 per cent in the severe or very severe range (compared with 11%, 11% and 8% respectively from MWS1). In relation to anxiety, just over half of adolescents were in the normal range (51%), 9 per cent were in the mild range, 18 per cent in the moderate range and 23 per cent in the severe or very severe range (Dooley, O'Connor, Fitzgerald & O'Reilly, 2019). Additionally, 23 per cent of adolescents had self-harmed by deliberately hurting themselves without wanting to take their own life, and 6 per cent had a suicide attempt. These more recent figures from MWS2 suggest that levels of mental health difficulties among adolescents in Ireland may be on the rise and that a significant proportion of the youth population display anxiety-related difficulties.

In addition to emotional symptoms such as those discussed above, research has also considered the emergence of various risk-taking behaviours during the period of adolescence and their implications for adolescent health and well-being. Risk-taking behaviours include the consumption of drugs and alcohol and engaging in antisocial behaviour and unprotected sexual activity. Adolescence has long been regarded as a period of risk-taking behaviour or at least a period during which rash behaviour and poor decisions increase (Shulman, Harden, Chein & Steinberg, 2015), and epidemiological studies have documented an increase in risk-taking behaviour during the teenage years, including substance use, engagement in antisocial behaviour and traffic accidents (Willoughby, Good, Adachi, Hamza & Tavernier, 2013). In the United States, 13.5 per cent of eighth graders (corresponding roughly to second year in secondary school in Ireland) and 46 per cent of twelfth graders (final year secondary school students) had used marijuana in the past, and the use of alcohol was even more common among U.S. students: 23 per cent of eighth graders had previously consumed alcohol and 9 per cent had been drunk; these figures increased to 62 per cent and 45 per cent for twelfth graders. In terms of smoking

3 Percentages do not add to 100 as individuals could meet criteria for more than one category of disorder.

4 Categories of mild, moderate and severe on the DASS-21 scale used in the MWS1 and 2, were developed by the scale authors: for the depression scale, the cut-offs are 0-9 (normal), 10-13 (mild), 14-20 (moderate), 21-27 (severe) and 28-42 (very severe). On the anxiety scale, the cut-offs are 0-7 (normal), 8-9 (mild), 10-14 (moderate), 15-19 (severe) and 20-42 (very severe).

cigarettes, 9 per cent of eighth graders and 27 per cent of twelfth graders had ever smoked a cigarette (Johnston, Miech, O'Malley, Bachman et al., 2017). While high, these rates reflect steady declines in alcohol and cigarette use among young people in the U.S. since the 1980s, and this trend has also been found in Canada and other European countries, including Ireland (De Looze, Raaijmakers, Ter Bogt, Bendtsen et al., 2015).

In Ireland Dooley and Fitzgerald (2012) reported that 15 per cent of adolescents were classified as problem drinkers, an additional 3 per cent as harmful and hazardous drinkers and another 3 per cent as potentially alcohol dependent. Rates of drinking increased with each secondary school year, and in first year – the age which approximately coincides with Wave 2 of ***Growing Up in Ireland*** – 3 per cent engaged in problem drinking, and 1 per cent indicated possible alcohol dependence. Two per cent of first years had ever used cannabis, and this had increased to 26 per cent among sixth year (the final year) secondary school students. More recent figures from the MWS2 indicate that 28 per cent of adolescents in Ireland were classified as problem drinkers, 4 per cent as harmful and hazardous drinkers and 3 per cent as potentially alcohol dependent (Dooley et al., 2019). Findings from the most recent HBSC study (data collected in 2017/18; Inchley, Currie, Budisavljevic, Torsheim et al., 2020) reported that 2 per cent of 13-year-olds had been drunk at least twice in the last month, 4 per cent of girls and 5 per cent of boys had drunk alcohol in the last 30 days, and 13 per cent of girls and 18 per cent of boys aged 13 had ever tried alcohol. Four per cent of 13-year-old girls and 6 per cent of 13-year-old boys had ever smoked cigarettes.

Another well-researched category of risk-behaviour is that of antisocial behaviour, which encompasses behaviour such as fighting and bullying, rule breaking such as lying, stealing vandalism, truancy, running away from home, and more severe behaviours that reflect a lack of empathy and guilt including harming animals (Piotrowska, Stride, Croft & Rowe, 2015). Moffitt (1993) proposed the idea of adolescent-limited antisocial behaviour, which is distinguishable from life-course persistent antisocial behaviour in that adolescent-limited offenders have no notable antisocial behaviours in childhood, and their antisocial behaviour does not persist into adulthood. Moffitt's concept of adolescent-limited antisocial behaviour was initially supported by data based on English and U.S. samples which noted an increase in the number of individuals who have an onset of antisocial behaviour in the early adolescent period. The concept promoted the idea that antisocial behaviour which had its onset in adolescence was developmentally normative (Roisman, Monahan, Campbell, Steinberg & Cauffman, 2010) or 'near-normative' (Silberg, Moore & Rutter, 2015, p. 26). It was thought to arise as a result of a maturity gap between biological and social maturity, and the tendency to associate with and mimic antisocial peers (Silberg et al., 2015).

Biological theories on adolescent risk-taking have predominated in the literature in recent years and a mismatch in the timing of development in two systems in the brain have been implicated in these behaviours (Steinberg, 2008). The early maturing affective/approach system leads to increases in reward seeking and the need for novelty. In contrast the slower maturing cognitive control network led by the prefrontal cortex, responsible for planning, inhibition and judgement does not fully develop until the 20s (Willoughby et al., 2013). This lack of synchrony between these two brain systems is believed to underlie the young person's propensity towards seeking novelty and risk but without the cognitive control to temper these behaviours. However, this dual systems model has been subject to criticism, in light of evidence that real-world risk-taking does not peak at the age of 15 years, as predicted by the theory and not all adolescents become risk-takers (Romer, Reyna & Satterthwaite, 2017; Willoughby et al., 2013). Additionally, vulnerability for risk-taking is moderated by aspects of the context, including the type of risk-taking behaviour and the presence of peers (Romer, Reyna & Satterthwaite, 2017; Willoughby et al., 2013).

Longitudinal and cohort studies have yielded important insights into the prevalence of antisocial behaviour during adolescence. Based on data from the Longitudinal Study of Young People in England (LSYE), drinking alcohol and fighting were the most frequently reported behaviours at age 14, with 17 per cent

having had an alcoholic drink and 19 per cent having been involved in a fight. Seven per cent of 14-year-olds had engaged in graffiti, 11 per cent in vandalism and 12 per cent in shoplifting – the prevalence of fighting, graffiti, vandalism and shoplifting all decreased at ages 15 and 16 (but not consumption of alcohol). Two-in-five young people at age 14 engaged in only one form of behaviour, and 5 per cent engaged in four or more risky behaviours (Cebulla & Tomaszewski, 2009). In terms of truancy, Vaughn, Maynard, Salas-Wright, Perron and Abdon (2013) reported that 11 per cent of high school students in the U.S. had skipped school at least once in the past month, and 2 per cent reported having skipped school four or more days in the past month. Maynard, Vaughn, Nelson, Salas-Wright et al. (2017) further reported that rates of truancy in the U.S. have remained relatively stable over time: 10.9 per cent in 2002 and 11.1 per cent in 2014. Findings from the LSYE revealed that 5 per cent of 14-year-olds had truanted for either days or weeks at a time in the past year, and this increased to 9 per cent for 16-year-olds. Based on the nationally representative School Leavers Survey in Ireland in 2006, McCoy, Kelly and Watson reported that 3.4 per cent had truanted for days or weeks at a time in the sixth year of secondary school.

A study of a representative sample of 13- to 18-year-olds in Australia also revealed that the types of antisocial behaviour in which adolescents engaged changed from early to late adolescence. In early adolescence, the most prevalent behaviours were fighting (32%), alcohol use (25%), theft (16%) and property damage (14%). Later in adolescence, the most common types of antisocial acts were alcohol use (84%), skipping school (43%), cigarette use (39%), fighting (23%), property damage (20%), marijuana use (19%) and driving a car without permission (15%) (Smart, Vassallo, Sanson & Dussuyer, 2004). Thirteen per cent (20% for boys, 9% for girls) of the young people in the My World Survey reported that they had been in trouble with the Gardaí (police); this was 9 per cent for those in first year of secondary school (aged 13 to 14).

In recent years, the value of considering adolescent-onset antisocial behaviour as normative and distinctive from life-course persistent antisocial behaviour has been questioned for several reasons: half of those with childhood-onset antisocial behaviour do not persist with their antisocial behaviour beyond the adolescent years (these might be termed a childhood-limited group) (Silberg et al., 2015); adolescent-onset antisocial behaviour may not be limited to adolescence and maybe persist into adulthood particularly for males. Moffitt, Caspi, Harrington and Milne (2002) found that adolescent-onset antisocial males continued to experience difficulties at age 26, although by the age of 32 years they had fewer criminal convictions than those classified as being life-course persistent (Odgers, Moffitt, Broadbent, Dickson et al., 2008). Females whose antisocial behaviour began in adolescence were much less likely to persist with this behaviour into adulthood, although these adolescence limited antisocial girls had significantly poorer outcomes than non-antisocial girls, but only in terms of economic and not health outcomes (Odgers et al., 2008). Thus, the antisocial behaviour which is initiated during adolescence may not be as benign as originally thought. Roisman et al. (2010) investigated the developmental precursors to antisocial behaviour. They reasoned that if adolescent onset (AO) antisocial behaviour was developmentally normative, there should be no differences on average between the AO and never antisocial groups. In contrast, if AO antisocial behaviour was not part of normative development, they hypothesised that these young people would share common features with the histories of individuals whose antisocial behaviour had its onset during childhood. The data supported the latter hypothesis – those in the AO group experienced significantly more adversity from infancy through to age 15 (such as lower income, and less maternal sensitivity), than the never-antisocial group, although their adversity tended to be less extreme than those in the early onset and persistent group. The authors concluded that adolescent onset antisocial behaviour may not be developmentally normative but linked to early and subsequent individual and contextual markers of disadvantage.

1.4 THE PRESENT STUDY

The present study seeks to describe the social, emotional and behavioural outcomes of 13-year-olds in Ireland, to examine continuity and change in their outcomes from 9 to 13 years, and to examine the factors which are associated with increases or decreases in difficulties from 9 to 13 years. Based on the review of the literature, factors which will be considered include: child gender, pubertal status, and relationships and changes in relationships with parents and friends. Other distal variables, such as family structure and social class will also be incorporated into the analyses.

The following research questions will be addressed:

1. How are 13-year-olds faring in terms of their social, emotional and behavioural development?
2. How do social-emotional and behavioural outcomes at 13 years relate to their well-being/difficulties at 9 years? Is there continuity or change? Are there sub-groups who exhibit difficulties at both time points, at one time only, or at neither time point?
3. What factors are associated with outcomes at 13 years?
4. What factors are associated with stability and change in well-being/difficulties from 9 to 13 years?

In the chapter that follows, details are provided upon the sample, the measures used and the approach to analyses.

Chapter 2

METHOD

2.1 PARTICIPANTS

The current report is based upon analysis of data from members of Cohort '98 (formerly the Child Cohort) at Waves 1 and 2. A sample of 8,568 9-year-olds and their families recruited into the study through the primary school system represented the sample at Wave 1. The target sample for Wave 2 was all those children and their families who participated at Wave 1 and who were still resident in Ireland four years later, when the child was age 13 years (n = 8,465). The overall response rate at Wave 2 was 87.7 per cent yielding a sample of 7,423. Inter-wave attrition was related to variables including family social class and income, and the educational attainment of the Primary Caregiver. Thus, data were statistically re-weighted according to standard procedures to ensure that figures are representative of the population of 13-year-olds who were resident in Ireland at 9 years and at 13 years. Further details on response rates, inter-wave attribution and reweighting the data are available in the descriptive report published on this sample, *The lives of 13-year-olds* (Williams et al., 2018).

2.2 MEASURES

2.2.1 EMOTIONAL AND BEHAVIOURAL WELL-BEING

The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997) was used to assess the young person's social, emotional and behavioural difficulties. The 25-item scale consists of four problem sub-scales pertaining to *emotional symptoms* (e.g. Many worries, often seems worried), *conduct problems* (e.g. Often has temper tantrums or hot tempers), *hyperactivity/inattention* (e.g. Thinks things out before acting) and *peer problems* (e.g. Often fights with other children or bullies them). Each item is scored from 0 (not true) to 2 (certainly true) and certain items are reverse scored. The sub-scale score for each of the problem sub-scales can be summed to yield a *total difficulties* score (possible range 0 to 40). There is also a *prosocial* sub-scale (e.g. Helpful if someone is hurt, upset or feeling ill) (range 0 to 10). An *externalising* score (range 0 to 20) comprises the total of the conduct and hyperactivity/inattention sub-scale scores while an *internalising* score (range 0 to 20) comprises the total of the emotional and peer problems sub-scale scores (Goodman, Lamping & Ploubidis, 2010).

In *The lives of 13-year-olds* report, Williams et al. (2018) identified the 13-year-olds who scored in the top ten per cent on the total difficulties scale and on the four difficulties sub-scales (emotional, conduct, peer problems and hyperactivity). These children were classified as being at risk of having heightened difficulties (thus 10% of children were classified as having difficulty). In the present analysis, a different approach was taken to identifying children deemed to be 'at risk'. Here cut-off scores identified by the scale authors were used – this enables comparison with other studies that have used the scale cut-off points. The scale authors propose a four-band classification system to group young people into categories of risk, based on their SDQ total scores. For the parent-completed version of the scale, these cut-offs are: 0-13 is close to average, 14-16 is slightly raised, 17-19 high, 20-40 very high. These groups represent 80 per cent, 10 per cent, 5 per cent and 5 per cent respectively of the population, upon which the cut-offs were based (sdqinfo.org).

In ***Growing Up in Ireland*** (GUI) the SDQ was completed at both Waves. At Wave 1 it was completed in respect of the child by the Primary Caregiver (typically the mother) and the child's teacher. At Wave 2 it was completed by the Primary Caregiver (again, typically the mother). For this analysis, only the Primary Caregiver report is used as data are available from both waves. Cronbach alphas[5] using ***Growing Up in Ireland*** data for the total scale scores were acceptable at 0.78 and 0.80 (Waves 1 and 2, respectively). Cronbach alphas for total SDQ and the internalising and externalising difficulties sub-scales, and the prosocial sub-scale at both waves are illustrated in Table 2.1.

5 Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are within a scale. It is considered to be a measure of scale reliability – values above 0.7 indicate good scale reliability.

Table 2.1: Cronbach alphas for total SDQ and sub-scales at Wave 1 and Wave 2

	Wave 1	Wave 2
Total difficulties scale (20 items)	0.781	0.801
Internalising difficulties sub-scale (10 items)	0.693	0.709
Externalising difficulties sub-scale (10 items)	0.747	0.770
Prosocial sub-scale (5 items)	0.632	0.640

The Short Mood and Feelings Questionnaire (SMFQ) (Angold, Costello, Messer & Pickles, 1995) was used to assess low mood or depression in the young person. The scale is completed by the young person and contains 13 items (e.g. I felt miserable/unhappy; I didn't enjoy anything at all). The young person is asked to indicate the extent to which each statement reflected how they felt or acted in the past two weeks. Response options were 'true', 'sometimes' and 'not true'. Scores can range from 0 to 26. The scale authors report a one-factor structure and a Cronbach's alpha of 0.85. Previous research has identified a score of 11 as the cut-off (Patton, Olsson, Bond, Toumbourou et al., 2008), above which individuals with an actual diagnosis of depression can be sensitively detected. Angold et al. (1995) identified that a cut-off of 8 and above resulted in a specificity of 80 per cent and sensitivity[6] of 60 per cent. In ***Growing Up in Ireland***, the SMFQ was completed at Wave 2 only. Cronbach's alpha was 0.87.

2.2.2 ANTISOCIAL AND RISKY BEHAVIOUR

Antisocial and risk-taking behaviour was assessed by means of a series of questions completed on an individual basis by the young person themselves (a self-completion questionnaire). Fifteen items tapped into antisocial behaviour, wherein the young person was asked to include how often they engaged in certain behaviours over the past year, with possible responses ranging from: never, once, 2 to 5 times, or 6 or more times. Behaviours were on a continuum, from minor misdemeanours to more serious transgressions. Sample behaviours included: not paid the correct fare on a bus or train, taken something from a shop or store without paying for it, carried a knife or weapon with you in case it was needed in a fight, written things or sprayed paint on things that do not belong to you, hit, kicked or punched someone on purpose in order to hurt or injure them. The specific items were developed by researchers in the Edinburgh Study of Youth Transitions and Crime (Smith & McVie, 2003) and were also used in the Belfast Youth Development Study (Higgins, et al., 2018). Young people were also asked if they had ever been in trouble with the Gardaí (response options yes or no).

Parents were asked 11 questions about their child's behaviour over the past year, using the same response options as on the young person's questionnaire. Sample behaviours for parents included: often started fights or bullies, threatens or intimidates others, has been physically cruel to animals, deliberately destroyed or damaged property, has stayed out at night despite parental prohibitions, has truanted from school.

In terms of smoking, alcohol and drug use, the young people were asked a series of questions regarding their use and frequency of use of various substances. In relation to smoking tobacco, young people were asked whether or not they had ever smoked a cigarette. If they responded 'yes' they were further asked how frequently this occurred, with response options being: 'every day', 'at least once a week but not every day', 'less than once a week', or 'I do not smoke at present'. For those who smoked at least once a week, a further question asked, 'how many cigarettes do you usually smoke in a week?' Questions on vaping and e-cigarette use were not included at this wave of data collection (data collected in 2011/2012).

In terms of alcohol use, the initial question asked: 'Have you ever had an alcoholic drink (other than just a few sips)? That means beer, wine, cider, or spirits like vodka, whiskey, etc'. For those participants who answered 'yes', a follow-up question was asked: 'During the last year did you have a whole alcoholic drink?' For those participants who answered 'yes', two further follow-up questions were asked; 'How

6 Specificity is the true negative rate and measures the percentage of individuals in the sample who are correctly identified as not having the condition (in this case depression). Sensitivity is the true positive rate and measures the percentage of individuals in the sample who are correctly identified as having the condition.

often do you drink alcohol now? Try to include even those times when you only drink a small amount'. Response options were: 'never', 'rarely', 'only on special occasions', 'at least once a month', 'at least once a week' and 'every day'. A final question asked: 'Have you ever had so much alcohol that you were really drunk (or felt sick or dizzy?)'. Response options ranged from: 'no, never', 'yes once', 'yes 2-3 times', 'yes 4-10 times', and 'yes more than 10 times'.

Three questions addressed drug use, each with 'yes' or 'no' response options: 'Have you ever used cannabis (also called 'hash', 'grass', 'weed', or 'pot')?'; 'Have you ever sniffed glue or breathed the contents of spray cans, or inhaled any paints or sprays or petrol to get high?'; and 'Have you ever used any other drugs (such as ecstasy, speed, heroin, methadone, crack or cocaine)?'. Parents were not asked any questions about their child's use of cigarettes, alcohol or drugs.

2.2.3 PUBERTAL STATUS

One question was asked to assess pubertal status. Girls were asked: 'Girls can start their periods at different ages. Have you started your periods yet?'. Girls who responded 'yes' were further asked: 'what age were you when you had your first period?' Age at menarche was recorded in years and months. Boys were asked: 'Boys' bodies develop at different rates. We would like to ask you a few questions about your stage of development at the moment. Has your voice changed at all?' Response options were: 'no it is the same', 'yes, occasionally it is a bit lower', 'yes, it is now totally changed' and 'not sure'. Parents were not asked any questions about their child's pubertal status.

2.2.4 PARENT-CHILD RELATIONSHIPS

Several questions and scales were administered to the young people and their mothers and fathers to capture various dimensions of parenting and the parent-child relationship. Some of these were administered at both time points and others only at Wave 2.

Both mothers and fathers reported upon conflict and positive aspects (hereafter termed closeness) in their relationship with the Study Young Person, using the Pianta Child-Parent Relationship Scale (Pianta, 1992). At Wave 1, 30 items of the scale were administered: 12 items tapped into *conflict*; 10 items into *closeness*. An additional four items tapped into *dependence*. Response options were: 'Definitely does not apply'; 'not really'; 'neutral'; 'not sure'; 'applies somewhat'; and 'definitely applies'. Sample items on the closeness sub-scale include: 'I share a warm affectionate relationship with my child'; 'it is easy to be in tune with what my child is feeling'. Sample items on the conflict sub-scale include: 'My child and I always seem to be struggling with each other'; 'my child remains angry or resistant after being disciplined'. Sample items on the dependence sub-scale include: 'My child appears hurt or embarrassed when I correct him/her'; 'my child reacts strongly to separation from me'. At Wave 2, an abbreviated 15-item version of the Pianta scale was used: eight items tapped into conflict and seven items tapped into closeness and the dependence sub-scale was removed.

Driscoll and Pianta (2011) reported Cronbach alphas for maternal conflict at 0.84 and paternal conflict at 0.80; maternal closeness at 0.69 and paternal closeness at 0.72 (children aged 4.5 years) (based on 15-item version). Georgiou and Stavrinides (2013) reported Cronbach alphas of 0.85 for maternal conflict and 0.83 for paternal conflict (children aged 13 to 15 years). Table 2.2 illustrates reliability statistics for the maternal and paternal closeness and conflict sub-scales based on ***Growing Up in Ireland*** data at Waves 1 and 2. Given that an abbreviated version of the Pianta scale was used at Wave 2, in order to maintain comparability with Wave 1 data and to track changes in conflict and closeness from ages 9 to 13 years, Pianta sub-scale scores for Wave 1 were derived on the basis of the 15-item version of the scale used at Wave 2 and were used in the analyses for this report. Cronbach alphas for this shortened version of the scale at Wave 1 are also illustrated in the table and demonstrated comparable reliability with the 30-item version. Cronbach alpha values were low for some of the sub-scales (in particular the closeness and dependence scales at Wave 1), and the implications of this for the interpretation of findings are discussed at the end of this chapter.

Table 2.2: Cronbach alphas for sub-scales of the Pianta Child-Parent Relationship Scale

	Wave 1 (30 items)	Wave 1 (15 items)	Wave 2 (15 items)
Maternal closeness	0.584	0.649	0.746
Maternal conflict	0.845	0.787	0.820
Paternal closeness	0.622	0.643	0.741
Paternal conflict	0.820	0.750	0.801
Maternal dependence	0.254	—	—
Paternal dependence	0.310	—	—

Parental monitoring and child disclosure were measured using scales developed by Stattin and Kerr (2000). The monitoring scale pertains to how much parents know about their child's activities, whereabouts and companions. Mothers and fathers responded to nine items, using response options 'almost never or never', 'not very often', 'sometimes', 'often', 'almost always or always', and 'not applicable'. Sample items included 'Do you know what [child] does with his/her free time'; 'Do you know when he/she has a test or homework due at school'; 'How often in the last month have you had no idea where he/she was'. The disclosure scale consisted of five items, relating to how parents believed their child tells them about what they are doing, without being asked. Response options were the same as for the monitoring scale and in both cases, the 'not applicable' response option was coded as 0 and so did not contribute to scale total scores. Sample items included 'Does he/she spontaneously tell you about his/her friends' and 'does he/she hide a lot from you about what he/she is doing during nights and weekends' (this one item is reverse scored). This scale was completed by both mothers and fathers. Higher scores indicate higher levels of monitoring and control. Stattin and Kerr (2000) reported Cronbach's alpha of 0.89 for parent report of monitoring, and 0.84 for child disclosure. Parental monitoring and child disclosure were measured at Wave 2 only.

Parental control was measured using a scale also developed by Stattin and Kerr (2000). Young people responded to a six-item scale, with response options 'almost never or never', 'not very often', 'sometimes', 'often', 'almost always or always', and 'not applicable/don't do it'. The 'not applicable' response option was coded as 0 and so did not contribute to scale total scores. Sample items include: 'Do your parents demand to know where you are in the evenings, who you are going to be with, and what you are going to be doing?'; 'Do you need your parents' permission before going out on week nights?' Higher scores indicate higher levels of parental control. Stattin and Kerr (2000) reported Cronbach's alpha of 0.82 for youth report of parental control. Parental control was measured at Wave 2 only. Table 2.3 illustrates reliability statistics for monitoring, control and disclosure scales, based on ***Growing Up in Ireland*** data. As also noted in relation to the Pianta scale above, the Cronbach alphas suggest poor reliability on both the monitoring and disclosure scales – this is discussed in the final section of this chapter.

Table 2.3: Cronbach alphas for monitoring, disclosure and control sub-scales (Wave 2)

	Mother report	Father report	Child report
Parental monitoring (9 items)	0.425	0.516	—
Child disclosure (5 items)	0.518	0.531	—
Parental control (6 items)	—	—	0.761

Finally, young people at both waves completed the Parenting Styles Inventory 2 (Darling & Toyokawa, 1997). The scale comprises three sub-scales: responsiveness, demandingness and psychological-autonomy granting (five items on each sub-scale). Responsiveness refers to the degree to which parents are sensitive and responsive to their child's emotional needs. Sample items include: 'I can count on my mother to help me out if I have a problem'; 'My mother hardly ever praises me for doing well' (reverse scored). Demandingness relates to the extent to which parents have expectations and standards which they expect their child to fulfil. Sample items include: 'My mother really expects me to follow family rules'; 'If I don't behave myself, my mother will punish me'. Autonomy-granting relates to the degree to which parents allow and encourage their children to develop their own ideas, beliefs and points of view. Sample items include: 'My mother tells me that her ideas are correct and that I shouldn't question them' (reverse scored); 'My mother believes I have a right to my own point of view'. The term 'mother' was replaced with 'father' or a partner's name in the event that the child is completing the questionnaire in respect of a parent or parent figure other than the mother.

The scale was originally developed for use with children aged 11 to 14 years; therefore, the scale was adapted for use with the ***Growing Up in Ireland*** 9-year-olds at Wave 1. Specifically, the wording of some items was simplified, only the responsiveness and demandingness sub-scales were used, and three response options were used: 'always', 'sometimes', and 'never'. Sample items for the 9-year-olds included: 'Does your mum really expect you to follow rules?' (demandingness sub-scale) and 'Does your mum like you to tell her when you are worried?' (responsiveness sub-scale). At Wave 2, the three sub-scales were used, and the scale authors' response options: 'strongly disagree', 'disagree', 'I'm in between', 'agree' and 'strongly agree'.

The scale authors reported acceptable levels of reliability for the three sub-scales: responsiveness (0.74); demandingness (0.72) and autonomy-granting (0.75). Other authors have reported good reliability for some of the sub-scales: e.g. Hardy, Bhattacharjee, Reed & Aquino (2010) reported reliabilities of 0.82 and 0.74 for responsiveness and autonomy-granting respectively, but only 0.61 for the demandingness sub-scale. Carlo, McGinley, Hayes, Batenhorst and Wilkinson (2007) similarly reported good reliability for the responsiveness sub-scale (0.82) but lower reliability for demandingness (0.67). They did not use the autonomy-granting sub-scale in their study. Table 2.4 illustrates the findings from the reliability analyses of the PSI-II sub-scales based on ***Growing Up in Ireland*** data collected from the children/young people at Waves 1 and 2, in respect of their mothers and fathers. These Cronbach alpha values fall below 0.70, which is deemed to be the cut-off for acceptable reliability. Thus, findings based on data from these sub-scales should be interpreted with some caution.

Table 2.4: Cronbach alphas for responsiveness, demandingness and autonomy-granting sub-scales of the Parenting Styles Inventory, based on *Growing Up in Ireland* data at Waves 1 and 2

Child reporting on….	Responsiveness	Demandingness	Autonomy-granting
Mother at Wave 1	0.57	0.47	—
Mother at Wave 2	0.68	0.55	0.59
Father at Wave 1	0.68	0.51	—
Father at Wave 2	0.76	0.64	0.59

2.2.5 PEER RELATIONSHIPS

Young people were asked a series of questions about their friends at Wave 2. Initially they were asked: How many friends do you normally hang around with? Response options ranged from 'none', 'one or two', 'three to five', 'six to 10' and 'more than 10'. For the young people who responded 'none', no further questions about their friends were asked. For those who indicated that they had at least one friend, three subsequent questions were asked: 'how many of these would you describe as CLOSE friends?'; 'how old

are the friends you usually go out with?' (response options included: 'a year or more younger', 'about the same age', 'a year or two older', and 'more than two years older'); and 'how many of your friends have your parents met?' (response options included: 'none of them', 'some of them', and 'most or all of them'). To capture negative aspects of peer relationships, young people were asked whether they had ever been bullied in the last three months, and if so how often (response options included: 'once or twice', '2 or 3 times a month', 'about once a week', and 'several times a week'). Bullying was not defined in this question – it was left to the respondent to interpret the term for themselves.

The alienation and trust sub-scales of the Inventory of Parent and Peer Attachment (IPPA) (Armsden & Greenberg, 1987) were administered to the young people in respect of their relationship with their peers only. Seventeen items were administered (response options ranged from 'almost never or never true', 'not very often true', 'sometimes true', 'often true', to 'almost always or always true'). Ten items tapped into *trust* in peer relationships, interpreted as mutual trust and respect: (e.g. 'I feel my friends are good friends'; 'when I am angry about something my friends try to be understanding'). Seven items tapped into *alienation* from friends interpreted as alienation from friends but with the recognition of the need to be closer to them (e.g. 'I get upset a lot more than my friends know about'; 'it seems as if my friends are irritated with me for no reason'). Sub-scale scores can range from 10 to 50 for trust and from 7 to 35 for alienation. Higher scores mean higher levels of trust and alienation respectively. The scale authors noted Cronbach's alphas of 0.91 for trust and 0.72 for alienation, while Pace, San Martini and Zavattini (2011) based on a sample of over 1,000 Italian adolescents noted a Cronbach's alpha of 0.90 for trust and 0.65 for alienation. Based on ***Growing Up in Ireland*** data, Cronbach's alpha was 0.86 for the trust sub-scale and 0.63 for the alienation sub-scale. Young people were not asked any questions about their sexual behaviour or about romantic relationships.

At Wave 1, the children were not asked any questions about their friendships or peer relationships – however Primary Caregivers were asked two questions: about how many days a week does the Study Child do things with friends outside of school hours (response options ranging from: 'never', '1 day a week', '2-3 days a week', '4-5 days a week' and '6-7 days a week'); and about how many close friends does the Study Child have (response options ranging from 'none', '1', '2-3', '4-5', '6 or more').

2.2.6 FAMILY CONTEXTUAL VARIABLES

Three additional variables pertaining to family were incorporated into the analyses: mothers' highest education level, household income quintile and family structure. Mothers' highest education level was derived on the basis of questions and categories similar to those used in the census. Mothers were classified into one of three categories: primary education only or lower secondary, higher secondary education and third-level (sub-degree), and third-level degree or postgraduate degree. Household income was divided into five equal groups or quintiles – those in the first (lowest) income quintile represented the one-fifth of families with the lowest level of income, those in the fifth (highest) income quintile represented one-fifth of families whose income was in the highest group.[7] Finally, a family structure variable was derived on the basis of the completion of the household grid, which captured details such as gender, date of birth, economic status and relationship to the Primary Caregiver and the child of each person resident in the household. Based on this information, families were classified as being one-parent and two-parent households, and households with one or two children, or with three or more children.

The information necessary for the derivation of these three variables was collected at Waves 1 and 2, and for the purpose of the analyses variables from Wave 2 were used, as these reflect the current situation of the child. An additional variable was derived to capture change in family structure between Waves 1 and 2. Families were classified as being stable two-parent families, stable one-parent families, from one to two-parent (to reflect the addition of a new partner to the home) and from two to one-parent (to reflect the departure of one parent from the home) households.

7 The specific number of families in each quintile are as follows: lowest (1st): 1,454; 2nd: 1,415; middle (3rd): 1,358; 4th: 1,403 and highest (5th): 1,316.

2.3 DATA ANALYSIS

In the following two chapters, the findings of the analyses are presented, and the chapters are organised according to the four key research questions. There are a number of points to note regarding the data analyses and the interpretation of findings. For all analyses involving data from Wave 2, the data are weighted using the Wave 2 weighting variable to adjust for any bias in the sample due to attrition between waves. Where analyses involve data from Wave 1 only, the Wave 1 weighting variable is used. Where analyses involve data from both waves, the Wave 2 weighting variable is applied. The analyses are conducted on the sample which participated in both waves of the study. Finally, a number of the scales demonstrated reliability that was lower than 0.70, which is considered to be the cut-off for acceptable reliability when using scale scores. The SDQ reliability scores (Table 2.1) were generally acceptable - the internalising sub-scale at Wave 1 was 0.69, and close to the acceptable level. All other internalising and externalising difficulties alpha values were greater than 0.70. The SMFQ reliability was excellent as was reliability for the trust sub-scale of the IPPA (although the alienation sub-scale had lower reliability at 0.63).

A number of the parenting and parent-child relationship scales had less than optimal reliability values: specifically, the Pianta closeness sub-scales at Wave 1 were 0.64 (fathers) and 0.65 (mothers). The dependence sub-scale (measured at Wave 1 only) had low reliability. However, the Pianta conflict sub-scale reliability was good at Wave 1, and both closeness and conflict sub-scales demonstrated good reliability at Wave 2. The reliability values for both mother and father report of monitoring and child disclosure were only acceptable (from 0.43 to 0.53), although the scale for parental control based on child report was good. Reliability values for the Parenting Styles Inventory were only moderate, with only the responsiveness sub-scale for fathers at Wave 2 reaching the acceptable level, although this sub-scale for fathers was close to the acceptable level at Wave 1 and for mothers at Wave 2 (0.68). Where scales demonstrate less than acceptable reliability, caution should be exercised in interpreting the findings associated with these measures. This will be highlighted throughout the report.

Chapter 3

FINDINGS I: SOCIAL, EMOTIONAL AND BEHAVIOURAL OUTCOMES AMONG 13-YEAR-OLDS

This chapter, the first of two findings chapters, deals with the first two research questions. The first research question asks: How are 13-year-olds faring in terms of their social, emotional and behavioural development? The second research question asks: How do social, emotional and behavioural outcomes at 13 years relate to their outcomes at 9 years?

3.1 HOW WELL ARE YOUNG PEOPLE FARING?

With respect to the first research question, in order to profile how well young people are doing at 13 years and what level of difficulties are displayed, data from the SDQ (mother report), the SMFQ (young person report) and the questions on antisocial and risky behaviour (both parent and young person report) were analysed.

Table 3.1 illustrates the descriptive statistics for SDQ sub-scales and the SMFQ scales. The data suggest that overall, the scores on the SDQ difficulties and depressive symptoms scales were low, and the distribution of scores was positively skewed, meaning that the majority of the sample are faring well, as indicated by their scores on these scales.

Table 3.1: Descriptive statistics for the SDQ and SMFQ scales at Wave 2

Statistic	SDQ total difficulties (n = 7,524)	SDQ internalising (n = 7,524)	SDQ externalising (n = 7,524)	SMFQ (low mood) (n = 7,393)
Possible range	0-40	0-20	0-20	0-26
Achieved range	0-35	0-20	0-20	0-26
Mean	7.09	3.05	4.04	3.86
Standard Deviation	5.40	2.97	3.45	4.38
Skewness[8]	1.21	1.36	1.10	1.89
Median[9]	6.0	2.0	3.0	3.0

Further analysis considered the proportion of the sample who scored above 'cut-off' points used in previous research, or as recommended by the scale authors. With respect to the SDQ, and as noted in Chapter 2, Goodman and colleagues presented a four-band classification to identify young people at risk of social, emotional and behavioural difficulties: 0 to 13 represented scores close to average, 14-16 slightly raised, 17-19 higher and 20-40 very high, representing 80 per cent, 10 per cent, 5 per cent and 5 per cent of the UK-based population respectively upon which the cut-offs were based (sdqinfo.org). Comparative percentages based on ***Growing Up in Ireland*** data reveal that a lower proportion of 13-year-olds scored in the ranges than found in the UK, with almost 88 per cent of the 13-year-olds scoring within the 'normal' range indicating no significant level of difficulty, and 5.9 per cent scoring 14-16, 3.3 per cent scoring 17-19 and 3.1 per cent scoring 20 or above.[10] A recent analysis of data from the Millennium Cohort Study in the UK indicated that at age 11 years, 15 per cent of the sample has scores greater than 13 (also notably lower than the 20% found by Goodman) (Hope, Pearce, Chittleborough, Deighton et al., 2018). Thus, children in Ireland are faring well in comparison with Goodman's original sample upon which the cut-offs were derived and with the MCS data.

8 Skewness refers to the distribution of scores in the population. When scores are normally distributed, the majority of scores lie around the possible mid-point with fewer scores towards the minimum and maximum points. A symmetrical distribution has a *skewness* of zero. An asymmetrical distribution with a long tail to the right (higher values) has a positive skew. An asymmetrical distribution with a long tail to the left (lower values) has a negative skew. If *skewness* is less than –1 or greater than +1, the distribution is highly skewed. If *skewness* is between –1 and –½ or between +½ and +1, the distribution is moderately skewed. If skewness is between –½ and +½, the distribution is approximately symmetric.

9 The median, also termed the 50th percentile, is the score below which half of the sample fall. It is the mid-point score in the distribution.

10 The figures reported here for the SDQ and SMFQ outcomes differ from those reported upon in *The lives of 13-year-olds*. In this report, cut-offs defined by scale authors were used – this enables comparison with international data based on the same scale and cut-off points. In *The lives of 13-year-olds*, the young people who scored in top decile (10%) of young people were defined as being 'at risk': these were the young people who displayed high scores relative to the rest of the sample. Using this approach, the large representative sample of young people in ***Growing Up in Ireland*** serves as its own comparative or normative sample.

In relation to the SMFQ, the mean score for the 13-year-olds was 3.86. In addition, using a score of 8 or above as a cut-off to identify those who might be diagnosed as 'depressed', 15.9 per cent were categorised as 'depressed'. The mean score of 3.86 compares favourably with a mean score of 5.4 for 14-year-olds in the UK-based Millennium Cohort Study (Lewis, Neary, Polek, Flouri & Lewis, 2017), and based on the Longitudinal Study of Australian Children data from the child cohort at age 14 to 15 years, 26 per cent scored at or above the cut-off (Gray & Daraganova, 2017), which represents a higher proportion than the 16 per cent reported within the ***Growing Up in Ireland*** sample.

Table 3.2 illustrates descriptive statistics for the SDQ and SMFQ scales, for girls and boys. The differences between boys and girls on the total SDQ scale and the internalising and externalising scales were significant, with boys higher on total number of difficulties and externalising difficulties, and girls higher on internalising difficulties. Because even small differences can be statistically significant with very large samples, effect sizes provide a useful indicator about how meaningful a statistical difference actually is. Thus, while these differences between boys and girls were statistically significant, the effect sizes were negligible to small.[11] In addition, there was no significant difference in the proportion of boys and girls who were categorised into the 'at risk' group on the SDQ (score > 13). In contrast, significantly more girls than boys were categorised into the 'risk' group on the SMFQ (18% for girls versus 13.9% for boys).

Table 3.2: Descriptive statistics for the SDQ and SMFQ scales for girls (n = 3,631) and boys (n = 3,761)

Statistic	Girls	Boys	Effect size
SDQ total difficulties Mean (SD)	6.88 (5.36)	7.29 (5.43)	0.08
SDQ internalising Mean (SD)	3.21 (2.99)	2.89 (2.92)	0.11
SDQ externalising Mean (SD)	3.67 (3.29)	4.41 (3.56)	0.22
SMFQ Mean (SD)	4.12 (4.76)	3.60 (3.97)	0.12
SDQ % above cut-off of 13	11.7%	12.9%	NS
SMFQ % at cut-off of 8 and above	18.0%	13.9%	p< .001

Frequency analyses were conducted on the young person's response to questions about engagement in antisocial behaviour. As previously reported by Williams et al. (2018), the general pattern that emerged from the findings was that the majority of young people had not engaged in any of the behaviours, and among those who had, it had occurred on one occasion only.

11 The effect size refers to how big the difference is between two groups or conditions. Values of the effect size (Cohen's D statistic) should be interpreted as follows: negligible effect (>= -0.15 and < .15); small effect (>= .15 and < .40); medium effect (>= .40 and < .75); large effect (>= .75 and < 1.10); very large effect (>= 1.10 and < 1.45); and huge effect > 1.45.

Table 3.3: Frequency of antisocial behaviours[12] (% of 13-year-olds, n = 7,125-7,131)[13]

Behaviour	Never	Once	Two to five times	More than five times
Not paid correct fare on bus	86	7	4	2
Shoplifting	93	5	2	1
Behaving badly in public	88	7	3	1
Travelled in a stolen vehicle	99	<1	<1	<1
Stolen from somebody at school	94	5	1	<1
Carried a knife or weapon	97	2	<1	<1
Damaged another's property	96	3	1	<1
Broken into a house/building	99	<1	<1	<1
Graffiti or vandalism	94	4	2	<1
Forced money/something else out of another person	99	1	<1	<1
Taken something from home without permission	86	8	4	1
Broken into a vehicle to steal from it	99	<1	<1	<1
Set fire/tried to set fire to someone's property	99	<1	<1	<1
Hit, kicked or punched	83	10	6	2
Involved in a serious fight	96	3	1	<1

On the basis of responses to these questions, a scale was developed wherein participants received a score of 0 for a 'never' response, and a score of 1 if they had engaged in the behaviour at least once. The rationale for this approach was that the cells representing the number of individuals who had engaged in the behaviours multiple times were very small with 1 per cent or less of the participants indicating that they engaged in nine of the 15 behaviours two to five times, and 1 per cent or less indicating that they engaged in 13 of the behaviours more than five times. Thus, multiple occurrences of these serious offences were very rare in the sample. The development of the scale on the basis of any or no involvement for each of the behaviours yields an insight into the extent to which behaviours co-occur, or whether individuals tend to just engage in one or two of the behaviours. The possible maximum score was 15 (if an individual engaged in each of these behaviours at least once), and the minimum score was 0, if an individual had never engaged in any of these behaviours. Individuals were only assigned scores if they answered each item (n = 7,121). Almost two-thirds of the sample had never engaged in any of the behaviours, while 18 per cent had a score of one, meaning that they had engaged in one of the behaviours once. A further 7 per cent of young people received a score of 2, meaning they had engaged in either of the two behaviours at least once (but possibly more often). Together these groups who engaged in low levels of antisocial behaviour represented 91 per cent of the sample. Among the remaining young people (n = 668), a further 418 young people (5.9% of the sample overall) received a score of 3 or 4, while the remaining 250 young people (3.5%) scored greater than 4. These individuals are engaging in multiple types of antisocial behaviour, although the behaviours may be occurring at low frequency. Also, the ASB score does not indicate the seriousness of the behaviours.

12 The complete description of behaviours is provided in Chapter 2.
13 Totals may not add to 100 due to rounding; the range of Ns indicate that not all respondents answered every question.

Table 3.4: Percentage of antisocial behaviours among those who had a score of 3 or above on the antisocial behaviour scale (% of 13-year-olds who scored > 3 on ASB; n = 668)[14]

Behaviour	Never	Once	More than once
Not paid correct fare on bus	45	27	28
Shoplifting	53	28	19
Behaving badly in public	38	34	28
Travelled in a stolen vehicle	92	<5	<5
Stolen from somebody at school	59	28	14
Carried a knife or weapon	78	13	10
Damaged another's property	65	21	14
Broken into a house/building	93	<5	<5
Graffiti or vandalism	56	25	19
Forced money or something else out of another person	90	7	<5
Taken something from home without permission	36	30	34
Broken into a vehicle to steal from it	94	<5	<5
Set fire or tried to set fire to someone's property/ building	91	6	<5
Hit, kicked or punched	37	26	38
Involved in a serious fight	67	24	10

The table illustrates that of the participants with a score of 3 or more, less than one-fifth of them engaged in 11 of the 15 behaviours more than once. The behaviours that a higher proportion of young people engaged in more than once were: fare evasion, behaving badly in public so that people complained or you got into trouble, taking something from home without permission, and hit, kicked or punched someone. The conclusion that might be tentatively drawn is that among the 668 participants who display higher levels of antisocial behaviour, they tend to engage in multiple types of antisocial behaviour but with low frequency. In relation to gender, the mean antisocial behaviour score was significantly higher among boys (M = 0.96) than girls (M = 0.57), with a small effect size (0.24). Among the 668 young people who received a score of 3 or above on the antisocial behaviour scale, 69 per cent were boys and 31 per cent were girls.

Over 7 per cent of young people (n = 550) noted that they had previously been in trouble with the Gardaí. Unsurprisingly, the mean antisocial behaviour score was significantly higher among the group who had been in trouble with the Gardaí (M = 2.55) in comparison with those who had never been in trouble with the Gardaí (M = 0.62), with a very large effect size (1.24).

Parents responded to 11 questions about their child's antisocial behaviour over the past year. More than 99 per cent of the parents reported that their child had never engaged in seven of the 11 behaviours. However, 9 per cent of parents reported that their child often started fights or bullied, 2 per cent of parents noted that their child had lied to obtain goods or favours, 2 per cent of parents said that their child had been physically cruel to other people, and 2 per cent noted that their child had deliberately destroyed property. Therefore, based on parental report, incidences of antisocial behaviour were very rare within the sample. This discrepancy between parent- and youth report of conduct-related problems is not unusual within research and self-ratings of externalising behaviours, such as ASB, tend to be higher than parent-ratings (De Los Reyes & Kazdin, 2005; Van der Ende, Verhulst & Tiemeier, 2012). This might be because parents are not always aware when their children engage in ASB.

The final outcome to be considered is use of cigarettes, alcohol and drugs. Nine per cent of the participants indicated that they had previously smoked a cigarette, but of these 77 per cent no longer smoked. Thus, approximately 2 per cent of the entire sample currently smoked (n = 140): about half of these smoked every day. Among those who smoked, the mean number of cigarettes per week was 17.46 (SD = 22.28).

14 Totals may not add to 100 due to rounding.

There were no gender differences in terms of having ever smoked, frequency of current smoking or mean number of cigarettes smoked per week. In terms of smoking cannabis, sniffing glue/paints/petrol and using any other 'harder' drugs, 1.4 per cent, 2.9 per cent and 0.4 per cent of the participants reported that they had previously tried these substances, respectively. Boys were more likely to have tried cannabis ($p < .05$),[15] girls were more likely to have sniffed glue/paints/petrol ($p < .001$), but there was no gender difference in relation to use of other drugs.

Use of alcohol was more prevalent than cigarettes or other drugs – 15.5 per cent of the sample had previously ever had an alcoholic drink (other than just a few sips) and boys were more likely than girls to have previously had an alcoholic drink. However, only half of these – 7 per cent of the entire sample – had consumed a whole drink the previous year ($n = 532$) and there were significantly more boys (54% of these were boys) than girls (46%; $p < .05$). Those who consumed alcohol in the previous year were asked how often they currently drank (even if it is just a small amount): 25 per cent never drank currently, 36 per cent rarely, 30 per cent only on special occasions, and 8.5 per cent at least once a month. Thus, of the 532 participants who had a drink in the past year, only 46 had a drink at least once a month (0.6% of the entire sample). Boys were more likely to say that they drank only on special occasions, and girls were more likely to state that they rarely drank ($p < .01$). There were no gender differences in terms of the other categories of response. The 532 who currently drank were asked if they had ever been drunk from alcohol – half never had, one-third had been drunk once, 16 per cent had been drunk at least twice ($n = 87$; 1% of entire sample). No gender differences emerged in relation to frequency of being drunk.

Overall, in relation to the first research question about how young adolescents in Ireland are faring in terms of their social, emotional and behavioural outcomes at 13 years, the key message is that the majority of them are faring very well, with no significant difficulties. Using internationally defined cut-offs on the SDQ, 88 per cent of the young people fell within the normal range indicating no significant level of difficulty, with 12 per cent displaying some form of difficulty. In relation to the depression screening measure, 15.9 per cent of the 13-year-olds scored above the cut-off used to identify those who might be diagnosed as 'depressed'. Girls were significantly more likely than boys to fall above this cut-off (18% for girls, 13.9% for boys). Rates of engagement in ASB based on youth self-report were low – 91 per cent of the young people had either never engaged in any ASB and or had engaged in one or two ASBs but at a low frequency. The remaining young people, approximately 9 per cent of the sample, reported that they engaged in multiple types of ASB, although these may also be occurring at a low frequency. Overall, boys were more likely than girls to report engaging more often in ASB and 7 per cent of young people reported that they had previously been in trouble with the Gardaí. Finally, rates of cigarette smoking and drug taking were very low among the 13-year-olds. Currently, 2 per cent of the sample smoked cigarettes, although 9 per cent had previously experimented with cigarettes; less than 3 per cent of the young people had tried other drugs, including smoking cannabis (1.4%) and sniffing glue/petrol/paint (2.9%). Consumption of alcohol was more common among the 13-year-olds: 15.5 per cent of the sample had previously ever had an alcoholic drink; and this was more likely for boys than girls. However, less than 1 per cent of the sample (0.6%) had a drink at least once a month.

3.2 CONTINUITY AND CHANGE IN OUTCOMES FROM 9 YEARS TO 13 YEARS

The second research question asks: How do social, emotional and behavioural outcomes at 13 years relate to outcomes at 9 years? This question addresses the issue of continuity or change in difficulties/well-being from age 9 to age 13, and seeks to identify sub-groups who exhibit difficulties/well-being at both time points or at neither time point (reflecting stability), and groups where well-being improves or deteriorates between waves (reflecting change). In order to conduct these analyses, the SDQ data were used, as this is the only measure of social, emotional and behavioural well-being administered at both time points.

15 The figures reported in this study may differ slightly from previously reported findings because of differences in the cases selected for analysis and/or the recoding of variables.

Pearson *r* correlations were run to determine the strength of associations between SDQ internalising, externalising and total scores at Wave 1, with their respective scores at Wave 2. A Pearson *r* of 1 indicates that there is a perfect relationship between scores at both waves, a Pearson *r* of 0 indicates no relationship between scores at the two waves. All Pearson *r* values were highly significant and positive – thus higher scores at Wave 1 were associated with higher scores at Wave 2. Pearson *r* values were: 0.533 for internalising scores, 0.644 for externalising scores, and 0.643 for total scores. These are moderate to strong correlations, suggesting considerable continuity between waves. By computing R-squared, it can be concluded that 28 per cent of variance in Wave 2 internalising scores can be accounted for by Wave 1 internalising scores; and 41 per cent of variance in both Wave 2 externalising and total scores can be accounted for by the respective scores at Wave 1.[16]

Additional analysis considered the mean scores of the SDQ sub-scales and total scores at Wave 1 and 2. Paired-samples t-tests tested whether differences in scores between waves were statistically significant, and effect sizes of the differences were computed. All comparisons were significant ($p < .001$): scores were significantly higher at Wave 1 than at Wave 2, although the effect sizes were negligible to small.

Table 3.5: Mean (SD) scores for the SDQ scales at Wave 1 and Wave 2 (n = 7,523)

Statistic	Wave 1	Wave 2	Effect size
Total difficulties	8.00 (5.35)	7.09 (5.40)	.17 (small)
Internalising (Emot + Peer)	3.40 (3.01)	3.05 (2.96)	.12 (negligible)
Externalising (Cond + Hyper)	4.59 (3.43)	4.04 (3.45)	.16 (small)
Emotional scale	2.14 (2.06)	1.90 (2.01)	.12 (negligible)
Conduct scale	1.36 (1.51)	1.23 (1.48)	.05 (negligible)
Hyperactivity/Inattention	3.23 (2.50)	2.82 (2.48)	.17 (small)
Peer problems	1.26 (1.50)	1.14 (1.50)	.08 (negligible)
Prosocial	8.88 (1.43)	8.81 (1.53)	.05 (negligible)

Using a cut-off score of 13, 14.9 per cent of 9-year-olds (n = 1,123) were classified as being 'at risk of difficulty'; the corresponding figure for the 13-years olds was 12.3 per cent (n = 927). Together, these analyses suggest that overall, the 13-years are doing better than they were at 9 years of age, although the differences are small in magnitude. A significantly higher proportion of individuals are classified as 'at risk' at 9 years than at 13 years. Consideration of average differences between participants at Wave 1 and Wave 2 obscures intra-individual variation in well-being across waves. Table 3.6 depicts the classification of 'at risk' at 9 years and how it corresponds with 'at risk' status at 13 years.

Table 3.6: 'At risk of difficulty status' on SDQ at Wave 2, according to SDQ status at Wave 1 (n = 7,524)

		Wave 1	
Wave 2		Not at risk of difficulty	At risk of difficulty
	Not at risk of difficulty	79.8% (6,006)	7.9% (591)
	At risk of difficulty	5.3% (396)	7.1% (531)

As indicated in the table, four patterns were revealed: of the total sample, four-fifths of participants did not display risk of difficulty at either wave – these participants were doing well at Wave 1 and continued to do well at Wave 2. In contrast, 7 per cent of the sample showed evidence of difficulty at both waves. Both of these groups reflect stability and continuity in terms of their risk categorisation across waves. Contrastingly, almost 8 per cent of the sample was at risk of difficulty at Wave 1, but not at Wave 2,

16 Variance is a measure of how much people differ. If we can explain 100 per cent of the variance we understand completely what makes people different. If we want to explain why children have different SDQ scores at Wave 2, if we know their score from Wave 1, we can explain 28%/41% of the difference in their internalising and externalising/total scores respectively.

reflecting an improvement in their well-being between waves. Just over 5 per cent of the sample was not at risk of difficulty at Wave 1 but displayed difficulties at Wave 2, reflecting a decrease in their total SDQ scores between waves. These latter two groups reflected change in well-being between waves.

As noted in Williams et al. (2018), of those who were at risk of social-emotional difficulties at age 9 (approximately 10% of the total sample), 46 per cent were in the at-risk category at age 13. The corresponding figure based upon the scale author-defined cut-off points used in this report was 47.3 per cent. Thus, 1,122 children were classified as being at risk at Wave 1; at Wave 2, 531 of these children were classified as still being at risk (47.3% of 1,122). Thus, about half of the children at risk at Wave 1 had moved out of the at-risk category.

In summary, in relation to continuity and change in social, emotional and behavioural outcomes between 9 and 13 years, the key message is one of continuity – 80 per cent of the sample displayed no significant difficulties at either wave, while about 7 per cent were categorised as having difficulties at both waves. This is the group about which we should be most concerned, as their social, emotional and behavioural problems are likely becoming more entrenched. Among the remaining 12 per cent of the sample, difficulties were either newly emerging at age 13 (for 5%) or difficulties had dissipated between ages 9 and 13 (7%).

Chapter 4

FINDINGS II: PREDICTING SOCIAL, EMOTIONAL AND BEHAVIOURAL OUTCOMES AT 13 YEARS

This chapter, the second of two findings chapters, deals with the third and fourth research questions. The third research question asks: What factors predict social, emotional and behavioural outcomes at 13 years? The fourth research question asks: What factors are associated with stability and change in these outcomes from 9 to 13 years?

4.1 WHAT FACTORS PREDICT SOCIAL, EMOTIONAL AND BEHAVIOURAL OUTCOMES AT 13 YEARS?

The third research question considers what factors are associated with well-being at 13 years. Eight outcomes were investigated: total SDQ scores, SDQ internalising scores, SDQ externalising scores, SMFQ (depressive symptom) scores, antisocial behaviour score and use of alcohol, cigarettes and drugs. Informed by the literature set out in Chapter 1, predictors of outcomes were: pubertal status, indicators of the quality of relationships with peers and parents, as well as maternal education level, income quintile, and changes in family structure across waves.

Initially, the predictor variables were subjected to descriptive analyses, in order to give the reader a sense of these various characteristics within the sample. Additionally, each set of predictor variables was related independently to each of the outcomes, before building to final sets of models which consider all predictors simultaneously.

4.1.1 PUBERTAL STATUS

Boys were asked if their voices had changed at all: as reported by Williams et al. (2018), just over one-fifth of the boys indicated that their voice had totally changed, while 23 per cent noted that their voices were the same. The remainder of the sample were less certain: 38 per cent indicated that occasionally their voices were a lot lower, while 19 per cent noted that they were not sure. These groups were subsequently categorised into three groups: 21 per cent where their voice had totally changed; 57 per cent where some change was underway but there was uncertainty or it was occasional, and 23 per cent for whom their voices remained unchanged. Broadly, describing these groups in relation to the cohort to which they belong, the first group is manifesting this clear sign of puberty earlier than the other two groups, while the third group is not outwardly manifesting this sign of puberty. Reflecting these distinctions, the three groups are heretofore described as early (21%), on-time (57%) and late (23%).

Comparison of the three groups of boys on outcomes revealed that in relation to some outcomes the early group was faring best; in relation to others, the late group was faring best. Table 4.1 reveals the mean score on the outcome measures for the early, on-time and late groups, and the result of group comparisons.

Table 4.1: Mean (SD) scores for the outcome measures according to timing of puberty for boys (n = 3,648)

Outcome measure (W2)	Early (n = 751)	On-time (n = 2,078)	Late (n = 819)	Group comparison
SDQ total	6.82 (5.18)	7.21 (5.31)	7.69 (5.71)	p < .01; L > E
SDQ internalising	2.66 (2.69)	2.81 (2.84)	3.21 (3.22)	p < .01; L > OT, E
SDQ externalising	4.17 (3.68)	4.40 (3.49)	4.49 (3.52)	NS
SMFQ (depressive mood)	3.54 (3.65)	3.48 (3.80)	3.90 (4.70)	p < .05; L > OT
Antisocial behaviour total	1.19 (2.08)	1.03 (1.86)	0.68 (1.74)	p < .001; L < OT, E

The analyses showed that the late group had significantly higher SDQ total scores than the early group (Effect Size 0.16 small); and significantly higher SDQ internalising scores than both the on-time (ES = 0.14 negligible) and the early groups (ES = 0.19, small). The late group also had significantly higher SMFQ

scores than the on-time group (ES = 0.10, negligible). The late group had significantly lower ASB total scores than both the on-time and the early group (ES = 0.19 and 0.27, respectively, both small effects).

Girls were asked if their periods had started, and if so, at what age: 72 per cent of girls had already had their first period (n = 2,486), while 28 per cent had not. Among those who had experienced menstruation, the youngest age of onset was 8 years and 7 months, and the mean (and median) age of onset was 12 years 3 months (SD = 0.88 years) (based on n = 2,378). Based on these data, as with the boys, girls were divided into three categories reflecting the timeliness of the onset of menstruation, in relation to the cohort to which they belong. The late group was defined as those who had not yet started their periods; the early group represented half of the girls who had onset of menstruation earlier than the median age of 12.25 years, the on-time group represented half of the girls who had onset of menstruation at or later than the median age of 12.25 years.

Table 4.2: Mean (SD) scores for the outcome measures according to timing of puberty for girls (n = 3,329)

Outcome Measure (W2)	Early (n = 1,132)	On-time (n = 1,245)	Late (n = 952)	Group comparison
SDQ total	7.30 (5.46)	6.31 (4.81)	6.36 (5.00)	p < .001; E > OT, L
SDQ internalising	3.47 (3.14)	2.89 (2.73)	3.00 (2.78)	p < .001; E > OT, L
SDQ externalising	3.82 (3.32)	3.41 (3.03)	3.37 (3.16)	p < .01; E > OT, L
SMFQ (depressive mood)	4.92 (5.30)	3.80 (4.27)	3.46 (4.35)	p < .001; E > OT, L
Antisocial behaviour total	0.68 (1.38)	0.51 (1.10)	0.44 (1.33)	p < .001 E > OT, L

The analyses showed that, unlike for the boys, it was the early group who displayed poorer outcomes than both the on-time and the late group, across all outcomes. Thus the early group had higher SDQ total scores than the late and on-time group (ES = 0.18, 0.19, small, respectively); and had significantly higher SDQ internalising scores than both the late and on-time groups (ES = 0.20, 0.16, small, respectively). The early group had significantly higher SDQ externalising scores (ES = 0.15, small for comparison with late group; ES = 0.02 negligible for comparison with on-time group). The early group had significantly higher SMFQ (depressive) scores than both the on-time (ES = 0.24 small) and the late group (ES = 0.31, small), and significantly higher antisocial behaviour scores than the late group (ES = 0.18, small) and the on-time group (0.13 negligible).

Finally, associations between pubertal status and use of cigarettes, alcohol and other drugs were investigated as proxies for engagement in risky behaviour. As noted previously, the prevalence of these behaviours in the sample was low: for use of alcohol, those who had consumed an alcoholic drink in the previous year were selected (n = 532; 7.5%); those who had previously smoked a cigarette (n = 616; 8.7%) were selected; for the use of other drugs, those who had tried *any* type of drug were selected (n = 263; 3.7%).[17]

On-time boys were less likely to have tried any drugs, than either late or early maturing boys, but the use of drugs did not differ according to girls' pubertal status. Early maturing girls were significantly more likely to have ever smoked a cigarette and late maturing girls were significantly less likely to have ever smoked a cigarette, but there were no differences according to boys' pubertal status. In relation to having had a drink in the previous year, early maturing boys were significantly more likely to have had a drink in the past year, and late maturing boys were significantly less likely to have had a drink in the past year. Similarly, early maturing girls were significantly more likely and late maturing and on-time girls were significantly less likely to have had an alcoholic drink in the past year.

17 Chi square analyses were conducted and where a significant p value was obtained, standardised residuals were inspected to identify which groups differ significantly from what is expected if there are no differences across the groups. Differences denoted by a SR greater than ±2 are highlighted.

In summary, late maturing boys had higher internalising difficulties and depressive scores, whereas early maturing boys had higher levels of antisocial behaviour and were more likely to have had an alcoholic drink. Early maturing girls had poorer outcomes in terms of social-emotional difficulties *and* antisocial behaviour and were more likely to have smoked cigarettes and had an alcoholic drink.

4.1.2 PARENTING AND FAMILY RELATIONSHIPS

Parents completed the Pianta Child-Parent Relationship Scale at both waves, yielding closeness and conflict scores, and enabling change in these scores over time to be examined.

Table 4.3: Descriptive statistics for the Pianta Child-Parent Relationship Scale (n = 7,507-7,513 for mothers, n = 5,143-5,785 for fathers)

	Possible range	Achieved range	Mean (SD)	Skewness
Conflict W1 Mother	8-40	8-39	14.31 (5.86)	1.11
Conflict W2 Mother	8-40	8-40	15.30 (6.59)	1.03
Closeness W1 Mother	7-35	7-35	32.95 (2.76)	-2.42
Closeness W2 Mother	7-35	11-35	32.09 (3.37)	-1.77
Conflict W1 Father	8-40	8-37	14.17 (5.29)	0.99
Conflict W2 Father	8-40	8-40	15.06 (5.95)	0.97
Closeness W1 Father	7-35	9-35	31.93 (3.15)	-1.59
Closeness W2 Father	7-35	9-35	30.50 (3.84)	-1.26

Inspection of the skewness scores indicates that the distributions of scores are moderately (for conflict) and highly (for closeness) skewed. Thus, the majority of mothers and fathers rate their relationships with their children as being low in conflict and high in closeness. Paired sample t-tests compared closeness and conflict scores between Waves 1 and 2. All comparisons were significant ($p < .001$). Conflict was higher in mother-child and father-child relationships at Wave 2 than at Wave 1 (ES = 0.16 and 0.18, small, respectively). Closeness was lower in mother-child relationships (small effect size: 0.28) and in father-child relationships (medium effect size: 0.41) at Wave 2 than at Wave 1. These findings reveal that quality of relationships with parents deteriorated between Waves 1 and 2, within the group as a whole. There is likely to be substantial variability in the extent of these changes for individual participants, and in order to assess this, change scores were computed by subtracting Wave 2 scores from Wave 1 scores. A positive change score indicated a decrease in conflict or closeness over time (Wave 1 score was higher than Wave 2 score); a negative change score reflected an increase in conflict or closeness over time (Wave 2 score was higher than Wave 1 score).[18] Table 4.4 illustrates descriptive statistics for these change scores, and the proportion of the sample who had positive and negative change scores, and the proportion with a no-change score (0).

18 It is acknowledged that whether or not these change scores are termed 'positive' or 'negative' relates only to the mathematical meaning of the scores (whether Wave 1 minus Wave 2 score is a positive (greater than zero) or negative (less than zero) number). The meaning of these change scores is different depending upon whether the construct is positive (or a good thing for the parent-child relationship like closeness) or negative (bad for the parent-child relationship, such as conflict). A positive change score for closeness means that closeness was higher at Wave 1 than Wave 2, and so closeness had decreased over time (negative for the parent-child relationship). A positive change score for conflict means that conflict was higher at Wave 1 than at Wave 2, so conflict had decreased over time (positive for the parent-child relationship).

Table 4.4: Descriptive statistics for change scores in the Pianta Child-Parent Relationship Scale (n = 7,498 for mothers, n = 4,830 for fathers)

	Mother-Child relationship		Father-Child relationship	
	W1-W2 Conflict	W1-W2 Closeness	W1-W2 Conflict	W1-W2 Closeness
Range	-27 – +27	-28 – +22	-28 – +26	-24 – +26
Mean (SD)	-0.99 (5.95)	0.86 (3.58)	-1.00 (5.57)	1.41 (3.95)
Median	0	0	-1.00	1.00
% positive change score	38.0	47.8	36.8	58.0
% negative change score	49.6	27.3	52.4	27.1
% change score of 0	12.4	24.9	10.8	14.9

The data indicate that for 48 per cent of the mothers and 58 per cent of the fathers, closeness to their children was lower at Wave 2 than at Wave 1, while for 27 per cent of mothers and fathers, closeness to their children had increased between waves. In terms of conflict, 50 per cent of mothers and 52 per cent of fathers reported higher conflict scores at Wave 2 than at Wave 1, yielding negative change scores, indicating that conflict had increased between waves. In contrast, 38 per cent of mothers and 37 per cent of fathers reported lower conflict at Wave 2 than at Wave 1. Thus, deterioration in the quality of the parent-child relationship was not ubiquitous and for a substantial proportion of the sample, conflict and closeness remained stable or improved between Waves 1 and 2.

While knowing how scores change over time gives some insight into the extent of stability in the quality of parent-child relationships across the transition to adolescence, the meaning of change or stability will vary depending upon the baseline. Stability in relationships will be positive if relationships are low in conflict and high in closeness to begin with (at Wave 1), but stability will be particularly deleterious if relationships are characterised by high conflict and low closeness at Wave 1. In order to further assess the meaning of stability and change, participants' closeness and conflict scores were categorised into low and high to identify a proportion of individuals who had high conflict scores (relative to the rest of the sample) and low closeness scores (relative to the rest of the sample). The scale authors do not provide any cut-off scores for the classification of groups and so frequencies, means and standard deviations were inspected to identify scores above/below which a certain proportion of the sample scored. For the purpose of this classification, a score above 18 was categorised as 'high' in conflict, a score below 28 was categorised as 'low' in closeness.

Table 4.5: Percentage of sample with scores above and below selected cut-offs on the Pianta conflict and closeness sub-scales (n = 7,507-7,513 for mothers, n = 5,143-5,785 for fathers)

	Pianta sub-scales	
	> 18 conflict sub-scale	< 28 closeness sub-scale
Mother Wave 1	21.1	7.1
Mother Wave 2	26.9	13.0
Father Wave 1	19.5	12.7
Father Wave 2	24.8	24.6

In terms of conflict, approximately one-fifth to one-quarter of the sample were classified as being in relatively high conflict relationships at either Wave 1 or Wave 2, with slightly higher proportions having high conflict relationships in Wave 2 compared with Wave 1 (which corresponds to the findings of the analysis of the absolute change scores, previously presented). In terms of closeness, there was greater variability in respect to the proportion of the sample classified as having low closeness with ranges from

7 per cent to 25 per cent. A higher proportion of fathers' than mothers' relationships with their children were classified as relatively low in closeness, and relationships in Wave 2 were more likely to be classified as low in closeness than in Wave 1. Given that the scores are highly skewed and that there are no published cut-offs for what constitutes high or low conflict/closeness, it is noted that these relationships may not in other contexts be characterised as high conflict relationships, or low closeness relationships.

Classifications of high conflict and low closeness were compared across waves to yield four groups – those who were stably high, stably low, those who changed from low to high and from high to low, as illustrated in Table 4.6.

Table 4.6: Percentage (Ns) of sample according to classification of mother-child conflict across Waves 1 and 2 (Total n = 7,498)

		Wave 1 classification	
		Low	High
Wave 2 classification	Low	64.2% (4,831)	8.6% (646)
	High	14.5% (1,084)	12.5% (936)

Thus, approximately two-thirds of the sample showed stable and relatively low levels of mother-child conflict, while one-eighth of the sample were classified as having high levels of conflict across both time points. In contrast, 14.5 per cent of the sample transitioned from low to high conflict between Wave 1 and Wave 2, while for 8.6 per cent conflict changed from being high at Wave 1 to low at Wave 2.

Table 4.7 illustrates the proportions (and Ns) for the stable and transitioning groups in relation to father-child conflict and mother-child closeness and father-child closeness.

Table 4.7: Percentage (Ns) of sample classified into stable or transitioning groups in terms of father-child conflict (n = 4,830), mother-child closeness (n = 7,498) and father-child closeness (n = 4,826)

Group	Father-Child conflict	Mother-Child closeness	Father-Child closeness
High stable	10.7% (518)	82.4% (6,176)	69.1% (3,333)
Low stable	67.3% (3,250)	2.5% (189)	5.8% (278)
From High to Low	8.1% (392)	10.5% (791)	18.3% (882)
From Low to High	13.9% (670)	4.6% (342)	6.9% (333)

Associations between changes in parent-child relationships as categorised above and social-emotional outcomes were investigated, as illustrated in Tables 4.8-4.11. Conflict with mothers is dealt with first.

Table 4.8: Mean (SD) scores for the outcome measures according to category of change or stability in conflict in the mother-child relationship (n = 7,096-7,498)

Outcome Measure (W2)	High stable	Low stable	Low to High (increasing)	High to Low (decreasing)
SDQ total	13.04 (6.56)	5.23 (3.93)	9.97 (5.29)	7.54 (4.74)
SDQ internalising	5.66 (3.75)	2.76 (2.52)	3.52 (2.82)	4.79 (3.46)
SDQ externalising	8.13 (3.88)	3.55 (2.75)	4.97 (3.25)	6.65 (3.20)
SMFQ (depressive mood)	5.72 (5.59)	3.35 (3.92)	4.35 (4.54)	4.29 (4.67)
Antisocial behaviour total	1.09 (1.92)	0.63 (1.41)	1.13 (2.24)	0.77 (1.49)

Only significant comparisons are reported at $p < .001$, unless otherwise specified * $p < .05$ and ** $p < .01$.

Across all outcome measures, the high stable conflict group (those with high levels of conflict at both waves) had the worst outcomes in comparison with the low stable group (low conflict at both waves) (ES range from 1.69 huge effect for SDQ total, to ES of 0.28 for antisocial behaviour) and the high-to-low group (decreasing conflict between waves) (ES range from 1.19 very large effect for SDQ total to small effect for antisocial behaviour). The high stable group also had poorer outcomes than the low-to-high group (increasing conflict between waves) on all outcomes except for antisocial behaviour and effect sizes for these comparisons tended to be smaller. Thus, the increasing conflict group and the high conflict stable groups were more similar to each other than the other groups. The low stable group had better outcomes than the increasing conflict group for all outcomes (ES ranged from 1.03 large for SDQ total to 0.31 small for antisocial behaviour) and better outcomes than the decreasing conflict group for all outcomes except antisocial behaviour (ES ranged from 1.03 large medium for SDQ externalising to 0.22 small for SMFQ). Where the increasing conflict group differed from the decreasing conflict group, effect sizes were small to medium, reflecting small differences between these groups. It should be noted however, in line with the findings that the majority of the sample are faring well, that none of the means lie above the thresholds for classification as having difficulty.

Table 4.9: Mean (SD) scores for the outcome measures according to category of change or stability in conflict in the father-child relationship (n = 4,615-4,830)

Outcome Measure (W2)	High stable	Low stable	Low to High (increasing)	High to Low (decreasing)
SDQ total	9.67 (6.29)	5.41 (4.15)	7.97 (5.26)	7.41 (4.84)
SDQ internalising	4.24 (3.70)	2.72 (2.52)	3.44 (2.79)	3.89 (3.39)
SDQ externalising	6.52 (3.78)	3.69 (2.93)	4.48 (3.17)	5.45 (3.42)
SMFQ (depressive mood)	5.07 (5.17)	3.22 (3.73)	4.34 (4.50)	4.19 (4.42)
Antisocial behaviour total	0.92 (1.67)	0.58 (1.32)	0.89 (1.81)	0.77 (1.59)

With respect to father-child conflict and outcomes, broadly similar findings emerged, although the effect sizes tended to be small in magnitude. Overall, the high stable father-child conflict group had poorer outcomes than the three other groups on SDQ total (ES range from 0.37 small to 0.92 large) and SDQ externalising (ES small to large) and on SMFQ (effect sizes all small). The high stable group had higher SDQ internalising scores than the low stable and increasing conflict group (ES small to medium) but did not differ from the decreasing group on SDQ internalising. The stable high group also had higher antisocial behaviour scores than the stable low group (small effect size) but not from either the increasing or decreasing conflict groups. The stable low group had better outcomes than all the other groups (effect sizes mostly small to medium in comparisons with the high-to-low and low-to-high groups). The stable low group did not differ from the decreasing group on antisocial behaviour.

Table 4.10: Mean (SD) scores for the outcome measures according to category of change or stability in closeness in the mother-child relationship (n = 7,098-7,498)

Outcome Measure (W2)	High stable	Low stable	Low to High (increasing)	High to Low (decreasing)
SDQ total	6.52 (5.02)	11.86 (6.39)	8.27 (5.86)	9.90 (6.23)
SDQ internalising	3.23 (2.91)	5.27 (3.56)	4.87 (3.48)	3.68 (3.10)
SDQ externalising	4.29 (3.26)	7.48 (3.84)	5.97 (3.51)	5.66 (3.84)
SMFQ (depressive mood)	3.69 (4.24)	5.06 (5.46)	4.08 (4.14)	4.85 (5.13)
Antisocial behaviour total	0.70 (1.55)	1.17 (2.59)	0.69 (1.27)	1.27 (2.07)

The low stable mother-child closeness group had poorer outcomes than the other three groups in relation to all of the SDQ outcomes, with effect sizes generally small or medium. The low stable group had higher SMFQ scores than the high stable group (ES = 0.31 small) but did not differ from the increasing closeness or decreasing closeness groups. The low stable group also had higher antisocial behaviour scores than both the increasing and the high stable groups (effect sizes small) but did not differ from the decreasing closeness group. Both the increasing and the decreasing closeness groups had poorer outcomes than the high stable group on the three SDQ outcomes with small to medium effect sizes. The decreasing closeness group also had higher SMFQ scores and antisocial behaviour scores than the increasing and high stable closeness groups (small effect sizes).

Table 4.11: Mean (SD) scores for the outcome measures according to category of change or stability in closeness in the father-child relationship (n = 4,612-4,826)

Outcome Measure (W2)	High stable	Low stable	Low to High (increasing)	High to Low (decreasing)
SDQ total	5.83 (4.42)	8.38 (5.54)	6.57 (5.63)	7.83 (5.53)
SDQ internalising	2.87 (2.71)	4.09 (3.14)	3.81 (3.38)	3.29 (2.86)
SDQ externalising	4.01 (3.14)	5.34 (3.74)	4.58 (3.51)	4.71 (3.27)
SMFQ (depressive mood)	3.39 (3.90)	4.31 (5.03)	3.67 (4.28)	4.44 (4.48)
Antisocial behaviour total	0.63 (1.34)	0.75 (1.30)	0.44 (1.01)	0.92 (2.01)

With respect to stability and change in father-child closeness, as was the case for mother-child closeness, the low stable group had poorer outcomes than the other three groups in relation to the SDQ total and externalising scores (small to medium effect sizes), and had higher internalising scores than the high stable and high-to-low (decreasing closeness) groups (small effect sizes). The low stable group had higher SMFQ scores but only in comparison with the high stable group (small effect size). The low stable group did not differ from the other groups on their antisocial behaviour score. The low-to-high (increasing closeness) group also had poorer outcomes than the high stable group on the SDQ total and externalising scores (small effect sizes). However, the high-to-low (decreasing closeness) group had lower internalising scores than the low-to-high (increasing) group and the high stable group. Additionally, the high-to-low (decreasing closeness) group had greater SMFQ scores and antisocial behaviour scores than both the increasing and high stable groups (small effect sizes).

Change in parent-child conflict and closeness was also investigated in relation to pubertal status. Boys' pubertal status was not associated with patterns of change/stability in mother-child or father-child conflict. Girls' pubertal status was not associated with change/stability in father-child conflict. However, early maturing girls were more likely to be classified as having increasing conflict relationships with mothers. With respect to parent-child closeness, early maturing boys were more likely to be classified as having decreasing closeness with mothers and with fathers. Late maturing boys were more likely to be classified as having increasing closeness with mothers and less likely to be classified as having increasing closeness with fathers. Girls' pubertal status was not related to stability or change in closeness to mothers. However, late maturing girls were more likely to be in the increasing, and less likely to be in the decreasing categories on father-child closeness.

Classification of parent-child relationships were next investigated in relation to risky health behaviours, including those who had consumed an alcoholic drink during the previous year (n = 532), those who had previously smoked a cigarette (n = 616) and those who had tried any type of drug (n =263).

Figure 4.1 illustrates associations between changes in closeness/conflict and having tried any type of drug. Those who had stably low levels of conflict with mothers were less likely to have ever tried drugs, while those who had high stable or increasing levels of conflict were significantly more likely to have ever tried

drugs. The same pattern of results emerged with respect to father-child conflict. Those who had moved from high-to-low levels of closeness to mothers were more likely to have ever tried any drugs, while those with high stable levels of closeness to mothers were less likely to have ever tried any drugs. Similarly, those who were in the high-to-low category on closeness to fathers were more likely to have ever tried any drugs.

Figure 4.1: Percentage of 13-year-olds who had tried any drug, according to change/stability in closeness and conflict with mothers and fathers (n = 7,092 for mothers' data; n = 4,618 for fathers' data)

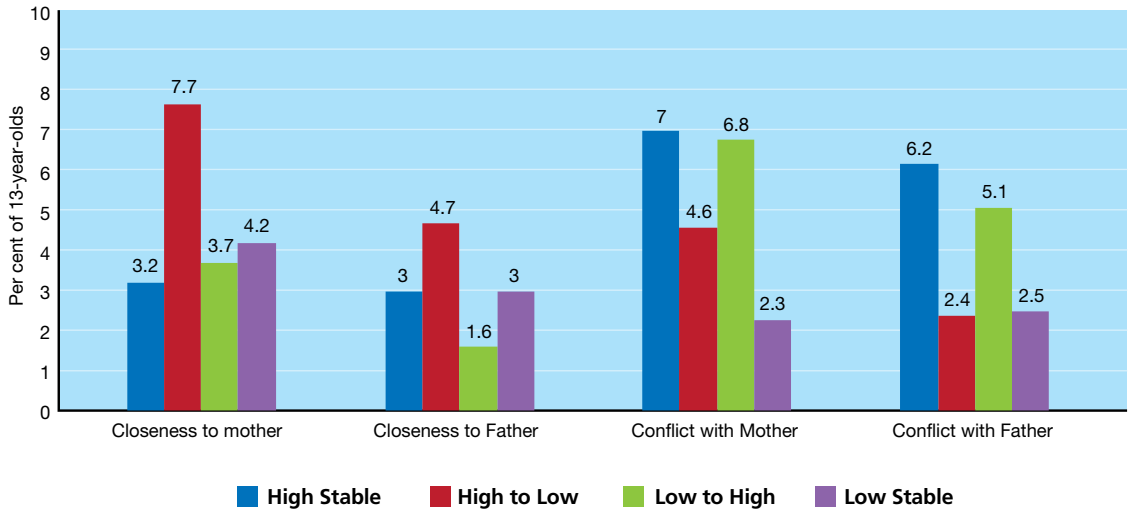
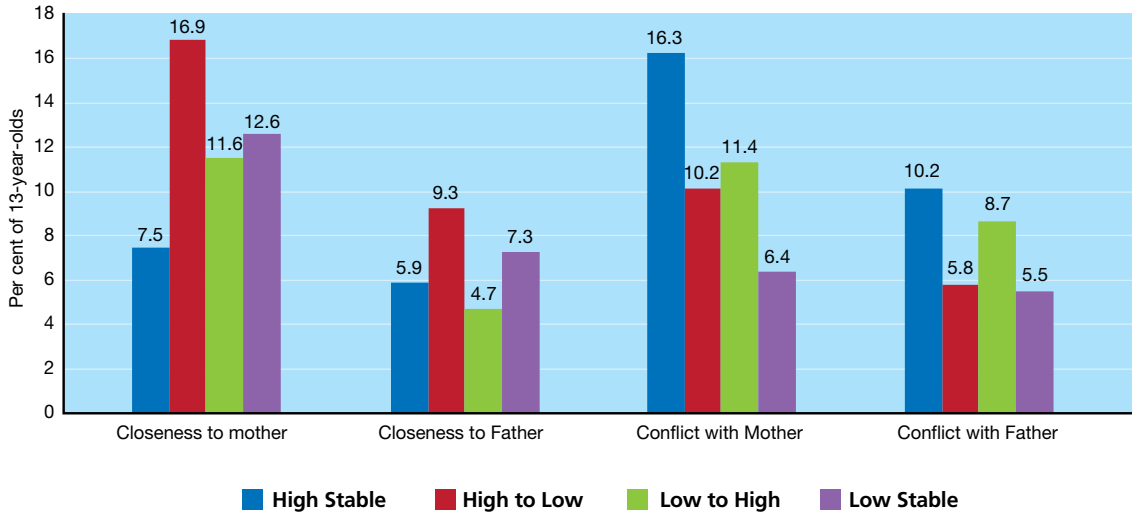


Figure 4.2 illustrates stability/change in closeness and conflict and having ever smoked a cigarette.

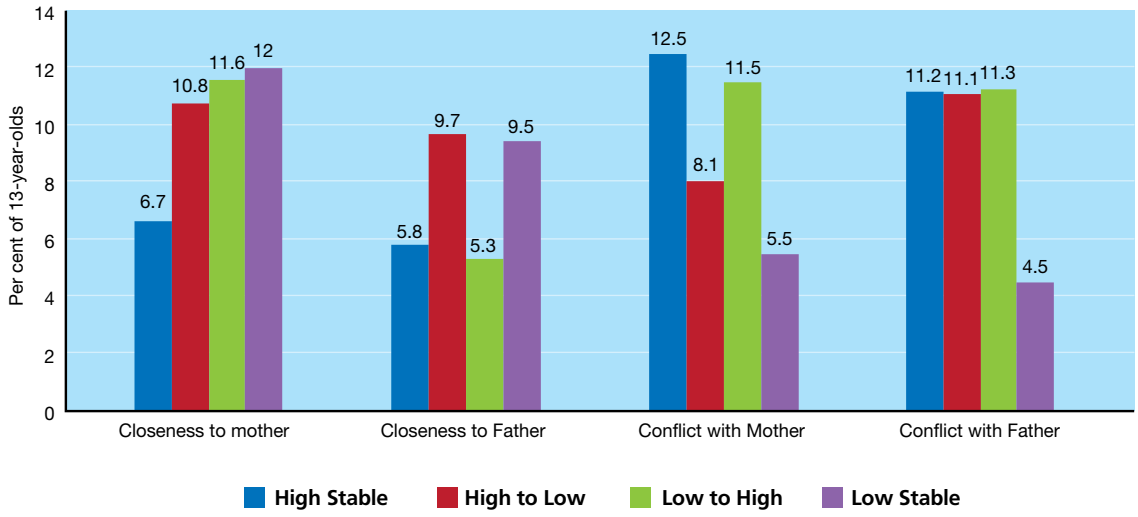
Figure 4.2: Percentage of 13-year-olds who had ever smoked a cigarette, according to change/stability in closeness and conflict with mothers and fathers (n = 7,055 for mothers' data; n = 4,588-4,591 for fathers' data)



Those who had low stable levels of conflict with mothers and with fathers were significantly less likely to have ever tried a cigarette, while those who had high stable or low-to-high levels of mother-child and father-child conflict were more likely to have ever smoked a cigarette. Those who had high stable levels of closeness with mothers were less likely to have ever smoked, while those who had high-to-low levels of closeness were more likely to have ever smoked. Those who had high-to-low levels of closeness with fathers were more likely to have ever smoked a cigarette.

Finally, Figure 4.3 pertains to having had a whole alcoholic drink in the past year. Those who had low stable levels of conflict with mothers were significantly less likely to have had a drink in the past year, while those who had high stable or low-to-high levels of mother-child conflict were more likely to have had a drink. In term of conflict with fathers, those with low stable levels of conflict were less likely to have had a drink, while those with low-to-high, high-to-low or high stable levels of conflict were more likely to have drunk alcohol. Those with high stable levels of closeness to mothers were less likely to have had an alcoholic drink, while those in the other three categories were more likely to have had an alcoholic drink. Those in the high-to-low category of closeness with fathers were more likely to have had a whole alcoholic drink in the past year.

Figure 4.3: Percentage of 13-year-olds who had had an alcoholic drink in the past year, according to change in closeness and conflict with mothers (n = 7,094) and fathers (n = 4,613-4,616)



In summary, the majority of mothers and fathers rate their relationships with their children as being low in conflict and high in closeness across both waves. Overall conflict increased and closeness decreased from Wave 1 to Wave 2, although the magnitude of this deterioration tended to be small. Approximately one-eighth of the sample had high levels of conflict with either parent at both waves, 2.5 per cent of the sample had low levels of closeness with mothers at both waves; 6 per cent of the sample had low levels of closeness with fathers at both waves. Those with high stable and increasing levels of conflict between waves had poorer outcomes than those with decreasing and low stable levels of conflict. These findings held for conflict with both mothers and fathers, although the relationship between mother-child conflict and outcomes was stronger than the relationship between father-child conflict and outcomes.

The low stable mother-child closeness group had poorer outcomes than the high stable, increasing and decreasing closeness groups in relation to SDQ outcomes. Youth with low levels of mother-child closeness at Wave 1 (regardless of Wave 2 closeness) had higher depressive scores, while those with low levels of mother-child closeness at Wave 2 (regardless of Wave 1 closeness) had higher antisocial behaviour. The

low stable father-child closeness group had higher externalising SDQ difficulties than the other groups, but only differed from the high stable group in terms of higher depressive scores. The low stable closeness group did not differ from the other groups on antisocial behaviour.

In terms of substance use, a clear relationship emerged between parent-child relationship quality and use of alcohol, drugs and cigarettes. Those whose closeness to parents decreased between waves or who had high or increased conflict between waves were more likely to have experimented with drugs. Those with decreasing closeness and high stable conflict were more likely to have smoked cigarettes. In relation to alcohol use, those with high stable closeness to mothers, those with high stable or increasing closeness to fathers were less likely to have had an alcoholic drink in the past year. Those with low stable conflict with parents were also less likely to have had an alcoholic drink.

Finally, while the reliability of the Pianta scales at Wave 2 was good, the reliability of the closeness (but not conflict) sub-scale was less than satisfactory (0.64-0.65) at Wave 1, and so findings relating to closeness at Wave 1 and across time should be interpreted cautiously.

4.1.3 MONITORING, DISCLOSURE AND CHILD'S PERCEPTION OF CONTROL

Scores on monitoring, disclosure and control sub-scales were descriptively analysed, as outlined in Table 4.12. Generally, mothers and fathers reported high levels of monitoring and disclosure, and scores on the monitoring measure for mothers were highly negatively skewed (i.e. most young people reported that their mothers engaged in high levels of monitoring), with monitoring scores for fathers moderately negatively skewed. Adolescents also reported relatively high levels of perceived control, and scores were moderately negatively skewed (meaning fewer low values; more high values on this scale).

Table 4.12: Descriptive statistics for the monitoring, disclosure and control sub-scales (n = 7,507-7,513 for mothers, n = 5,143-5,785 for fathers)

	Possible range	Achieved range	Mean (SD)	Skewness
Monitoring Mother	0-45	0-45	39.75 (4.60)	-1.70
Monitoring Father	0-45	0-45	38.48 (4.99)	-0.65
Disclosure Mother	0-25	0-25	19.48 (4.73)	-1.31
Disclosure Father	0-25	0-25	18.85 (4.48)	-0.55
Control Child	0-30	0-30	19.75 (7.35)	-0.84

In order to investigate relationships among monitoring, disclosure and control and the outcome measures, a series of correlation analyses were conducted, as illustrated in Table 4.13. All relationships were significant ($p < .01$), except the relationships between child report of parental control, and SDQ internalising, SMFQ and antisocial behaviour. All significant relationships were negative – as monitoring, disclosure and perceived control increased, levels of difficulty decreased. However, the strength of these relationships was very weak.

Table 4.13: Correlation coefficients[19] for monitoring, disclosure and control and the outcome variables (n = 7,100-7,505 for mother report on disclosure and monitoring, n = 4,888-5,136 for father report on disclosure and monitoring; n = 7,099-7,384 for child report on control)

	SDQ total	SDQ externalising	SDQ internalising	SMFQ	Antisocial behaviour
Monitoring Mother	-.19	-.20	-.12	-.06	-.04
Monitoring Father	-.14	-.13	-.10	-.09	-.06
Disclosure Mother	-.19	-.22	-.10	-.06	-.05
Disclosure Father	-.12	-.13	-.06	-.07	-.09
Control Child	-.05	-.10	-.00	-.02	-.03

Monitoring, disclosure and control were also investigated in relation to timing of pubertal status. In terms of boys' pubertal status, both mothers' and fathers' reports of monitoring and disclosure did not differ according to their son's pubertal status. However, boys' reports of parental control were significantly related to their pubertal status: on-time boys perceived higher levels of control than both the early maturers (ES = 0.12, negligible) and the late maturers (ES = 0.14, negligible). The early and late maturing boys did not differ from each other in terms of perceptions of control. With respect to the girls' pubertal status, mothers' report of monitoring, but not disclosure differed by timing of girls' puberty. As was the case for boys, fathers' monitoring or disclosure were not related to girls' pubertal status. Girls' reports of parental control did differ according to pubertal status. Mothers of the late-onset group reported higher levels of monitoring than the on-time group (but not the early group) (ES = 0.13, negligible). The findings suggest that parental monitoring and disclosure, and child control are not strongly associated with either social, emotional and behavioural outcomes, or with pubertal status.

Monitoring, disclosure and control were next investigated in relation to having ever tried any drugs, having had a whole alcoholic drink in the past year, and having had a cigarette. Mothers' reports of monitoring and disclosure were not associated with having tried any drug, while fathers' reports of monitoring and disclosure were: fathers reported lower levels when the child had previously tried any drugs (ES = 0.19, small for fathers' monitoring, 0.36, small for fathers' disclosure). In addition, children reported less control when they had previously tried drugs (ES = 0.14, negligible). In relation to previously having smoked a cigarette, all parental variables were significant, but the child's report of control was non-significant. Specifically, mothers' reports of monitoring and disclosure were lower when the child had previously smoked a cigarette (ES = 0.13, negligible and 0.16, small, respectively). Similarly, fathers reported lower levels of monitoring and disclosure when their child had previously smoked a cigarette (ES = 0.18 and 0.22, both small, respectively). Finally, with respect to having had a whole alcoholic drink in the past year, as was the case for having tried any drug, no maternal variable was significant, but fathers' monitoring and disclosure and child perceptions of control were: fathers reported lower levels of monitoring and lower levels of disclosure in cases where their child had previously had a drink (ES = 0.19 for both, small). In addition, children who reported lower levels of control had previously had an alcoholic drink (ES = 0.09, negligible).

In summary, the relationships between monitoring and disclosure and social, emotional and behavioural outcomes and engagement in risk behaviours were weak in magnitude. In interpreting these findings, the poor reliability of the monitoring and disclosure scales should be considered. The child's perceptions of parental control were also only negligibly related to child outcomes.

19 A correlation coefficient is a measure of the strength of a relationship between two variables – if there is a perfect relationship between two variables, the correlation coefficient will be 1, if two variables are not related the correlation coefficient will be 0. A negative correlation coefficient indicates that as one variable increases the other variable decreases; a positive correlation coefficient indicates that as one variable increases the other variable also increases.

4.1.4 PARENTAL RESPONSIVENESS, DEMANDINGNESS AND AUTONOMY-GRANTING

Finally, the children completed the Parenting Style Inventory at both waves, yielding responsiveness and demandingness scores, and an autonomy-granting score (Wave 2 only). Thus, while the Pianta conflict and closeness sub-scales yield insights into the parent-child relationship from the parents' perspectives, this tool considers parenting but from the child's point of view. Because the scale was adapted for use with the 9-year-olds and different response options were used at both waves, the sub-scale scores from Wave 2 were transformed[20] so that they could be directly compared to scores from Wave 1.

Table 4.14: Descriptive statistics for the Parenting Styles Inventory (n = 7,082-7,115 for mothers, n = 6,589-6,686 for fathers)

	Possible range	Achieved range	Mean (SD)	Skewness
Responsiveness W1 Mother	5-15	5-15	12.98 (1.49)	-0.738
Responsiveness W2 Mother	5-15	5-15	13.41 (1.94)	-1.342
Demandingness W1 Mother	5-15	5-15	11.93 (1.60)	-0.202
Demandingness W2 Mother	5-15	5-15	12.67 (1.94)	-0.677
Responsiveness W1 Father	5-15	5-15	12.59 (1.81)	-0.819
Responsiveness W2 Father	5-15	5-15	13.04 (2.29)	-1.315
Demandingness W1 Father	5-15	5-15	11.62 (1.73)	-0.296
Demandingness W2 Father	5-15	5-15	12.33 (2.25)	-0.191
Autonomy-granting W2 Mother	5-25	5-25	18.72 (2.97)	-0.442
Autonomy-granting W2 Father	5-25	5-25	18.32 (3.04)	-0.474

Generally, levels of responsiveness, demandingness and autonomy granting were high. Inspection of the skewness values indicate that scores on the responsiveness sub-scales for both mothers and fathers at Wave 2 were highly skewed, with the majority of 13-year-olds reporting very positively on parents' responsiveness. The distribution of scores for responsiveness for father and mother at Wave 1 were moderately skewed, as was demandingness for mother at Wave 2. The remaining variables had distributions that were approximately symmetrical – this means that most scores fell around the midpoint of the scale. Scores on responsiveness and demandingness were compared across waves using paired sample t-tests to ascertain whether children's perceptions of responsiveness and demandingness had changed over time. Differences between Wave 1 and Wave 2 scores were significant: both responsiveness and demandingness had increased from Waves 1 to 2. Mothers' responsiveness was higher at Wave 2 than Wave 1 (ES = 0.31, small); as was fathers' responsiveness (ES = 0.25 small). Mothers' demandingness was higher at Wave 2 than Wave 1 (ES = 0.43, medium effect), as was fathers' demandingness (ES = 0.38, small effect). As was the case for parent-child closeness and conflict, change scores in responsiveness and demandingness were computed by subtracting Wave 2 scores from Wave 1 scores: here a negative change score indicates that responsiveness/demandingness has increased over time (Wave 2 scores is greater than Wave 1 score). Conversely, a positive change score indicates a decrease in responsiveness/demandingness (Wave 1 score is greater than Wave 2 score). Table 4.15 illustrates the descriptive statistics for these change scores, and the proportion of the sample which had positive and negative change scores, and a no-change score.

20 Each sub-scale comprised five items, and at 9 years, there were three response options (coded 1, 2 and 3) for each sub-scale item; thus sub-scale scores could range from 5 to 15. At age 13 years, there were five response options (coded 1, 2, 3, 4 and 5); thus sub-scale scores could range from 5 to 25. In order to make the scales equivalent, sub-scale scores at 13 years were transformed by recoding responses 1 and 2 into 1, 3 into 2, and 4 and 5 into 3, thus yielding a possible range of 1 to 3 for each item and 5 to 15 for the scale (items were also reverse scored as required). The original and transformed scores were highly correlated (0.93 mother responsiveness, 0.93 father responsiveness, 0.92 mother demandingness, and 0.93 father demandingness).

Table 4.15: Descriptive statistics for change scores in the Parenting Styles Inventory (n = 6,755-6,781 for mothers, n = 6,176-6,182 for fathers)

	Mothers' Parenting Style		Fathers' Parenting Style	
	W1-W2 Responsiveness	W1-W2 Demandingness	W1-W2 Responsiveness	W1-W2 Demandingness
Range	-8 – +10	-9 – +7	-10 – +10	-9 – +9
Mean (SD)	-0.44 (2.23)	-0.77 (2.23)	-0.50 (2.56)	-0.76 (2.45)
Median	-1.00	-1.00	-1.00	-1.00
% positive change score	26.3	27.1	28.2	28.6
% negative change score	53.3	57.1	54.0	57.0
% change score of 0	20.4	15.8	17.8	14.4

Thus, for over half of the children, responsiveness from mothers (53%) and fathers (54%) was higher at Wave 2 than at Wave 1, and 57 per cent of the children reported higher demandingness at Wave 1 from both mothers and fathers. Approximately 15 per cent of children reported no change in demandingness from mothers and fathers between waves, while 20 per cent reported stability in mothers' responsiveness and 18 per cent reported stability in fathers' responsiveness. Finally, just over a quarter of young people reported lower levels of responsiveness and demandingness from mothers and fathers between waves. Thus, there was considerable variability in experiences of change in parenting style from Wave 1 to Wave 2, with the majority experiencing higher responsiveness and demandingness, but a substantial minority also experiencing lower responsiveness and demandingness.

As was the case with the Pianta data, knowing that something changes positively or negatively is of limited value without also knowing where the starting point is; thus in order to assess the meaning of increases and decreases and stability in responsiveness and demandingness, scores were categorised into high and low (relatively speaking within the sample). As was the case with the Pianta scale, the scale authors for the Parenting Style Inventory do not provide cut-offs to guide the characterisation of relationships. Frequencies, means and standard deviations were inspected to identify scores above/below which a proportion of sample scored. For this, the original Wave 2 data, using the 5-point Likert response scale were used, rather than the transformed scores (as Wave 1 and Wave 2 scores were not being directly compared). For the purpose of the classification of scores, a score below 12 was categorised as 'low' in responsiveness at Wave 1 and a score below 18 was 'low' at Wave 2. For demandingness, a score below 11 at Wave 1 and 16 at Wave 2 was categorised as 'low'.

Table 4.16: Percentage of sample with scores below selected cut-offs on the Parenting Styles Inventory to indicate low responsiveness and low demandingness (n = 7,082-7,115 for mothers, n = 6,580-6,693 for fathers)

	Wave 1		Wave 2	
	< 12 Responsiveness	< 11 Demandingness	< 18 Responsiveness	< 16 Demandingness
Mother	15.1	18.7	19.5	14.7
Father	24.5	24.9	26.4	21.1

Thus, across both waves, somewhere between 15 per cent and 26 per cent of the sample were classified as being 'low' in responsiveness and demandingness. Overall, across both dimensions and both waves, a higher proportion of fathers than mothers were classified as 'low'. Classifications of low and high responsiveness and demandingness were compared across waves to yield four groups: stable high and stable low groups, and those who transitioned from high to low and from low to high. The percentage of the mothers and fathers who were classified into these groups based on child report across both waves is outlined in Table 4.17.

Table 4.17: Percentage (Ns) of sample classified into stable or transitioning groups in terms of mothers' responsiveness (n = 6,755), mothers' demandingness (n = 6,781), fathers' responsiveness (n = 6,176) and fathers' demandingness (n = 6,182)

Group	Mothers' responsiveness	Mothers' demandingness	Fathers' responsiveness	Fathers' demandingness
High stable	70.5 (4,762)	71.3 (4,837)	59 (3,644)	62.9 (3,891)
Low stable	4.7 (320)	4.8 (324)	8.9 (548)	7.7 (475)
From High to Low (decreasing)	14.5 (980)	9.7 (658)	16.8(1035)	12.5 (771)
From Low to High (increasing)	10.3 (693)	14.2 (962)	15.4 (948)	16.9 (1,045)

Across the various dimensions of parenting style, the majority of parents displayed a stable pattern of high responsiveness and demandingness, while the smallest proportion (between 5% and 9%) displayed a stable pattern of low responsiveness and demandingness. Broadly similar proportions of the order of 10 per cent to 17 per cent transitioned from high to low and vice versa. Next, associations among changes in responsiveness and demandingness between waves and social-emotional outcomes were investigated, as illustrated in Tables 4.18-4.21.

Table 4.18: Mean (SD) scores for the outcome measures according to category of change or stability in mothers' responsiveness (n = 6,564-6,755)

Outcome measure (W2)	High stable	Low stable	Low to High (increasing)	High to Low (decreasing)
SDQ total	6.51 (5.08)	8.61 (5.55)	7.24 (5.18)	8.02 (5.78)
SDQ internalising	3.27 (2.92)	3.45 (3.28)	3.43 (2.94)	3.63 (3.02)
SDQ externalising	4.27 (3.25)	5.50 (3.56)	5.02 (3.61)	5.03 (3.51)
SMFQ (depressive mood)	3.24 (3.72)	6.32 (5.58)	3.62 (3.95)	5.70 (5.54)
Antisocial behaviour total	0.64 (1.44)	1.61 (2.57)	0.65 (1.22)	1.19 (2.12)

The first set of analyses considered maternal responsiveness and key indicators of social, emotional and behavioural outcomes. The general finding was that the high stable group had the lowest SDQ total and SDQ externalising scores, when compared with the other three groups (effect sizes were generally small). The low-to-high (increasing) group also did better in terms of the SDQ total difficulties than the low stable and high-to-low (decreasing) groups (small effect size). In terms of the SMFQ, the low stable group had higher scores than the low-to-high (increasing) and high stable groups (medium effect sizes), and the low-to-high (increasing) group had higher scores than the high-to-low (decreasing) group (also a medium effect size). For antisocial behaviour, the low stable group had higher scores than the other groups (effect sizes small to medium), and the decreasing group also had higher scores than the increasing group and the high stable group (small effect sizes).

In terms of fathers' responsiveness, the same pattern of findings emerged in terms of the SDQ total score, SDQ internalising scores, and antisocial behaviour scores: the low stable group had higher scores than the increasing group and the high stable group, and the decreasing group had higher scores than the increasing group and the high-stable group, all with small effect sizes. For the SDQ externalising scores, the high-stable group had lower scores than the other three groups (all small effect sizes). Finally, for the SMFQ, the low-stable group had higher scores than all the other groups (small to medium effect sizes), while the decreasing group had higher scores than the increasing group and the high-stable group (small to medium effect sizes).

Table 4.19: Mean (SD) scores for the outcome measures according to category of change or stability in fathers' responsiveness (n = 5,997-6,176)

Outcome measure (W2)	High stable	Low stable	Low to High (increasing)	High to Low (decreasing)
SDQ total	6.24 (5.09)	7.97 (5.58)	6.47 (4.84)	7.71 (5.70)
SDQ internalising	3.10 (2.84)	3.59 (3.07)	3.12 (2.86)	3.57 (2.99)
SDQ externalising	4.19 (3.24)	4.94 (3.40)	4.71 (3.45)	4.69 (3.39)
SMFQ (depressive mood)	3.10 (3.61)	6.05 (5.47)	3.42 (3.87)	4.87 (4.86)
Antisocial behaviour total	0.57 (1.22)	1.12 (2.10)	0.71 (1.44)	1.10 (2.04)

With respect to maternal and paternal demandingness, overall, few significant patterns emerged. For stability and change on maternal demandingness, none of the groups differed on any of the SDQ outcomes. On the SMFQ, the low stable and the decreasing group had higher scores than the increasing group and the high stable group (all effect sizes small). On the antisocial behaviour measure, the decreasing group had higher scores than the increasing group and the high stable group.

Table 4.20: Mean (SD) scores for the outcome measures according to category of change or stability in mothers' demandingness (n = 6,594-6,780)

Outcome measure (W2)	High stable	Low stable	Low to High (increasing)	High to Low (decreasing)
SDQ total	6.85 (5.10)	7.51 (5.76)	6.74 (5.22)	7.46 (6.04)
SDQ internalising	3.30 (2.88)	3.45 (2.91)	3.40 (3.09)	3.61 (3.27)
SDQ externalising	4.53 (3.52)	4.71 (3.60)	4.34 (3.33)	4.53 (3.52)
SMFQ (depressive mood)	3.69 (4.13)	4.41 (4.89)	3.49 (4.09)	4.59 (5.16)
Antisocial behaviour total	0.74 (1.53)	0.84 (1.61)	0.65 (1.41)	1.15 (2.46)

In terms of fathers' demandingness, more differences emerged, but all of the effect sizes were small to negligible in magnitude. The high stable group had lower levels of SDQ total difficulties than the other three groups, lower levels of internalising difficulties and antisocial behaviour than the decreasing group only and lower SMFQ scores than the low stable and increasing groups. The decreasing group had higher SMFQ and antisocial behaviour scores than the increasing group.

Table 4.21: Mean (SD) scores for the outcome measures according to category of change or stability in fathers' demandingness (n = 6,002-6,181)

Outcome measure (W2)	High stable	Low stable	Low to High (increasing)	High to Low (decreasing)
SDQ total	6.42 (4.94)	7.71 (5.86)	6.94 (5.12)	7.13 (5.19)
SDQ internalising	3.14 (2.83)	3.49 (3.17)	3.44 (3.10)	3.28 (2.84)
SDQ externalising	4.36 (3.29)	4.65 (3.61)	4.46 (3.24)	4.42 (3.38)
SMFQ (depressive mood)	3.51 (3.94)	4.37 (4.92)	3.64 (4.14)	4.30 (4.80)
Antisocial behaviour total	0.69 (1.44)	0.76 (1.43)	0.72 (1.51)	1.00 (2.10)

Change in parental responsiveness and demandingness were next investigated in relation to risky health behaviours, including those who had tried any type of drug (n = 263), those who had consumed a whole alcoholic drink during the previous year (n = 532), and those who had previously smoked a cigarette (n = 616).

Figure 4.4 illustrates associations between changes in responsiveness and demandingness and having tried any type of drug. Those in the low stable and high-to-low groups with respect to fathers' responsiveness and demandingness were more likely to have ever tried any drug. Those in the low stable group on maternal responsiveness were more likely to have ever tried any drug. Those in the low-to-high group on maternal demandingness were less likely to have tried any type of drug, while those in the high-to-low group on maternal demandingness were more likely to have tried any type of drug.

Figure 4.4: Percentage of 13-year-olds who had tried any drug, according to category of change or stability in mothers' and fathers' responsiveness and demandingness (n = 6,561-6,589 for mothers' data; n = 5,992-6,000 for fathers' data)

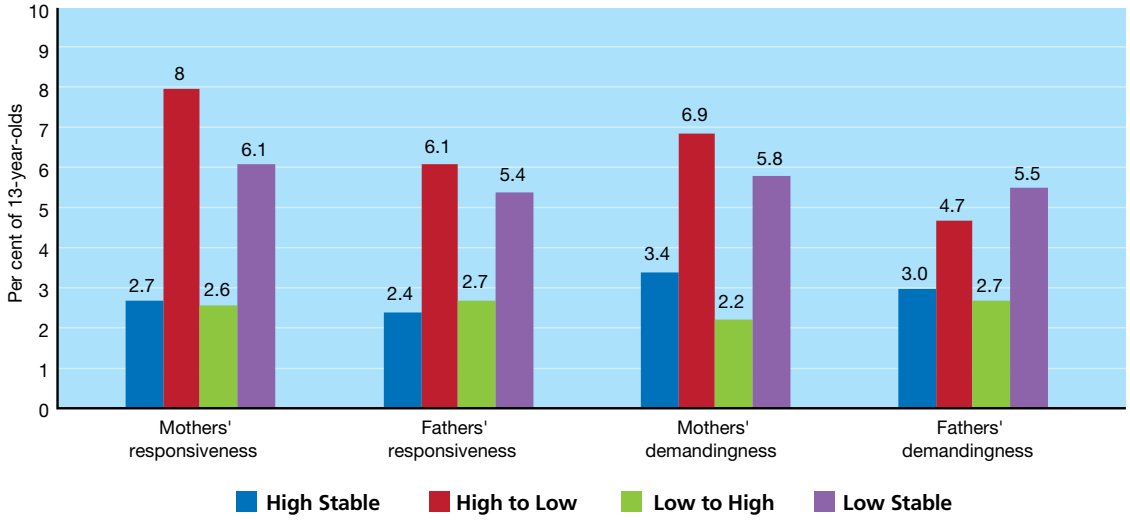
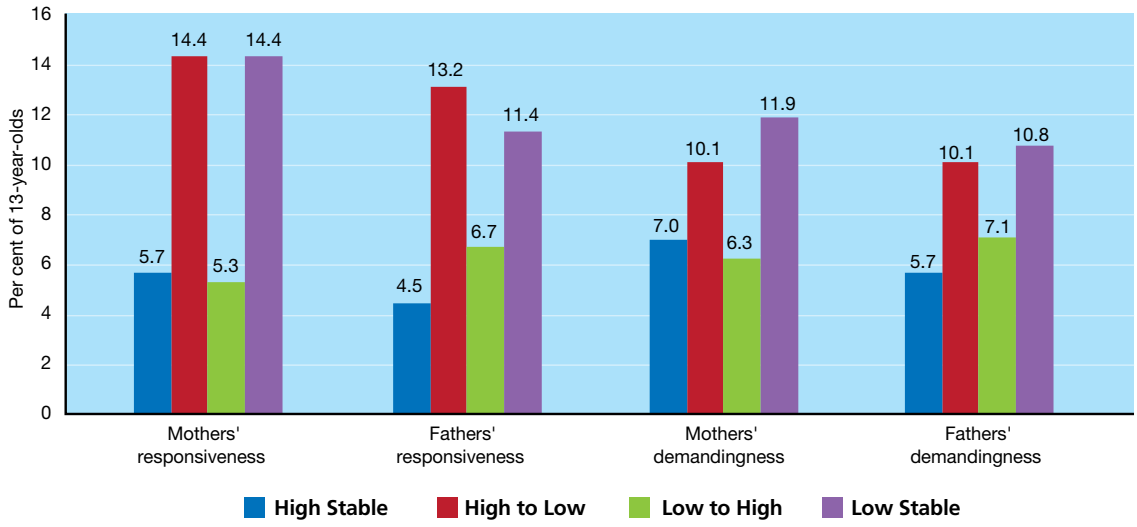


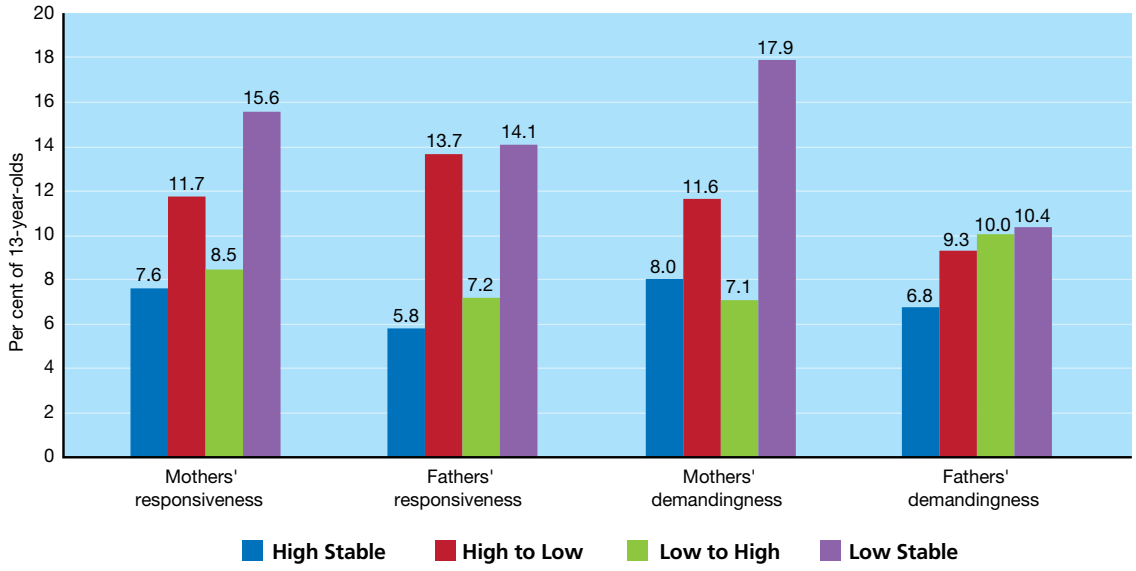
Figure 4.5 illustrates stability/change in responsiveness and demandingness and having had an alcoholic drink in the past year. Those in the high stable groups on mother and father responsiveness and father demandingness were less likely to have had an alcoholic drink in the past year. Those in the low stable and high-to-low groups on all four parenting dimensions were more likely to have had an alcoholic drink in the past year.

Figure 4.5: Percentage of 13-year-olds who had had an alcoholic drink in the past year, according to category of change or stability in mothers' and fathers' responsiveness and demandingness (n = 6,561-6,593 for mothers' data; n = 5,991-5,999 for fathers' data)



Finally, Figure 4.6 shows the association between having smoked a cigarette and change in parental responsiveness and demandingness. Those who were in the high stable group in terms of mothers' and fathers' responsiveness were less likely to have smoked, while those in the low stable and high-to-low groups were more likely to have smoked. Additionally, those in the low stable and high to low groups for mothers' demandingness were more likely to have smoked, while those in the high stable group for fathers' demandingness were less likely to have smoked. Somewhat anomalously, those in the low-to-high group on fathers' demandingness were more likely to have smoked.

Figure 4.6: Percentage of 13-tyear-olds who had ever smoked a cigarette, according to category of change or stability in mothers' and fathers' responsiveness and demandingness (n = 6,530-6,565 for mothers' data; n = 5,962-5,969 for fathers' data)



Finally, stability and change in responsiveness and demandingness were also investigated in relation to pubertal status: boys' pubertal status was not associated with patterns of change/stability in mothers' responsiveness or fathers' demandingness. Early maturing boys were more likely to be in the fathers' low-to-high responsiveness category. Early maturing boys were less likely to be in the mothers' low-to-high demandingness category. Girls' pubertal status was not related to mothers' or fathers' changes or stability in demandingness. Late maturing girls were less likely to be in the mothers' low stable responsiveness category and the fathers' high-to-low responsiveness category. Early maturing girls were less likely to be in the low-to-high responsiveness category.

As part of the measurement of parenting styles at Wave 2, the 13-year-olds completed five items on the extent to which they perceived that their parents granted them emotional autonomy which relates to the degree to which parents allow and encourage their children to develop their own ideas, beliefs and points of view. Boys and girls did not differ in their reports of mothers' or fathers' autonomy granting.

A series of correlation analyses were conducted to investigate associations between autonomy granting from mothers and fathers, and the key social, emotional and behavioural outcomes, as illustrated in Table 4.22. All relationships were significant ($p < .01$) and negative – as autonomy-granting increased, levels of difficulty decreased. However, the strength of these relationships was generally weak. As these data were all collected at the same point in time, it is possible that young people who behave more responsibly are granted more autonomy from their parents; on the other hand, when parents grant their children autonomy, they may behave more responsibly.

Table 4.22: Correlation coefficients for child report on autonomy granting and key outcome variables (n = 6,886 – 7,085 for mothers' autonomy; n = 6,489 – 6,683 for fathers' autonomy)

Outcome measure (W2)	Mothers' autonomy granting	Fathers' autonomy granting
SDQ total	-.15	-.17
SDQ internalising	-.08	-.10
SDQ externalising	-.17	-.18
SMFQ (depressive mood)	-.27	-.21
Antisocial behaviour total	-.13	-.12

Autonomy-granting was investigated in relation to having had a whole alcoholic drink in the past year, having ever tried any drugs and having smoked cigarettes previously. Those who had ever tried drugs reported lower autonomy from mothers and fathers (ES = 0.48, 0.42, medium, respectively). Those who had had a drink over the past year also reported lower autonomy from mothers and fathers (ES = 0.32 and 0.27, small, respectively). Similarly, those who had previously smoked reported lower autonomy from mothers and fathers (ES = 0.22 and 0.26, small, respectively).

Reports of autonomy granting were also related to pubertal status, for both boys and girls. For boys, early maturers perceived higher autonomy granting from mothers than late maturers (ES = 0.13, negligible), but there was no difference from the on-time boys. Early maturers also perceived higher autonomy granting from fathers than on-time boys (ES = 0.14, negligible) and late maturers (ES = 0.26, small). On-time boys also perceived higher autonomy granting from fathers than late boys (ES = 0.13, negligible). For girls, contrasting patterns emerged: late maturing girls perceived higher autonomy granting from mothers than early maturing girls (ES = 0.14, negligible), but did not differ from on-time girls. Late maturing and on-time girls also perceived higher levels of autonomy granting from fathers than early maturing girls (ES = 0.18 and 0.15, respectively, small).

In interpreting all of the findings relating to parenting styles the relatively poor reliability of the PSI-II sub-scales needs to be considered. In summary, children's perceptions of parental responsiveness and demandingness were high and increased between waves. Across both waves, between 15 per cent

and 26 per cent of the children rated their mothers or fathers as being low in responsiveness, similar proportions rated parents as being low in demandingness, and generally a higher proportion of fathers than mothers were rated as 'low'. Most parents displayed stable patterns of high responsiveness between waves, with 5 per cent and 9 per cent displaying stable patterns of low responsiveness and demandingness, respectively, between waves.

Children with high stable responsiveness mothers had the lowest SDQ externalising scores when compared with those who had low stable responsive mothers or mothers whose responsiveness increased or decreased between waves. Children whose mother had low responsiveness across waves had higher depressive scores and higher antisocial behaviour. Broadly similar findings emerged for fathers – the low stable responsiveness group had higher SDQ internalising, depressive symptoms and antisocial behaviour scores; the high stable responsiveness group had lower scores on SDQ externalising than the other groups. With respect to stability and change in parental demandingness, few significant relationships with outcomes emerged and where differences were significant, they tended to be negligible in magnitude.

In relation to risk-taking behaviours, the broad pattern that emerged was that children whose parents were either low in responsiveness or demandingness at both waves or just at Wave 2 were more likely to have tried any drug, to have had an alcoholic drink and to have smoked a cigarette. One exception was in relation to fathers' demandingness and smoking, where no clear relationship with smoking cigarettes emerged.

Finally, the relationship between children's report of autonomy-granting by parents (collected at Wave 2 only) revealed generally weak relationship with SDQ outcomes, antisocial behaviour and depressive symptoms. Children who reported having tried any drug, smoked or had an alcoholic drink reported lower autonomy granting by parents (small to medium effect sizes).

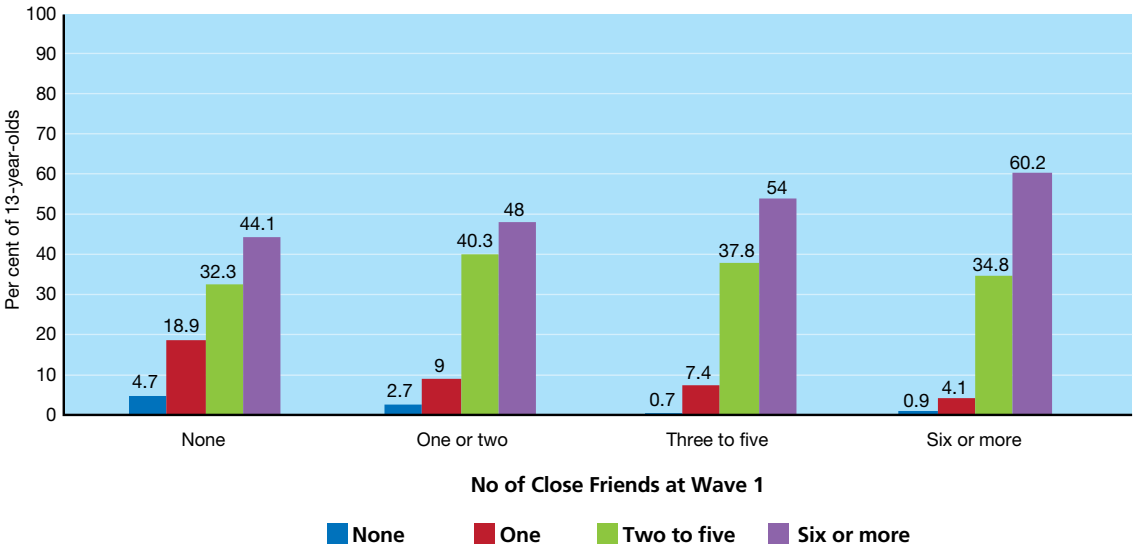
4.1.5 FRIENDSHIP AND PEER RELATIONSHIPS

At Wave 1, based on mother report, 2 per cent of children were reported to have no friend, and 6.5 per cent to have one friend only. The majority of children had two or three friends (41.3%), and half of the children had four or more close friends. Six per cent of children were reported to 'never' do something with friends, while a further 16.2 per cent did something with friends on 'one day a week' only. One-quarter of children were reported to do something with friends on '6-7 days' per week. At Wave 2, based on the child's report, 1 per cent reported that they normally hung around with no friends, and a further 7 per cent normally hung around with one or two friends. The remaining young people reported that they normally hung around with three or more friends. Among those who reported that they had friends to hang around with, they were asked how many of their friends they would describe as close: 5 per cent had one close friend, 16 per cent had two close friends, 19 per cent had three close friends, while the remaining 59 per cent had four or more close friends.

Analyses of correspondence between responses to these questions across both waves reveal the stability and change in these patterns over time. Those who had none or only 'one or two' friends at Wave 1 were significantly more likely to have none or 'one or two' friends at Wave 2, while those who had more than six friends at Wave 1 were significantly more likely to have six or more friends at Wave 2 and less likely to have 'one or two' or 'three to five' friends at Wave 2. The patterns illustrated in Figure 4.7 show that among the young people who were reported to have no friends at 9 years (2% of entire sample), 4.7 per cent reported that they had no friends at 13 years, 18.9 per cent had one friend, 32.3 per cent had two to five friends, and 44.1 per cent had six more friends. The majority of young people at Wave 2 reported that they had six or more close friends (54.5%) in total, but this was differentially distributed according to number of friends at Wave 1, ranging from 44.1 per cent for those with no friends at Wave 1 to 60.2 per cent for those who also had six or more friends at Wave 1. However, there does appear to be substantial change in the pattern of having close friends across waves and only a small minority of children – less than

5 per cent – were reported to have no friends at either wave. It must also be considered that mothers were the source of information at Wave 1, while the young people reported their number of friends at Wave 2.

Figure 4.7: Percentage of 13-year-olds with 'none', 'one or two' 'three to five' and 'six or more' friends at Wave 2, according to number of close friends at Wave 1 (n = 7,397)



For the purpose of considering associations with social, emotional and behavioural outcomes, data from Wave 2 were used, as this is based on the young person's own report. Comparison of children according to number of friends at Wave 2 (none, one, two to five, six or more) on the key outcome variables revealed that those who had no friends had significantly higher levels of difficulty across all outcomes in comparison with children with one, two to five and six or more friends.

Table 4.23: Mean (SD) for children on key outcome variables, according to number of friends (Wave 2) (n = 7,117-7,406)

Outcome measure (W2)	Number of friends			
	None n = 66-68	One or two n = 501-530	Three to Five n = 2,662-2,769	Six or more n = 3,839-4,093
SDQ total	13.97 (8.67)	8.63 (6.39)	6.85 (5.03)	6.85 (5.24)
SDQ internalising	7.85 (4.84)	4.33 (93.50)	3.05 (2.87)	2.76 (2.76)
SDQ externalising	6.12 (5.10)	4.29 (4.01)	3.80 (3.22)	4.09 (3.43)
SMFQ (depressive mood)	10.13 (8.78)	5.98 (4.72)	3.90 (4.32)	3.57 (4.16)
Antisocial behaviour total	1.23 (3.43)	0.46 (1.04)	0.58 (1.28)	0.93 (1.84)

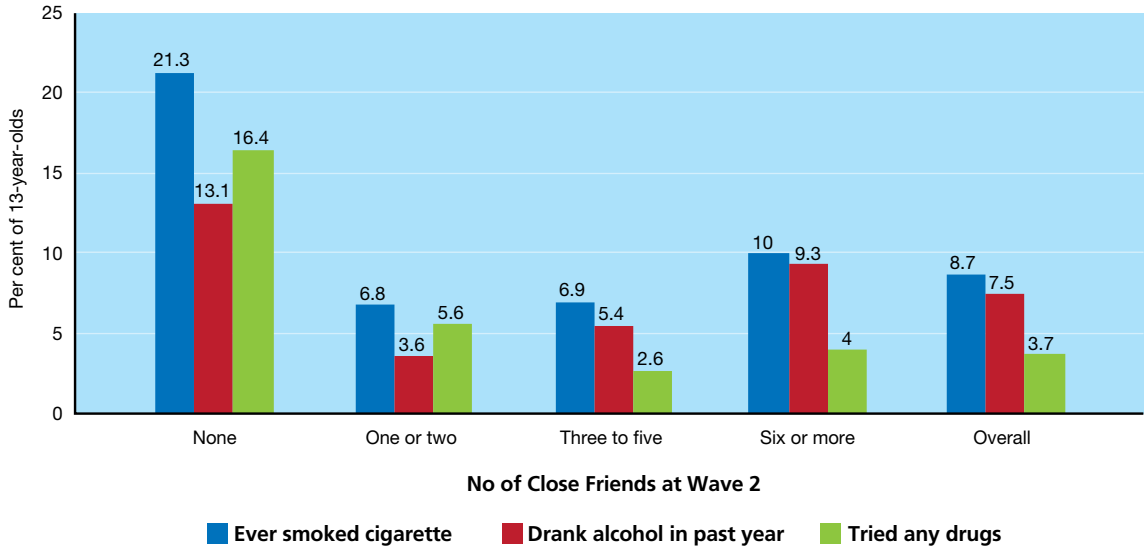
Young people who reported having no friends had higher levels of total SDQ difficulties than those with one or two friends (ES = 1.01, large), three to five friends, and six or more friends (ES = 1.34 and 1.35, very large, respectively). Those with one or two friends also had higher levels of total difficulties than those with three to five, and six or more friends, although the effect sizes were smaller in magnitude (ES = 0.34 and 0.34 respectively). In terms of externalising difficulties, those with no friends had higher levels of difficulty than the other three groups (all medium effect sizes) but the other groups did not differ from each other. The largest effect sizes were evident in terms of internalising difficulties: those with no friends had higher levels of internalising difficulties than those with one or two friends (ES = 1.22, very large),

three to five friends (ES = 1.67, huge effect) and six or more friends (ES = 1.77 huge effect). Those with one or two friends also had higher levels of difficulty than those with three to five friends (ES = 0.44, medium) and six or more friends (ES = 0.54, medium).

Reflecting these SDQ trends, similar findings emerged with respect to the depressed mood sub-scale (SMFQ): those with no friends had higher scores than those with one to two (ES = 1.17, very large), three to five (ES = 1.44, very large) and six or more friends (ES = 1.5, huge). Those with one or two friends also had higher scores than those with three to five and six or more friends (ES = 0.27 and 0.35 respectively, both small). Generally, those with three to five friends did not differ from those with six or more friends, and where differences did emerge, the effect sizes were negligible. Finally, with respect to antisocial behaviour, those with no friends had higher levels of ASB than those with one or two, and three to five friends (ES = 0.47 and 0.40; both medium), but did not differ from those with six or more friends. Those with six or more friends also had higher levels of difficulty than those with one or two and three to five friends (ES 0.29 and 0.22, both small).

Number of friends was also associated with ever having tried drugs, cigarettes or consumed alcohol in the past year. As illustrated in Figure 4.8, those with no friends were significantly more likely to have tried any drugs and to have smoked a cigarette. Those with one or two friends were also more likely to have tried any drugs, while those with three to five friends were less likely to have tried any drugs. Those with six or more friends were more likely than the other groups to have had an alcoholic drink, while those with one or two friends, and three to five friends had a lower likelihood of having had an alcoholic drink. Finally, in terms of having smoked cigarettes, those with no friends or six or more friends were more likely to have smoked; those with one or two, and three to five friends were less likely to have smoked.

Figure 4.8: Percentage of 13-year-olds with 'none', 'one or two' 'three to five' and 'six or more' friends at Wave 2, and engagement in risky behaviour (n = 7,075-7,114)



In relation to pubertal status, late maturing boys were less likely to have six or more friends, and more likely to have no friends than on-time or early maturing boys. For girls, early maturers were more likely to have six or more friends and less likely to have three to five friends than the other groups, but no other differences emerged.

The majority of young people (98%) reported that their parents had met at least some of their friends. Young people also reported upon the age of the majority of their friends – whether their friends were

mostly younger, the same age; one or two years older; or two or more years older than them. Just over 9 per cent of the 13-year-olds stated that most or all of their friends were at least a year older than them. This group of 13-year-olds with older friends were compared with the remaining 13-year-olds who stated that most or all of their friends were either the same age or younger than them. Boys and girls were equally as likely to have older friends, but pubertal status did matter: early maturing girls and boys were significantly more likely to have older friends, late maturing girls and boys were significantly less likely to have older friends. Those with older friends were also significantly more likely to have smoked, had an alcoholic drink in the past year, and to have tried any drugs. In addition, those with older friends had higher SDQ total scores (ES = 0.21, small), higher internalising scores (ES = 0.09, negligible), higher externalising scores (ES = 0.25, small), higher depressed mood scores (ES = 0.26, small), and more antisocial behaviour (ES = 0.34, small).

In addition to the number of friends, and the age profile of friends, data were gathered on quality of these peer relationships, using the trust and alienation sub-scales of the Inventory of Parent and Peer Attachment. Summary statistics on the scores on the trust and alienation sub-scales are presented in Table 4.24.

Table 4.24: Descriptive statistics for the trust and alienation sub-scales (n = 7,332)

	Possible range	Achieved range	Mean (SD)	Skewness
Trust	10-50	10-50	39.57 (6.78)	-1.59
Alienation	7-35	5-32	13.92 (4.34)	0.68

The data indicate that the trust scores were highly negatively skewed, indicating that most participants perceived high levels of trust in their relationships with their peers. Alienation scores were slightly positively skewed, indicating that most participants perceived low levels of alienation in their relationships with their peers. There were no differences in alienation scores between boys and girls, but boys had significantly lower trust scores than girls (ES = 0.42, medium effect).

Correlation analyses revealed the relationships between alienation, trust and the key outcome measures. As indicated in Table 4.25, alienation was positively related to difficulties, while trust was negatively related to difficulties – higher alienation and lower trust was related to higher SDQ scores, depressed mood scores and antisocial behaviour. However, the magnitude of these associations was generally weak, with the exception of the relationship between alienation and depressed mood, which was moderate (0.46).

Table 4.25: Correlation coefficients for alienation, trust and outcome measures (n = 7,058-7,060)

	Alienation	Trust
SDQ total	.18	-.18
SDQ externalising	.14	-.16
SDQ internalising	.18	-.14
SMFQ	.46	-.26
Antisocial behaviour	.14	-.16

In addition, those who had ever smoked, drank alcohol in the past year, and tried any drugs had significantly higher alienation (ES = 0.3 small, 0.35 small, and 0.5 medium respectively) and lower trust (ES = 0.28, small, 0.31 small and 0.39, medium, respectively) scores. Alienation and trust were also related to pubertal status. For girls, trust did not differ among early, on-time and late maturers; for boys, alienation did not differ among early, on-time and late maturers. However, early maturing girls had higher alienation than on-time girls (ES = 0.19, small) and late maturing girls (ES = 0.29, small). Late maturing boys had lower levels of trust than on-time and early maturing boys (ES = 0.21, small for both comparisons).

Finally, in relation to experiences of bullying, 10 per cent reported that they had been bullied in the past three months, and 2 per cent reported that they had bullied another. Of those who reported being bullied in the past three months at Wave 2, 60 per cent also reported being bullied at Wave 1 and of those who reported bullying another at Wave 2, 30 per cent reported perpetrating bullying against another at Wave 1. These figures suggest considerable instability in involvement in bullying between both waves of the study.

Boys and girls were equally as likely to have been bullied and to have perpetrated bullying against another. Early maturing girls were more likely to have been bullied and to have perpetrated bullying against another in the past three months; in contrast late maturing boys were more likely to have been bullied in the past three months. On-time boys were less likely to have been bullied, and on-time girls were less likely to have bullied another.

In relation to social, emotional and behavioural outcomes, those who had been bullied had higher SDQ total scores (ES = 0.69, medium), higher internalising scores (ES = 0.44, medium), higher externalising scores (ES = 0.73, medium), higher depressed mood scores (ES = 0.83, large) and higher levels of antisocial behaviour (ES = 0.2, small). Similar findings emerged in relation to those who had perpetrated bullying against others (ES ranging from to 0.65 to 1.35 very large effect). Those who had been bullied in the past three months were more likely to have smoked, to have had alcohol in the past year, and to have tried any drug, than those who had not been bullied in the past three months, and similar findings emerged in relation to those who had perpetrated bullying against another in the past three months.

In summary, the majority of young people at ages 9 and 13 had friends and regularly socialised with them: based on mother report at Wave 1, 8.5 per cent of children had no friend or one friend; 6 per cent were reported to never socialise with friends at age 9. At Wave 2, based on the young person's report, 8 per cent reported that they normally hung around with either no friend or one or two friends. There is substantial change in the pattern of having no friends across waves at an individual level and less than 5 per cent of children were reported to have no friends at both waves.

Young people who reported having no friends had higher levels of difficulties, including externalising and internalising problems, depressed mood and antisocial behaviour, than those with one or two friends, or larger groups of friends, with the largest effect sizes for internalising difficulties and depressed mood. There were few differences in outcomes between those with greater and fewer numbers of friends, suggesting that even having a small number of friends is an important protective factor. Those with no friends were more likely to have ever tried any drugs and to have smoked a cigarette. Those with six or more friends were also more likely to have smoked a cigarette and have had an alcoholic drink. Early maturing boys and girls were more likely to have older friends and those with older friends were more likely to have engaged in risk-taking behaviour (smoking, drinking alcohol and drug experimentation), and have poorer outcomes across all domains. In terms of quality of peer relationships, participants generally reported high levels of trust in their relationships with their peers and lower trust and higher alienation with peers were associated with poorer outcomes, although these associations tended to be weak. One exception to this was the positive relationship between peer alienation and depressed mood which was moderate. Finally, 10 per cent of participants reported having been bullied in the past three months; 2 per cent had perpetrated bullying against another. Those who had been victims and perpetrators of bullying had poorer outcomes across all domains.

4.2 WHICH FACTORS ARE MOST IMPORTANT?

In considering what factors predict well-being at 13 years, the analyses thus far have focused upon one variable at a time and on associations between each predictor variable individually and key outcome variables. In the next stage of the analyses multiple predictor variables are considered simultaneously in order to ascertain: (1) whether some variables are no longer associated with key outcome once other variables are considered at the same time, and (2) whether some variables are better than others at predicting key social, emotional and behavioural outcomes.

In order to do this analysis a series of regression models were run. Altogether, in line with the preceding sections of the chapter, eight outcome variables were considered, all measured at Wave 2. Five of the outcome variables were on continuous scales: 1) SDQ internalising score, 2) SDQ externalising score and 3) SDQ total score (composite of internalising and externalising scores) (all based on mother report), 4) SMFQ depressed mood score, and 5) antisocial behaviour score (both based upon young person report). Three of the outcome variables were categorical in nature, meaning that participants were categorised as either 'yes' or 'no'. These outcomes pertained to engagement in health-compromising behaviours: 6) ever smoked a cigarette; 7) had a whole alcoholic drink in the past year and 8) ever tried any drugs. The predictor variables, and their nature (categorical, continuous) and source (respondent young person, mother or father) are summarised in Table 4.26. Where categorical variables have been dummy-coded,[21] the reference category is indicated.

21 Dummy coding refers to a process where data are coded to indicate group membership in any mutually exclusive and exhaustive category. Thus, the researcher codes a person into either 1 to indicate that a person is a member of a category, or 0 to indicate that a person is a not a member of a category. For example, in relation to income quintile, five dummy codes are set up, one for each income quintile. For the lowest income quintile (quintile 1), those belonging to this category are coded as 1, all others are coded as 0. For quintile 2, those belonging to this category are coded as 1, all others are coded as 0; and so on.

Table 4.26: Predictor variables used in regression models

Pubertal status – categorical variables	Respondent
Early/Late maturers (ref group on-time)	YP
Parent-Child Relationships & Parenting – continuous variables	
Mother and Father* Disclosure and Monitoring (W2)	M, F
Child Perception of Control and Mother and Father autonomy-granting (W2)	YP
Parent-Child Relationships & Parenting – categorical variables	
Mother-Child and Father-Child* change in conflict – low-to-high, high-to-low, high stable (ref group, low stable)	M, F
Mother-Child and Father-Child* change in closeness – low-to-high, high-to-low, low stable (ref group, high stable)	M, F
Mother and Father change in responsiveness and demandingness – low-to-high, high-to-low, low stable (ref group high stable)	YP
Friendships & Peer Relationships – continuous variables	
Alienation and Trust	YP
Friendships & Peer Relationships – categorical variables	
W1 number of friends: one friend, two to five friends, more than five friends (ref group: no friends)	YP
W2 number of friends: one or two friends, three to five friends, more than five friends (ref group: no friends)	YP
Older friends (ref group: most friends are not older)	YP
Being a victim or a perpetrator of bullying (W1 and W2) (ref group: no)	YP
Household Variables – categorical variables	
Income quintile: lowest 1st, 2nd, 3rd, 4th (ref group: highest 5th)	M
Highest maternal education level: up to lower secondary level, Leaving Certificate or non-degree third-level (ref group: degree or postgraduate degree)	M
Change in household type across waves: stable single-parent, from single-parent to two-parent, from two-parent to single-parent (ref group: stable two-parent) **	M
Outcome variable at Wave 1	
SDQ total, SDQ internalising, and SDQ externalising.	M

* two-parent household models only; ** all household models presented in Appendix.

In running the regression models, separate models were run for boys and girls, because the bivariate analyses suggested that the relationship between pubertal status and the outcome variables differed somewhat for boys and girls. Separate models were also run for two-parent households and all households (including single-parent households); models that incorporated variables which relied upon father report by default excluded single-parent households because these data were not available. In addition, the variable on change in household type could only be included in models which included all households. Given these decisions, a total of 32 models were run (8 outcome variables x 2 (separate models for boys and girls) x 2 (separate models for two-parent and all households)). Given the number of predictor variables, backward regression models were conducted. This technique begins with a full model with all predictor variables included. Following the estimation of parameters, any variables that fall below the specified level of significance (in this case below 0.05) are removed and the model is re-estimated, and this process

continues until no further predictor variables are significant (Miles & Shevlin, 2001). Such an approach yields a parsimonious model – i.e. one that explains the maximum amount of variance in the outcome variable with the fewest number of predictor variables.

The first three models consider the predictors of SDQ outcomes among girls from two-parent households (i.e. father-reported variables are included).

Table 4.27: Standardised regression coefficients and significance levels from regression models predicting SDQ scores among girls from two-parent households (n = 2,264)

SDQ total	Standardised beta	Internalising	Standardised beta	Externalising	Standardised beta
Low to High M-C conflict	0.170***	Early Puberty	0.049**	Low-to-high M-C conflict	0.175***
High stable M-C conflict	0.163***	Low-to-high M-C conflict	0.104***	High stable M-C conflict	0.143***
Low to High F-C conflict	0.064***	High stable M-C conflict	0.136***	Low-to-high F-C conflict	0.094***
High stable F-C conflict	0.035*	High-to-low M-C closeness	0.060**	High stable F-C conflict	0.042**
Low-to-high M-C closeness	-0.042**	Low stable M-C closeness	0.052**	Low-to-high M-C closeness	-0.040*
High-to-low M-C closeness	0.084***	Perceived parental control	-0.056**	High-to-low M-C closeness	0.082***
Low stable M-C closeness	0.052**	High-to-low M responsive	-0.043*	Low stable M-C closeness	0.037*
Low-to-high M response	-0.036*	Low stable M demand	-0.055**	Low-to-high F-C closeness	-0.039*
Low stable M response	0.036*	Victim of bullying W2	0.164***	M disclosure	-0.045**
Low-to-high M demand	-0.042*	Perpetrator of bullying W2	0.050**	Low-to-high M response	-0.051**
Low stable M demand	-0.062***	Having 3-5 friends W2	-0.121**	Low stable M response	0.038*
Low-to-high F demand	0.041*	Having > 5 friends W2	-0.208***	Low stable F demand	0.042**
Low stable F demand	0.049**	Having older friends	-0.051**	Autonomy granting M	-0.072***
Autonomy granting M	-0.053*	IPPA trust sub-scale	-0.043*	Victim of bullying W2	0.045**
Victim of bullying W2	0.119***	IPPA alienation sub-scale	0.050*	Having 2-5 friends W1	-0.039*
Perpetrator of bullying W2	0.045**	Lowest income quintile W2	0.048**	Having > 5 friends W2	0.032*
Having > 5 friends W2	-0.034*	M lower secondary ed	0.068***	IPPA trust sub-scale	-0.036*
IPPA trust sub-scale	-0.052**	Internalising W1	0.374***	Lowest income quintile W2	0.067***
Lowest income quintile W2	0.062***			Externalising W1	0.493***
M lower secondary ed	0.048**				
SDQ Total Score W1	0.469***				

* p < .05; ** p < .01; *** p < .001.

In relation to SDQ total scores, the strongest predictor was the SDQ total score at Wave 1, followed by low-to-high (increasing) mother-child conflict and high-stable mother-child conflict (in comparison with low stable mother-child conflict). Being a victim of bullying at Wave 2 was associated with higher levels of SDQ difficulties. Low stable mother-child closeness and high-to low (decreasing) mother-child closeness were associated with higher SDQ difficulties, while low-to-high mother-child closeness was associated with lower SDQ difficulties. As was the case for mother-child conflict, low-to-high and high stable father-child conflict was associated with greater SDQ difficulties. In comparison with those in the high stable mother responsiveness group, those in the low-to-high mother responsiveness group had lower levels of difficulty and those in the low stable mother responsiveness group had higher levels of difficulty. In comparison with those in the high stable demandingness category, children of mothers in the low-to-high mother demandingness and low stable mother demandingness groups had lower levels of difficulty, and children in the low-to-high father demandingness and low stable father demandingness had higher levels of difficulty. This finding relating to low maternal demandingness and lower levels of difficulty runs counter to what might be expected and may relate to the low reliability of the scale. The child's perception of higher autonomy-granting by mothers was associated with lower levels of difficulty. Being a perpetrator of bullying at Wave 2 was associated with higher SDQ difficulties. Having more than five friends at Wave 2 and higher levels of trust with friends were both associated with lower SDQ difficulties. Finally, coming from the lowest income quintile only (in comparison with the highest) was associated with higher levels of difficulty and having a mother with a lower secondary level education (in comparison with a degree or postgraduate degree) was associated with higher levels of difficulty. Altogether the model accounted for 46.4 per cent of variance in SDQ total outcomes.

The strongest predictor of SDQ internalising scores at Wave 2 was scores at Wave 1. Low-to-high mother-child conflict, high-stable mother conflict, high-to-low mother-child closeness and low stable mother-child closeness were all associated with higher internalising scores. High-to-low mother responsiveness and low stable mother demandingness were associated with lower internalising scores, as was the child's perception of higher parental control. Both being a victim and a perpetrator of bullying at Wave 2 were associated with higher internalising difficulties, while having 3-5 friends, more than five friends and older friends at Wave 2 were all associated with lower internalising difficulties. Higher trust in friends was associated with fewer difficulties while higher alienation from friends was associated with more difficulties. Being an early maturer was associated with higher levels of difficulty. Finally, coming from a family in the lowest income quintile and where the mother had a lower secondary education level were associated with higher internalising difficulties. The final model accounted for 32.8 per cent of total variance in SDQ internalising scores.

The strongest predictor of SDQ externalising scores at Wave 2 was scores at Wave 1. Following this, low-to-high and high stable mother-child and father-child conflict were associated with higher levels of externalising difficulties. Low-to-high mother-child and father-child closeness were associated with lower externalising scores, while high-to-low and low stable mother-child closeness were associated with higher levels of externalising difficulties. Mothers' higher reports of their child's disclosure to them, the child's perception of mother's higher autonomy granting, and low-to-high mother-child and father-child closeness were associated with lower levels of difficulty. Low stable maternal responsiveness and low stable paternal demandingness were associated with higher levels of difficulty. Being a victim of bullying at Wave 2 and having more than 5 friends were associated with higher levels of difficulty, while having 2-5 friends at Wave 1 and higher levels of trust in peers were associated with lower levels of difficulty. Finally, coming from a family in the lowest income quintile was associated with higher levels of difficulty. In total, 46.4 per cent of variance in SDQ externalising difficulties were accounted for.

The next set of models considers the same three outcomes for boys from two-parent households.

Table 4.28: Standardised regression coefficients and significance levels from regression models predicting SDQ scores among boys from two-parent households (n = 2,501)

SDQ Total	Standardised beta	Internalising	Standardised beta	Externalising	Standardised beta
Low-to-high M-C conflict	0.211***	Low-to-high M-C conflict	0.134***	Low-to-high M-C conflict	0.204***
High-to-low M-C conflict	-0.052**	High stable M-C conflict	0.130***	High-to-low M-C conflict	-0.053***
High stable M-C conflict	0.174***	Low-to-high F-C closeness	-0.036*	High stable M-C conflict	0.145***
Low-to-high F-C conflict	0.057***	High-to-low F-C closeness	0.052**	Low-to-high F-C conflict	0.058***
High stable F-C conflict	0.038*	Low stable F-C closeness	0.075***	High stable F-C conflict	0.030*
High-to-low F-C closeness	0.047**	M Monitoring	-0.058***	High-to-low M-C closeness	0.038*
Low stable F-C closeness	0.029*	Perceived parental control	-0.060***	High-to-low F-C closeness	0.032*
M Monitoring	-0.046**	Low-to-high F response	-0.038*	M Monitoring	-0.033*
M Disclosure	-0.061***	High-to-low F demand	0.087***	M Disclosure	-0.053**
High-to-low F demand	0.063***	Victim of bullying W2	0.063***	Perceived parental control	0.029*
Autonomy granting F	-0.067***	Having 1 friend W1	-0.058*	Low stable F response	-0.037*
Victim of bullying W2	0.045**	Having 2-5 friends W1	-0.245***	Autonomy granting F	-0.085***
Having 2-5 friends W1	-0.075**	Having > 5 friends W1	-0.230***	Perpetrator of bullying W2	0.030*
Having > 5 friends W1	-0.067**	Having 1-2 friends W2	0.052**	Having 1-2 friends W2	-0.031*
IPPA alienation sub-scale	0.071***	Having 3-5 friends W2	0.064***	Having older friends	0.029*
M lower secondary ed	0.063***	IPPA alienation sub-scale	0.079***	IPPA alienation sub-scale	0.047**
SDQ total score W1	0.477***	M lower secondary ed	0.077***	M lower secondary ed	0.029*
		Internalising W1	0.396***	Externalising W1	0.533***

* p < .05; ** p < .01; *** p < .001.

With respect to the SDQ total score, the score at Wave 1 was the strongest predictor of the score at Wave 2. Low-to-high and high stable mother-child and father-child conflict were associated with higher levels of SDQ difficulties, while high-to-low mother-child conflict was associated with a lower level of total difficulties. High-to-low and low stable father-child closeness were also associated with higher levels of difficulty. Mothers' reports of higher monitoring and disclosure, and the child's report of father's higher autonomy granting were associated with lower levels of difficulty. Having a father who was classified as high-to-low in terms of demandingness was associated with higher levels of difficulty. Being a victim of bullying at Wave 2 was associated with higher levels of difficulty, while having 2-5 friends or more than five friends at Wave 1 was associated with lower levels of difficulty. Alienation from friends was associated with higher levels of difficulty as was having a mother with a lower secondary education level. A total of 49.4 per cent of variance in SDQ total difficulties was accounted for.

In relation to internalising difficulties, the strongest predictor of Wave 2 internalising scores was Wave 1 scores. Low-to-high and high stable mother-child conflict were associated with higher levels of difficulty, while high-to-low and low stable father-child closeness and high-to-low father demandingness were associated with higher levels of difficulty, while low-to-high father-child closeness and father responsiveness were associated with lower levels of difficulty. Higher maternal monitoring and child's perception of higher parental control were both associated with lower levels of internalising difficulties. Being a victim of bullying and having 1-2 or 3-5 friends at Wave 2 (in comparison with having none) and alienation from peers were associated with greater difficulties, although having at least one friend at Wave 1 was associated with lower levels of difficulty. Finally having a mother with a lower secondary education level was associated with greater internalising difficulties for boys. A total of 34 per cent of the variance in internalising difficulties was accounted for.

With respect to externalising difficulties, the strongest predictor was externalising difficulties at Wave 1. Low-to-high and high-stable mother-child and father-child conflict, and high-to-low mother-child and father-child closeness were associated with greater difficulty, while high-to-low mother-child conflict was associated with lower levels of difficulty. Mothers' higher monitoring and disclosure and more autonomy-granting by fathers were associated with lower levels of difficulty, as was low-stable father responsiveness. The child's perception of parental control was associated with greater difficulties. Being a perpetrator of bullying, having older friends and alienation from peers were associated with higher externalising difficulties. Having 1-2 friends at Wave 2 in comparison with none was associated with lower levels of difficulty. Finally, having a mother with a lower secondary education level was associated with greater difficulty. In total 50.1 per cent of the variance in SDQ externalising scores at Wave 2 were accounted for.

In summary, across both the internalising and externalising models, respective scores at Wave 1 were the strongest predictors of scores at Wave 2. For girls' internalising difficulties, the key predictors were being a victim of bullying at Wave 2, and higher mother-child conflict at Wave 2 (regardless of conflict at Wave 1). Having at least three friends at Wave 2 was associated with significantly lower internalising difficulties. The key predictors of girls' externalising difficulties were mother-child conflict at Wave 2 (regardless of conflict at Wave 1) and an increase in father-child conflict from Wave 1 to Wave 2.

For boys, high levels of mother-child conflict at Wave 2 (regardless of conflict level at Wave 1) was a key predictor of internalising difficulties, while having at least two friends at Wave 1 was strongly associated with lower internalising scores at Wave 2, reflecting a protective factor. Boys' externalising problems were strongly predicted by mother-child conflict at Wave 2 (regardless of conflict at Wave 1), and child perception of low levels of autonomy granting by fathers.

The next set of models considered the SMFQ (depressed mood) and the antisocial behaviour score. Here the child is reporting upon the outcomes, whereas in the previous models SDQ outcomes were reported upon by mothers. The first two models pertain to girls, while the second two, presented in Table 4.30 relate to boys.

Table 4.29: Standardised regression coefficients and significance levels from regression models predicting SMFQ scores (n = 2,263) and antisocial behaviour scores (n = 2,206) among girls from two-parent households

SMFQ (depressed mood)	Standardised beta	Antisocial behaviour total	Standardised beta
Low-to-high M-C conflict	0.049**	Low-to-high F-C conflict	0.060**
High-to-low M-C conflict	0.034*	High stable M-C conflict	0.046*
High stable M-C conflict	0.074***	High-to-low M-C closeness	0.054**
High-to-low mother closeness	0.042*	M Monitoring	-0.070**
High-to-low mother response	0.074***	High-to-low F response	0.051*
Low stable father response	0.040*	Low stable F response	0.048*
Low-to-high mother demand	-0.037*	Autonomy granting M	-0.117***
Autonomy granting M	-0.070**	Perpetrator of bullying W1	0.117***
Autonomy granting F	-0.049*	Having 3-5 friends W2	0.133**
Victim of bullying W1	0.057**	Having > 5 friends W2	0.199***
Victim of bullying W2	0.125***	Having older friends	0.135***
Perpetrator of bullying W2	0.112***	IPPA alienation sub-scale	0.104***
Having 2-5 friends W1	-0.042*	Income quintile 3	-0.047*
Having older friends	0.049**	M non-degree 3rd level education	-0.120***
IPPA trust sub-scale	-0.042*		
IPPA alienation sub-scale	0.393***		
Lowest income quintile	-0.033*		
M non-degree 3rd level education	-0.035*		

* p < .05; ** p < .01; *** p < .001.

The strongest predictor of depressed mood as indicated by the SMFQ among girls was alienation from friends. High stable and high-to-low and low-to-high mother-child conflict and high-to-low mother-child closeness, high-to-low mother responsiveness and low stable father responsiveness were all associated with higher SMFQ scores. In contrast, low-to-high mother demandingness and higher autonomy granting by mothers and fathers were associated with lower SMFQ scores. Being a victim of bullying at either wave, a perpetrator at Wave 2 and having older friends were associated with higher SMFQ scores. Having 2-5 friends at Wave 1 and higher trust with friends were associated with lower SMFQ scores. Finally, coming from the middle income quintile and having a mother with non-degree third-level education were associated with lower SMFQ scores. A total of 36.3 per cent of variance in SMFQ scores was explained by the model.

The strongest predictor of Antisocial Behaviour (ASB) was mothers' education level: having a mother with a non-degree third-level education (in comparison with those with a degree) was associated with lower ASB scores (no difference in ASB between children with mothers with lower secondary or upper secondary levels and mothers with degrees). Low-to-high father-child conflict, high stable mother-child conflict, high-to-low mother-child closeness, and high-to-low and low stable father responsiveness were all associated with higher ASB scores. In contrast, mothers' high monitoring and child's perception of high autonomy granting by mothers were associated with lower ASB scores. Being a perpetrator of bullying at Wave 2 and having 3-5 or more than five friends at Wave 2 and having older friends and higher levels of peer alienation were associated with higher ASB. Finally, coming from the middle income quintile was associated with lower ASB. This final model explained 13.1 per cent of variance in ASB among girls.

The corresponding two models for boys are illustrated in Table 4.30.

Table 4.30: Standardised regression coefficients and significance levels from regression models predicting SMFQ scores (n = 2,500) and antisocial behaviour scores (n = 2,433) among boys from two-parent households

SMFQ (depressed mood)	Standardised beta	Antisocial behaviour total	Standardised beta
High-to-low F-C conflict	0.048**	Early maturer	0.042*
High stable F-C conflict	0.048**	Late maturer	-0.057**
High-to-low F-C closeness	0.039*	High-to-low M-C closeness	0.052**
High-to-low M response	0.042*	Perceived parental control	0.043*
Low stable mother response	0.046*	High-to-low mother response	0.050*
Low stable F response	0.053**	Low stable mother response	0.123***
Autonomy granting M	-0.107***	High-to-low father response	0.047*
Victim of bullying W1	0.070***	Perpetrator of bullying W1	0.073***
Victim of bullying W2	0.109***	Perpetrator of bullying W2	0.138***
Perpetrator of bullying W2	0.042*	Having 2-5 friends W1	0.078*
Having 1-2 friends W2	0.082***	Having > 5 friends W1	0.080*
Having 3-5 friends W2	0.089***	Having > 5 friends W2	0.140***
IPPA trust sub-scale	-0.129***	Having older friends	0.044*
IPPA alienation sub-scale	0.335***	IPPA trust sub-scale	-0.090***
Lowest income quintile	-0.035*	IPPA alienation sub-scale	0.089***
		Second income quintile	-0.044*
		Externalising W1	0.057**

* p < .05; ** p < .01; *** p < .001.

As was the case for girls, the strongest predictor of depressed mood among boys was peer alienation. High-to-low and high stable father-child conflict, high-to-low father-child closeness, high-to-low mother responsiveness, and low stable mother and father responsiveness were all associated with higher depressed mood among boys. Autonomy granting by mothers was associated with lower depressed mood. Being a victim of bullying at either wave, a perpetrator of bullying at Wave 2, and having 1-2 or 3-5 friends at Wave 2 were all associated with higher levels of depressed mood. Trust with peers and coming from the lowest income quintile were associated with lower depressed mood. Altogether, 28.9 per cent of boys' depressed mood was accounted for by the model.

The final model examined predictors of ASB. The strongest predictors were having more than five friends at Wave 2 and being a perpetrator of bullying at Wave 2. Being an early maturer was associated with higher ASB, while being a late maturer was associated with lower ASB. High-to-low mother-child closeness, mother responsiveness and father responsiveness, low stable mother responsiveness and high perceived parental control were all associated with higher ASB. Being a perpetrator of bullying at Wave 1 as well as Wave 2 was associated with higher ASB, while having 2-5 friends at Wave 1, more than five friends at both waves, having older friends and peer alienation were associated with higher ASB. Peer trust was associated with lower ASB, as was coming from the second income quintile group (a somewhat spurious finding). Finally, externalising behaviour from Wave 1 was positively associated with ASB at Wave 2.

In summary, girls' depressed mood was most strongly predicted by high levels of alienation from peers, being a victim or perpetrator of bullying at Wave 2, stable levels of high conflict with mothers, and decreases in mothers' responsiveness between waves. Higher levels of autonomy granting by mothers was associated with lower levels of depressed mood. Boys' depressed mood was also strongly predicted by peer alienation and having lower levels of trust with peers. As was the case for girls, higher levels of

autonomy granting by mothers was also associated with lower depressed mood among boys. Being a victim of bullying at Wave 2 was also a key predictor of boys' depressed mood.

Girls' antisocial behaviour is most strongly explained by peer-related variables: having more friends, having older friends, being a perpetrator of bullying at Wave 1, and higher levels of alienation from peers were all associated with greater ASB. In addition, girls with mothers with a non-degree level of education had higher levels of ASB. In contrast, higher autonomy granting by mothers was associated with lower ASB. For boys, ASB was most strongly predicted by being a perpetrator of bullying at Wave 1, being part of a larger friend group and stable low levels of maternal responsiveness.

The next set of models uses Logistic Regression (backward elimination method) to test predictors of three health-compromising behaviours: having ever smoked, had a whole alcoholic drink in the past year and tried any drugs. Here models for boys and girls are presented alongside each other, for each behaviour.

As indicated in the first three columns in Table 4.31, for boys, relative to having high stable closeness with mothers, having low-to-high and high-to-low closeness were associated with 2.6 and 1.7 times greater likelihood of having smoked, respectively. Having high-to-low closeness with fathers was associated with a 2.2 times greater likelihood of having smoked, and having low stable responsiveness with fathers was associated with a 2.6 times greater likelihood of having smoked. In terms of peer relationships, being a perpetrator of bullying and having older friends were associated with a greater likelihood of having smoked (3.8 and 2.9 times, respectively). Relative to those from the highest income quintile, those in the second income quintile had a lower probability of having ever smoked (0.4 times).

Table 4.31: P-values and odds ratios from logistic regression models predicting smoking behaviour for boys (n = 2,057) and girls (n = 2,001) from two-parent households

Boys			Girls		
Nagelkerke R^2 = 11.7%	**Sig Level**	**Odds Ratio**	**Nagelkerke R^2 = 16.1%**	**Sig Level**	**Odds Ratio**
Change in M closeness (ref high stable)	.013		Pubertal Status (ref on-time)	.003	
Low-to-high	.006	2.635	Early maturer	NS	1.297
High-to-low	.033	1.770	Late maturer	.008	0.401
Low stable	NS	1.142	Disclosure F	.003	0.931
Change in F closeness (ref high stable)	.001		Change in F demand (ref high stable)	.003	
Low-to-high	NS		Low-to-high	.000	2.553
High-to-low	.000	2.176	High-to-low	NS	1.552
Low stable	NS		Low stable	NS	1.114
Change in F response (ref high stable)	.006		Autonomy granting M	.001	0.891
Low-to-high	NS		Perpetrator of bullying W2	.000	7.856
High-to-low	NS		Having older friends	.001	2.613
Low stable	.001	2.577	Lowest ed level M (ref degree/postg)	.000	
Perpetrator of bullying W2	.002	3.755	Third-level non-degree	NS	
Having older friends	.000	2.932	Lower secondary only	.004	2.433
Income quintile (ref highest)	.054				
4th income quintile	NS				
3rd income quintile	NS				
2nd income quintile	.018	0.442			
1st income quintile	NS				

As shown on the right of Table 4.31, for girls, the likelihood of having ever smoked was higher among girls who were perpetrators of bullying and who had older friends (7.9 and 2.6 times respectively), and was approximately 2.5 times higher among girls whose mothers had a lower second level education and where fathers' demandingness was low-to-high. Late maturers were less likely to have ever smoked. Mothers' autonomy granting and fathers' rating of child disclosure was associated with a slightly lower likelihood of having ever smoked.

Table 4.32: P-values and odds ratios from logistic regression models predicting consumption of an alcoholic drink in the past year for boys (n = 2,063) and girls (n = 2,007) from two-parent households

Boys			Girls		
Nagelkerke R^2 = 18.9%	**Sig Level**	**Odds Ratio**	**Nagelkerke R^2 = 22.2%**	**Sig Level**	**Odds Ratio**
Pubertal Status (ref on-time)	.001		Pubertal Status (ref on-time)	.032	
Early maturer	.002	1.992	Early maturer	NS	
Late maturer	NS		Late maturer	NS	
Change in F conflict (ref low stable)	.000		Monitoring M	.023	1.077
Low-to-high	.001	2.470	Monitoring F	.007	0.940
High-to-low	.000	3.384	Change in M response (ref high stable)	.002	
High stable	.000	2.811	Low-to-high	NS	
Change in M response (ref high stable)	.021		High-to-low	.001	2.631
Low-to-high	NS		Low stable	NS	
High-to-low	NS		Change in F response (ref high stable)	.017	
Low stable	.005	0.259	Low-to-high	NS	
Change in F response (ref high stable)	.000		High-to-low	.003	2.340
Low-to-high	NS		Low stable	.046	1.191
High-to-low	.011	2.042	Victim of bullying W1	.014	2.307
Low stable	.000	3.749	No of friends W2	.034	
Change in F demand (ref high stable)	.002		2-5 friends W1	NS	
Low-to-high	.018	1.882	One friend W1	NS	
High-to-low	NS		Having older friends	.000	4.694
Low stable	.001	3.459	Lowest ed level M (ref degree/ postg)	.012	
Perpetrator of bullying W2	.002	3.750	Third-level non-degree	NS	
No of friends W1 (ref > 5)	.007		Lower secondary only	.024	2.241
2-5 friends W1	.001	0.454			
One friend W1	NS				
No friends	NS				
No of friends W2 (ref > 5)	.000				
3-5 friends	.000	0.441			
1 or 2 friends	.020	0.283			
Having older friends	.000	2.876			
IPPA alienation	.020	1.053			

As shown on the left of Table 4.32, early maturing boys were almost twice as likely to have had an alcoholic drink, while those with older friends and those who had perpetrated bullying were 2.9 and 3.8 times more likely to have had an alcoholic drink respectively. Relative to those with more friends, those with fewer friends at both waves were less likely to have had an alcoholic drink. Alienation from friends was associated with a slightly higher likelihood of having had an alcoholic drink. In terms of parenting variables, relative to those with low stable father-child conflict, those with high stable, high-to-low, and low-to-high conflict were between two to three times more likely to have had an alcoholic drink. Those with low stable and high-to-low father responsiveness, and low-to-high father demandingness were more likely to have had a drink. Those with low stable mother responsiveness had a lower likelihood of having had a drink, relative to those with high stable mother responsiveness.

As indicated on the right of Table 4.32, for girls, those with older friends were 4.7 times more likely to have had an alcoholic drink and those who had been a victim of bullying at Wave 1 were 2.3 times more likely to have had a drink. Girls whose mothers were high-to-low in responsiveness were 2.6 times more likely to have had a drink, while high-to-low and low stable paternal responsiveness were associated with a greater likelihood of having had a drink (2.3 and 1.2 respectively). Finally, mothers' report of monitoring was associated with a slightly lower likelihood and fathers' report of monitoring was associated with a slightly higher likelihood of having had a drink.

Table 4.33: P-values and odds ratios from logistic regression model predicting experimentation with any drugs for boys and girls combined (n = 4,092) from two-parent households

Nagelkerke R^2 = 12.7%	Sig Level	Odds Ratio
Change in F conflict (ref low stable)	.052	
Low-to-high	.049	1.659
High-to-low	NS	
High stable	NS	
Disclosure F	.009	0.943
Change in M response (ref high stable)	.003	
Low-to-high	NS	
High-to-low	.001	2.206
Low stable	NS	
Autonomy granting M	.020	0.925
Perpetrator of bullying W2	.000	3.956
Having older friends	.000	3.453
IPPA Alienation	.003	1.069

A final model shown in Table 4.33 considered factors that predicted experimentation with any type of drug. Given that the prevalence of this behaviour was low within the sample, a combined model for boys and girls was tested. The strongest predictors were having older friends and perpetration of bullying at Wave 2, both of which increased the likelihood of having tried any drugs by 3.5 and 4 times, respectively. Alienation from peers was associated with a small increased likelihood of trying any drugs. In terms of parenting variables, mothers' autonomy granting (child report) and fathers' report of child disclosure were each associated with a decreased likelihood of having tried any drug. Those with low-to-high father-child conflict and high-to-low maternal responsiveness were 1.7 and 2.2 times more likely to have ever tried any drug, respectively.

In summary, boys who smoked were 3.9 times more likely to have perpetrated bullying at Wave 2 and were 2.9 times more likely to have older friends. Relationships with fathers were important: boys whose relationships with fathers had decreased in closeness between waves and were low in responsiveness across both waves were 2.2 and 2.6 times more likely to have smoked respectively. Somewhat surprisingly, boys were 2.6 times more likely to have smoked where relationships with mothers had increased in closeness, and this finding might relate to the low reliability of the closeness sub-scale, previously mentioned. With respect to boys' alcohol use, broadly similar predictors emerged: boys were approximately 3 to 4 times more likely to have had an alcoholic drink if the following conditions were met: being a perpetrator of bullying at Wave 2, having older friends and having low stable responsiveness and demandingness from fathers.

Girls who smoked were nearly eight times more likely to have perpetrated bullying against another at Wave 2, were 2.6 times more likely to have older friends, were 2.5 times more likely to have experienced increased demandingness from fathers and were 2.4 times more likely to have mothers with a lower secondary level of education. For girls, alcohol consumption was 4.7 times more likely if they had older friends, 2.3 times more likely if they had been a victim of bullying at Wave 1, and 2.3 to 2.6 times more likely to have had a drink if they had decreasing fathers' and mothers' responsiveness, respectively. Girls were also 2.2 times more likely to have had an alcoholic drink when their mother had a lower secondary level of education.

Finally, combined models for boys' and girls' experimentation with any drug indicated that the key predictors were having older friends and being a perpetrator of bullying at Wave 2 – these young people were 3.5 to 4 times more likely to have tried any drug. Young people who had experienced decreased mothers' responsiveness across waves were 2.2 times more likely to have tried any drug.

Models that included single-parent families and thus excluded variables reported upon by fathers (father-child conflict and closeness, father report on monitoring and disclosure) are presented in Appendix A (Tables A1 to A7). Specifically in terms of family structure variables, the findings revealed that in comparison to those in stable two-parent households, girls who moved from a single-parent household to a two-parent household between waves had higher levels of SDQ total difficulties, internalising and externalising difficulties, and higher levels of depressed mood and antisocial behaviour. In addition, those who moved from two-parent to single-parent households had higher levels of externalising difficulties only. Girls in stable single-parent households did not differ from girls in stable two-parent households. Change in household structure was not associated with girls' smoking or drinking behaviour.

Somewhat different patterns emerged for boys: relative to those in stable two-parent headed households, boys in both stable single-parent and in single-to-two-parent households had higher levels of SDQ total and externalising difficulties, and boys in two-to-single parent households also had higher levels of externalising difficulties. Change in household structure was not associated with boys' internalising difficulties, depressed mood, or antisocial behaviour. In comparison with boys from stable two-parent households, boys from stable single-parent households were 2.6 times more likely to have smoked a cigarette. Boys' consumption of alcohol in the past year was not associated with change in household structure. Finally, boys and girls (considered together) from stable single-parent households were twice as likely to have tried any drugs, in comparison with those in stable two-parent households.

4.3 WHICH FACTORS ARE ASSOCIATED WITH STABILITY AND CHANGE IN OUTCOMES FROM 9 YEARS TO 13 YEARS?

The final research question asks: What factors are associated with stability and change in social, emotional and behavioural outcomes from 9 to 13 years? The analyses for this research question were conducted on the categorised SDQ scores as these data were collected at both time points. Using the cut-off score of 13, 14.9 per cent of 9-year-olds and 12.3 per cent of 13-year-olds were classified as being 'at risk of difficulty' and a cross-tabulation of classifications across both waves revealed that 79.8 per cent (6,006) were not at risk at either wave, 7.1 per cent (531) were at risk at both waves, 7.9 per cent (591) had been at risk at Wave 1 but were not at risk at Wave 2, while 5.3 per cent had not been at risk at Wave 1, but were at risk at Wave 2 (396).

Multinomial logistic regressions were conducted, using the 'not at risk at either wave' category as the comparison group to which the three other groups were compared. The models tell us what factors distinguish those not at risk at either wave from each of the other possible outcomes (increased or decreased risk across waves or high risk at both waves), and how the risk of each alternative outcome increases or decreases (in comparison with no risk at either wave) according to change in the various predictors. Thus, in comparison with the low stable SDQ risk girls, those girls who were on-time (in comparison with those who had late onset puberty) were 1.96 times more likely to be in the high-to-low SDQ risk category. Girls whose relationships with fathers increased in closeness (in comparison with girls with low stable father-child closeness) were nearly 5 times more likely to be in the high-to-low risk category, while girls whose mothers decreased in responsiveness (in comparison with girls with low stable maternal responsiveness) were 5.6 times more likely to be in the high-to-low risk category, than the stable low risk category. Girls who were victims of bullying at Wave 1 and a perpetrator of bullying at Wave 2 were 1.9 and 5.5 times more likely to be in the high-to-low SDQ risk category, respectively, than in the low stable SDQ risk category. The remaining significant predictor variables all had odds ratios less than 1, which means that these variables were associated with a decreased likelihood of being in the high-to-low SDQ risk category, in comparison with the low stable SDQ risk category. In other words, these variables were associated with an increased likelihood of having low stable SDQ risk. These included higher income levels, higher maternal education levels, having more friends in comparison with having none/one friend at Wave 1, and having low conflict with mothers and fathers.

The second model for girls, shown in the middle column on Table 4.34 illustrates that, in comparison with the low stable SDQ risk girls, those girls who were on-time (in comparison with those who had late onset puberty) were about half as likely to be in the low-to-high SDQ risk category (or late onset girls were about twice as likely to be in the low-stable SDQ category).[22] Surprisingly, girls whose relationships with fathers decreased in conflict (in comparison with high stable father-child conflict) were 3.4 times more likely to be in the low-to-high risk category than low stable risk. Also surprisingly, girls whose fathers were high in responsiveness at any wave (in comparison with girls with low stable paternal responsiveness) were 8 to 11 times more likely to be in the high-to-low SDQ risk category than the low stable SDQ risk category. Girls who were perpetrators of bullying at Wave 1 were 3.7 times more likely to be in the low-to-high SDQ risk category than in the low stable SDQ risk category.

Variables associated with a decreased likelihood of being in the low-to-high SDQ risk category (i.e. they were more likely to be in the low-stable SDQ risk category) include having low stable or decreasing mother-child conflict (5 to 13 times more likely to be in the low stable SDQ risk group), higher income levels (3 to 10 times more likely to be in the low stable risk group depending on income quintile, in comparison with the lowest income quintile), higher maternal education levels and high-to-low maternal demandingness.

22 To interpret odds ratios less than 1, it is possible to divide the odds ratio by 1 and switch the reference groups. For example, girls who were on-time relative to late had a 0.448 odds of being in the low-to-high SDQ risk group than the stable low SDQ risk group. An alternative way of explaining this is to say that girls who were on-time relative to late had a 2.2 odds (1/0.448) of being in the stable low SDQ risk group than the low-to-high SDQ risk group.

The final model for girls shown on the right of Table 4.34 compares those in the low stable and the high stable SDQ risk categories. All significant variables were associated with a greater likelihood of being the low stable SDQ risk category. In comparison with those with high stable parent-child conflict, children were more likely to be in the low stable SDQ risk than the high stable SDQ risk group when they had low stable (58 times more likely), increasing (6.5 times) and decreasing (4.9 times) mother-child conflict and low stable father-child conflict (3.2 times). Having more than none or one/two friends at Wave 1 and Wave 2 was associated with low stable SDQ risk, while those from the middle income quintile (in comparison with the lowest) were 4.7 times[23] more likely to be in the low stable SDQ category than the high stable SDQ risk category.

23 0.212/1 = 4.716.

Table 4.34: P-values and odds ratios from multinomial logistic regression model predicting categorisation of SDQ risk across waves (reference category, not at risk at any age) for girls from two-parent households (n = 2,019)

Low stable SDQ risk vs High-to-low SDQ risk		Low stable SDQ risk vs Low-to-high SDQ risk		Low stable SDQ risk vs High stable SDQ risk	
Predictor (sig level)	Odds ratio	Predictor (sig level)	Odds ratio	Predictor (sig level)	Odds ratio
Child report of control*	0.964	Puberty Cat: Late vs On-time*	0.448	M disclosure*	0.910
Puberty Cat: Late vs On-time*	1.958	M-C conflict: high stable vs low stable***	0.205	M-C conflict: high stable vs low stable***	0.017
M-C conflict: high stable vs low stable***	0.118	M-C conflict: high stable vs high to low*	0.076	M-C conflict: high stable vs low to high***	0.153
M-C conflict: high stable vs low to high**	0.254	F-C conflict: high stable vs high to low*	3.376	M-C conflict: high stable vs high to low*	0.206
F-C conflict: high stable vs low stable**	0.338	F response: low stable vs high stable**	8.301	F-C conflict: high stable vs low stable*	0.316
F-C close: low stable vs low to high*	4.881	F response: low stable vs low to high**	9.225	W1 no of friends: 0-1 friend vs 2-5 friends*	0.191
M response: low stable vs high to low*	5.598	F response: low stable vs high to low**	11.140	W1 no of friends: 0-1 friend vs > 5 friends**	0.200
M demand: low stable vs high to low*	0.164	M demand: low stable vs high to low*	0.158	W2 no of friends: 0-2 friend vs 3-5 friends*	0.192
W1 no of friends: 0-1 friend vs 2-5 friends**	0.365	W1 perpetrator of bullying**	3.733	W2 no of friends: 0-2 friend vs > 5 friends**	0.116
W1 no of friends: 0-1 friend vs > 5 friends**	0.160	W2 income quintile: lowest vs highest***	0.100	W2 income quintile: lowest vs 3rd*	0.212
W1 victim of bullying*	1.930	W2 income quintile: lowest vs 4th*	0.316		
W2 perpetrator of bullying*	5.478	W2 income quintile: lowest vs 3rd**	0.303		
W2 income quintile: lowest vs highest***	0.197	W2 income quintile: lowest vs 2nd**	0.190		
W2 income quintile: lowest vs 4th**	0.303	W2 M ed level: lower sec vs degree/pg**	0.232		
W2 income quintile: lowest vs 3rd**	0.367	W2 M ed level: lower sec vs LC/non-degree***	0.233		
W2 income quintile: lowest vs 2nd**	0.376				
W2 M ed level: lower sec vs degree/pg**	0.260				
W2 M ed level: lower sec vs LC/non-degree***	0.283				

* $p < .05$; ** $p < .01$; *** $p < .001$; Nagelkerke $R^2 = .473$.

Table 4.35: P-values and odds ratios from multinomial logistic regression model predicting categorisation of SDQ risk across waves (reference category, not at risk at any age) for boys from two-parent households (n = 2,117)

Low stable SDQ risk vs High-to-low SDQ risk		Low stable SDQ risk vs Low-to-high SDQ risk		Low stable SDQ risk vs High stable SDQ risk	
Predictor (sig level)	Odds Ratio	Predictor (sig level)	Odds Ratio	Predictor (sig level)	Odds Ratio
M Monitoring*	0.957	M Monitoring *	0.939	Child report of control*	0.958
Puberty Cat: Late vs Early*	1.821	Autonomy granting F***	0.817	M-C conflict: high stable vs low stable***	0.009
M-C conflict: high stable vs low stable***	0.125	M-C conflict: high stable vs low stable***	0.101	M-C conflict: high stable vs low to high**	0.300
M-C conflict: high stable vs low to high***	0.141	M-C conflict: high stable vs high to low*	0.020	M-C conflict: high stable vs high to low***	0.117
M-C close: low stable vs high stable*	0.391	Having older friends**	2.749	F-C conflict: high stable vs low stable**	0.270
M-C close: low stable vs high to low*	0.346	W2 income quintile: lowest vs highest*	0.327	W1 no of friends: 0-1 friend vs 2-5 friends***	0.090
M response: low stable vs high stable*	0.428	W2 income quintile: lowest vs 4th**	0.327	W1 no of friends: 0-1 friend vs > 5 friends***	0.012
M response: low stable vs low to high*	0.372			W2 M ed level: lower sec vs degree/pg***	0.016
W1 no of friends: 0-1 friend vs 2-5 friends**	0.374			W2 M ed level: lower sec vs LC/non-degree**	0.247
W1 no of friends: 0-1 friend vs > 5 friends**	0.363				
W1 victim of bullying**	2.123				
W2 income quintile: lowest vs highest**	0.363				
W2 M ed level: lower sec vs degree/pg***	0.316				
W2 M ed level: lower sec vs LC/non-degree**	0.484				

* p < .05; ** p < .01; *** p < .001; Nagelkerke R^2 = .437.

Table 4.35 illustrates the multinomial regression models for boys. The first model in the column on the left of the table illustrates the model for those in the high-to-low (decreasing) SDQ risk group, in comparison with the low stable SDQ risk group. Two variables were associated with a greater likelihood of high-to-low SDQ risk: early maturers were 1.8 times more likely to be high-to-low SDQ risk and victims of bullying at Wave 1 were 2.1 times more likely to be high-to-low SDQ risk. All other significant predictors were associated with a decreased likelihood of high-to-low SDQ risk, i.e. they were more likely to be in the low stable SDQ risk group. By dividing these odds ratios and switching the reference group, it is noted that those with low stable and increasing mother-child conflict were 7-8 times more likely to be in the low stable SDQ risk group than the high-to-low risk group, in comparison with those with high-stable mother-child conflict. Those with high stable mother-child closeness and maternal responsiveness, and decreasing mother-child closeness and increasing maternal responsiveness were approximately 2.5-2.9 times more likely to be in the low stable SDQ risk group in comparison with those with low stable mother-child closeness and maternal responsiveness. Having more friends, a mother with a higher level of education and coming from the highest versus the lowest income quintiles were each associated with a 2-3 times greater likelihood of being in the low stable SDQ risk group than the high-to-low SDQ risk group.

Boys with older friends were 2.7 times more likely to be in the low-to-high (increasing) SDQ risk group than the low stable SDQ risk group, while higher maternal monitoring and autonomy granting from fathers were associated with a slightly higher likelihood of being in the low stable SDQ risk group. Coming from the fourth or highest income quintile (in comparison with the lowest) was associated with a three times greater likelihood of being in the low stable versus the low-to-high SDQ risk group. Finally, having low stable or decreasing mother-child conflict (in comparison with high stable mother-child conflict) was associated with a 9 to 50 times greater likelihood of being the low stable than the low-to-high SDQ risk group.

The final model shown on the right of Table 4.35 compares low stable and high stable SDQ risk. Having more friends, a mother with a higher level of education, and a perception of greater parental control were all independently associated with a greater likelihood of being in the low stable than the high stable SDQ risk group. Having low stable, increasing and decreasing mother-child conflict and low stable father-child conflict (in comparison with high-stable conflict with mother/father) were associated with a greater likelihood of being in the low stable SDQ risk group than the high stable SDQ risk group for boys.

In summary, key factors which predicted girls' low stable SDQ risk between waves (relative to those with high stable SDQ risk) were low levels of mother-child and father-child conflict and having at least two friends. Key predictors of girls increasing SDQ risk between waves (relative to those with low stable risk) were high levels of mother-child conflict at both waves, being a perpetrator of bullying at Wave 1, and coming from the lowest income quintile. Surprisingly, decreasing conflict with fathers, and high father responsiveness at any wave were associated with a greater likelihood of being in the increasing SDQ risk than the low stable SDQ risk groups for girls.

For boys, coming from a higher income group, and having low levels of mother-child conflict at Wave 2 significantly increased the likelihood of boys having low stable SDQ risk, than an increased risk of SDQ difficulties between waves. Having older friends was associated with a high likelihood of being in the low-to-high SDQ risk group. Having a mother with a higher level of education, having at least two friends and having low mother-child conflict at any wave protected against high stable SDQ risk.

A final set of multinomial logistic regression models were run for boys and girls to incorporate those in single-parent households. By default, father-child conflict and closeness variables were excluded, as were paternal disclosure and monitoring variables, but a change in household type variable was incorporated into the models, which are presented in Tables A8 and A9. Of note, this household change variable was significant in a number of the models. For girls, relative to those in a stable two-parent household across

waves, those in stable single-parent, from single-parent-to-two-parent and from two-parent-to-single-parent households were 2.5, 3 and 3.1 times respectively, more likely to be in the low-to-high (increasing) SDQ risk group than the low stable SDQ risk group. Additionally, relative to girls in stable two-parent households, those in single-parent-to-two-parent households were 9.6 times more likely to be in the high stable SDQ risk group than the low stable SDQ risk group.

Among boys, the household change variable was only significant in the model comparing the low stable and high stable SDQ risk groups: specifically, relative to those in a stable two-parent household across waves, those in stable single-parent, from single-parent-to-two-parent and from two-parent-to-single-parent households were 4.3, 3.3 and 2.2 times more likely, respectively, to be in the high stable SDQ risk than the low stable SDQ risk groups.

In the final chapter of the report, these results will be summarised and discussed.

Chapter 5

DISCUSSION

This report investigates social, emotional and behavioural outcomes among 13-year-olds in ***Growing Up in Ireland***. The analyses draw upon data from Cohort '98 at Wave 1 and 2, when the sample was 9 and 13 years of age and builds upon the descriptive analysis of the sample (published as *The lives of 13-year-olds*; Williams et al., 2018). The current analyses addressed four research questions. 1) How are young adolescents faring in terms of social, emotional and behavioural outcomes at 13 years? 2) To what extent is there change or stability in these outcomes between 9 and 13 years? 3) What factors are associated with these outcomes? 4) What factors are associated with change and stability in outcomes? The factors that were selected to be investigated included: pubertal status, relationships with parents, parenting style, relationships with peers, and indicators of socio-economic status, including maternal education level and household income quintile. In this chapter, limitations of the research will first be outlined. Following this, each of the research questions will be revisited and an overview of key findings will be presented and discussed with reference to previous research. The chapter will conclude with some key messages for consideration for policy and practice.

5.1 STUDY LIMITATIONS

Notwithstanding the tremendous value of ***Growing Up in Ireland*** for providing comprehensive data on child and adolescent development, and on aspects of the young person's peer and family context, based on a large nationally representative sample, the available data had some limitations. As noted in Chapter 2 of the report, some of the scales had less than ideal reliability. Specifically, the parental monitoring and child disclosure scales, as reported upon by mothers and fathers, had Cronbach alpha values less than 0.70, which is considered the acceptable value (Taber, 2018). In addition, young people's reports on mothers' and fathers' demandingness and autonomy granting had reliability values less than 0.70, as did the scale on maternal responsiveness, completed at Wave 1. Therefore, caution should be exercised when interpreting findings based on these measures. An additional issue is that of source bias – when analysis involves several variables which are based upon measurement from the same source, any relationships may be a function of bias in the mind of the informant. For example, mothers reported upon internalising and externalising difficulties, as well as on mother-child conflict and closeness, while young people reported on depressed mood and antisocial behaviour (ASB), as well as on their peer relationships. It should be noted that parenting variables emerged as stronger predictors of internalising and externalising difficulties, and that peer relationships emerged as stronger predictors of depressed mood and ASB, and it should be borne in mind that the strength of these associations is likely to be partly a function of source bias.

In addition, several variables which are likely to be related to young people's social, emotional and behavioural well-being were not included in this current analysis. For example, sibling relationships, weight status, physical activity, body image and social media use, some of which are described in *The lives of 13-year-olds* (Williams et al., 2018), are all known to be independently related to children's social and emotional health and thus are important considerations for future research. In addition, data on vaping and the use of e-cigarettes were not collected as part of these waves with this cohort but have been subsequently included in ***Growing Up in Ireland*** surveys.

5.2 HOW ARE YOUNG ADOLESCENTS FARING IN TERMS OF SOCIAL, EMOTIONAL AND BEHAVIOURAL OUTCOMES AT 13 YEARS?

This question was addressed by analysing data from mothers' report on the Strengths and Difficulties Questionnaire (SDQ), young people's report on the Short Mood and Feelings Questionnaire, and both mothers' and young people's responses to a series of questions about the young person's engagement in antisocial behaviour. The findings on the SDQ revealed a mean total difficulties score of 7.10, and a positive skew, indicating that most of the sample was faring well. Further, 88 per cent of the young people

fell within the normal range on the SDQ scale. Thus, 12 per cent – or one-in-eight of 13-year-olds – was displaying significant levels of difficulty (scores greater than 13), with half of these (6 per cent overall) scoring only in the slightly raised band (14-16), and the remaining 6 per cent scoring in the 'higher' and 'very high' bands. This means that one-in-16 children was displaying significant levels of difficulty. These figures compare favourably with data from the Millennium Cohort Study in the UK, where 15 per cent of the sample had scores greater than 13 (in comparison with 12 per cent from the Irish data) (Hope et al., 2018).

Given that the SDQ is widely used among cohort studies across the world, it is possible to compare mean scores within large samples of adolescents to indicate how adolescents in Ireland are faring relative to youth in other countries. Comparing the mean score of 7.10 from the Irish data, Christensen, Fahey, Giallo and Hancock (2017) reported a mean score of 7.30 on the total difficulties scale for 13-year-olds participating in the Longitudinal Study of Australian children (n = 3,537). Analysis of SDQ scores from the fifth wave of the UK Millennium Cohort Study at child age 11 years (n = 12,653) revealed a mean total score of 7.72, higher than the ***Growing Up in Ireland*** mean score (Garrett, Chandola, Purdam & Wood, 2017). A longitudinal study of young people in Sweden (n = 3,671, 13-14-year-olds) found that 91.3 per cent of them had scores in the normal range on the SDQ (0-13) (Galanti, et al., 2016) which compares with 87.7 per cent for the ***Growing Up in Ireland*** sample. Finally, analysis of SDQ data administered to four large cohorts in Denmark found lower scores than those reported by other studies – for example, the mean scores for 10-12-year-olds in the Aarhus Birth Cohort Study (n = 6,751 parent SDQs) was 6.85 for boys and 4.54 for girls suggesting lower levels of difficulties among Danish children (Niclasen et al., 2012). Thus, the Irish children are comparing favourably with the UK and Australian children, but less favourably with the Swedish and Danish children.

In terms of the measure of depressed mood (SMFQ) reported upon by the young people themselves, a mean score of 3.86 compared very favourably with the mean score of 5.4 from the Millennium Cohort Study at child age 14 years (Lewis et al., 2017). Larsson, Ingul, Jozefiak, Leikanger and Sund (2016) reported a mean SMFQ score of 4.5 based on sample of 5,804 young teens (average age 13.8 years) in Norway. Their data also revealed significant gender differences, with girls having a higher mean score than boys (5.56 for girls, 3.38 for boys). While the Irish data also indicated significant gender differences (mean score of 4.12 for girls, 3.60 for boys), the scores for girls and overall were lower than in the Norwegian study. In a similar vein, based on the Longitudinal Study of Australian Children data of the child cohort at age 14 to 15 years, 19 per cent of boys and 34 per cent of girls scored at or above the cut-off on the SMFQ which represents a higher proportion than within the ***Growing Up in Ireland*** sample where the respective figures were 13.9 per cent for boys and 18 per cent for girls (Gray & Daraganova, 2018).

Table 5.1 summarises some key comparisons between ***Growing Up in Ireland*** data presented in this report and data from other countries.

Table 5.1: Comparisons between *Growing Up in Ireland* data and data from other countries

	SDQ	SMFQ
Current Analysis Ireland (13 years old)	Mean score 7.1 88% normal range	Mean score 3.86 16% above cut-off
Australia (13 years old)	Mean score 7.3	
Australia (14-15 years old)		26% above cut-off
UK (11 years old)	Mean score 7.72	
UK (14-15 years old)		Mean score 5.4
Sweden (13-14 years old)	91.3% normal range	
Denmark	Mean score 6.9 boys Mean score 4.5 girls	

The conclusion that could be drawn is that the Irish children, as a whole, are faring well in comparison with their counterparts in the UK and Australia. However, as many as one-in-16 or 6 per cent of children are displaying severely problematic levels of social, emotional and behavioural difficulties, based on mother report, and 14 per cent to 18 per cent of boys and girls are displaying elevated levels of depressed mood, that may be a cause for concern into the future. The disparity between the proportion of boys' and girls' classified as having elevated depressed mood reflects the emergence of gender differences which is well substantiated in the literature and which is expected to increase into the adolescent years (Graber & Sontag, 2009). Direct comparison with other Irish studies of adolescent mental health is somewhat difficult owing to the different measures that are used, and the age ranges of the other samples, which are typically broader or older (e.g. 12-19 years, Dooley & Fitzgerald, 2012; Dooley et al., 2019; 12-18 years, Martin et al., 2006; 15-17 years, Sullivan et al., 2004). Closest to Wave 2 of ***Growing Up in Ireland*** is the study of Lynch et al. (2004), where the SDQ self-report was administered to 723 12-15-year-olds. Notwithstanding the use of different reporters and the older upper age limit, 17.8 per cent were reported as 'at risk' on the SDQ scale, a higher rate than reported by mothers of the 13-year-olds in ***Growing Up in Ireland***.

Rates of antisocial behaviour (ASB) – encompassing a range of behaviours from fare evasion, bullying and fighting, lying, stealing, vandalism, to inflicting harm on other people or on animals – were low among the 13-year-olds, as reported by both young person and their mothers. Based on youth reports, almost two-thirds of the sample had never engaged in any of the ASBs, 18 per cent had engaged in one behaviour once, and a further 7 per cent had engaged in two of the behaviours at least once. Thus, for 91 per cent of the sample, these behaviours were absent or extremely rare. The remaining 9 per cent of the sample appear to be engaging in multiple types of ASB, although the behaviours were occurring at low frequency – less than one-fifth of this 9 per cent engaged in the 11 of the 15 ASBs more than once. Of course, even engaging in one of the more serious behaviours once is a cause for concern (e.g. setting fire to somebody's property, breaking into a vehicle, house) and 7 per cent of the young people had previously been in trouble with the Gardaí, and this was significantly more likely for boys than for girls. The findings on the prevalence of individual acts are broadly similar to what has emerged in other research, both in Ireland and in the UK. For example, in both My World Surveys, Dooley and Fitzgerald (2012) and Dooley et al. (2019) reported that 9 per cent of 13-14-year-olds in Ireland had previously been in trouble with the Gardaí (7% reported on the GUI sample). Findings from the Longitudinal Study of Young People in England reported that 7 per

cent of 14-year olds had engaged in graffiti, 11 per cent in vandalism, 12 per cent in shoplifting and 19 per cent had been involved in a fight (Cebulla & Tomaszewski, 2009). Comparative figures from ***Growing Up in Ireland*** 13-year-olds were 6 per cent for graffiti or vandalism, 7 per cent for shoplifting, and 7 per cent for hit, kicked or punched, and 4 per cent for being involved in a serious fight. Thus, rates of ASB appear to be slightly lower among the Irish than the English cohort.

Parent reports of ASB were even lower than the young person's report, with many parents seemingly unaware of their child's transgressions or misbehaviours. Nine per cent of parents noted that their child often fought or bullied and 2 per cent of parents reported upon each of the following: lying, being physically cruel to other people and deliberately destroying property. The discrepancy between parents' and youths' reports of ASB is not surprising: ASB is most likely to occur away from supervision and without the knowledge of parents, unless perhaps the behaviour comes to the attention of the school, healthcare professionals or the Gardaí. Although ASB might be under-reported due to a social desirability bias, the self-report methodology is a staple in the study of ASB, having been used in many previous cohort studies, some of which have been prominent in the study of ASB (e.g. Dunedin Multidisciplinary Health and Development Study; Moffitt, Caspi, Dickson, Silva & Stanton, 1996). Relying solely upon official records reveals only the worst offenders and the worst offences and tends to under-represent the extent of ASB (Farrington, 2001). Indeed, in contrast to interviews, self-report questionnaires as used in ***Growing Up in Ireland*** are believed to yield valid and representative data (Junger-Tas & Marshall, 1999; Farrington, 2001).

Rates of risky health-related behaviours, including cigarette smoking, alcohol and drug use, also relied upon self-report questionnaires, and the general finding is that rates reported by the ***Growing Up in Ireland*** sample are lower than reported from other data sources. Nine per cent of the ***Growing Up in Ireland*** 13-year-olds had previously smoked a cigarette – over three-quarters of these no longer smoked; thus 2 per cent of the sample currently smoked and 1 per cent of the sample – approximately 70 13-year-olds – smoked every day, with no differences between boys and girls. Findings from the Health Behaviour of School-Aged Children Study[24] (Inchley et al., 2016; based on 2013/2014 data) revealed broadly similar rates of smoking behaviour among 13-year-olds in Ireland: 2 per cent of girls and 4 per cent of boys smoked once a week, which was comparable with the HBSC average for all countries of 3 per cent for girls and 4 per cent for boys. HBSC also reported that 9 per cent of 15-year-old girls and 12 per cent of 15-year-old boys in Ireland reported smoking at age 13 or younger, and these figures were significantly lower than the HBSC average for all countries of 17 per cent. Figures from both ***Growing Up in Ireland*** and HBSC data point to a substantial decrease in the proportions of young people who have tried smoking by 13 years. Data from the 2009/2010 HBSC Irish survey indicated that 19 per cent of girls and 21 per cent of boys, at 15 years, said they had first smoked at age 13 or younger (with the HBSC average for all countries being even higher at 24% in 2009/2010). However, in Irish data from HBSC 2009/2010 , similar proportions to those found in ***Growing Up in Ireland*** and HBSC Ireland (2013/2014) reported smoking at least once a week (3% for girls and 4% for boys) (Currie et al., 2012). Findings from the most recent HBSC study (data collected in 2017/2018; Inchley et al., 2020) suggest that rates of smoking among 13-year-olds in Ireland have declined since ***Growing Up in Ireland*** data were collected in 2011/2012, with 4 per cent of girls and 6 per cent of boys having ever smoked at 13 years (9% GUI data). However, it may be that young people are no longer smoking cigarettes but are vaping instead.

In terms of smoking cannabis, sniffing glue/paint/petrol, and using 'harder' drugs, (such as cocaine, heroin), 1.4 per cent, 2.9 per cent and 0.4 per cent of the entire sample had tried these drugs respectively. The comparable figures for smoking cannabis among first years (approximately 13 years of age) from the My World Surveys were 2 per cent and 3 per cent respectively (Dooley & Fitzgerald, 2012; Dooley et al., 2019). Based on HBSC data, 3 per cent of 15-year-olds in Ireland had first cannabis use by the time they were 13 years; this was also the HBSC average across all countries. This rate is higher than reported within ***Growing Up in Ireland*** data – the anonymity associated with completion of the HBSC survey may have contributed to the higher reported rates of cannabis use. In addition, ***Growing Up in Ireland*** data were gathered in 2011/12, HBSC data were gathered in 2013/14.

24 The Health Behaviour of School-Aged Children Study (HBSC) is a World Health Organisation multi-country (currently 43 countries across Europe and North America) study of 11-, 13-, and 15-year boys' and girls' health and well-being. Data are collected every four years. The study has been ongoing since 1983/84, and Ireland was the 28th country to join the study in 2001/02.

Finally, alcohol use was more prevalent among the 13-year-olds than either cigarette smoking, or the use of cannabis or other drugs: overall, 15.5 per cent of the sample had previously had an alcoholic drink, with boys more likely than girls. Approximately half of these (about 500 participants) had consumed a whole drink in the past year, approximately 10 per cent of these had a drink at least once a month (n = 46, 0.6% of entire sample) and 1 per cent of entire sample (n = 87) had been drunk at least twice. Thus, it appears that a substantial minority of the 13-year-olds had experimented with alcohol, but only about 1 per cent either drank on a monthly basis or have been drunk at least twice. Due to the different measures used, it is difficult to compare these findings with those from MWS1, where it was found that 3 per cent of first years engaged in problem drinking and 1 per cent had possible alcohol dependence (Dooley and Fitzgerald, 2012). More recently, in MWS2, Dooley et al. (2019) reported that only 8 per cent of first years had previously had an alcoholic drink, although among those, 12 per cent engaged in problem drinking and 2 per cent had possible alcohol dependence.

The proportion of young people who had previously had an alcoholic drink in ***Growing Up in Ireland*** (15.5%) was very similar to the figure of 17 per cent of 14-year-olds who had had an alcoholic drink, reported in the LSYE (Cebulla & Tomaszewski, 2009). Data from the HBSC (2013/14) indicated that 2 per cent of 13-year-olds in Ireland had been drunk at least twice (lower than the HBSC average across all countries of 5%) – this figure is double that reported here based on ***Growing Up in Ireland*** data (1%). Prevalence of drinking at least once a month was about 6 per cent for the 12-14-year-olds, and about 7 per cent report having previously been 'really drunk' (Gavin, et al., 2015, HBSC Ireland data). These figures are higher than those from ***Growing Up in Ireland***.

Table 5.2 illustrates comparisons between figures derived from the current analysis of ***Growing Up in Ireland*** data and from the previous two HBSC studies in Ireland.

Table 5.2: Comparisons between *Growing Up in Ireland* data and HBSC Ireland data (all data for 13-year olds)

Date of data collection	GUI 2011/2012		HBSC 2013/2014		HBSC 2017/2018	
	Boys	Girls	Boys	Girls	Boys	Girls
Ever had an alcoholic drink	17.4%	13.5%	20%	16%	18%	13%
Been drunk at least twice	1.4%	1%	2%	2%	2%	2%
Ever smoked a cigarette	9%	9%	6%	7%	6%	4%
Currently smoke (last 30 days)	1.6%	2.3%	3%	2%	3%	2%

* HBSC data taken from Inchley et al. (2020)

The conclusion regarding the use of cigarettes and alcohol from these ***Growing Up in Ireland*** data is that approximately 9-16 per cent have experimented at some point, and about 1 per cent of the sample are engaging in cigarette and alcohol-related behaviours on a more frequent basis. The prevalence of having ever tried drugs is of the order of about 1.4 per cent to 3 per cent, for cannabis use and sniffing solvents such as glue/paint. Other studies have tended to focus upon cigarettes, cannabis and alcohol use, and fewer studies have considered sniffing glue/paint/petrol behaviours, which occurred more commonly than other drug-use behaviours in ***Growing Up in Ireland***, and among girls in particular. These types of behaviours may be worthy of study into the future, as these are substances that may be more readily accessible to young people and they may not be aware of the dangers involved. Such behaviours may represent a pathway into experimentation with other types of drugs. Overall the rates of engagement in cigarette, alcohol and cannabis use reported by the 13-year-olds in ***Growing Up in Ireland*** were lower than rates reported in other anonymously completed questionnaires. Thus the possibility of under-reporting must be considered in interpreting these findings.

5.3 TO WHAT EXTENT IS THERE CHANGE OR STABILITY IN SOCIAL, EMOTIONAL AND BEHAVIOURAL OUTCOMES BETWEEN 9 YEARS AND 13 YEARS?

The second research question addressed change and stability in social, emotional and behavioural outcomes over time and used data from the mother-completed SDQ scales. Correlational analyses revealed considerable stability in SDQ scores across waves, with greater stability evident for externalising/total scores, than the internalising scores: 28 per cent of variance in Wave 2 internalising scores were accounted for by Wave 1 internalising scores; and 41 per cent of variance in both Wave 2 externalising and total scores were accounted for by the respective scores at Wave 1. These findings are broadly in line with those reported by Ford, Collishaw, Meltzer and Goodman (2007) who collected SDQ data from mothers, teachers, and self-reports at child age 11 and 14 years. Combining data from the different sources, the authors constructed a latent variable for total difficulties at both time points and found a correlation of 0.71 between Time 1 and Time 2 scores. Thus, half of the variance in Time 2 scores were accounted for by Time 1 scores, indicating strong stability over time.

In terms of categorisation as 'at risk' at neither, either or both waves, stability rather than change was the most likely outcome within the ***Growing Up in Ireland*** sample, with 80 per cent of participants doing well at both waves, and 7 per cent of the sample 'at risk' at both waves. In contrast, 8 per cent of the sample was at risk at Wave 1, but not at Wave 2, reflecting improvement over time. One-in-20 participants (5%) was at risk at Wave 2, having not been at risk at Wave 1, thus reflecting a deterioration in their well-being over time. This continuity in SDQ classification was similarly reported by O'Connor, Reulbach, Gavin and McNicholas (2018), based on their analysis of ***Growing Up in Ireland*** data. Becker, Rothenberger, Sohn and the BELLA study group (2014) in Germany reported upon four waves of SDQ data collection and how categorisation into the 'at risk' category on the various sub-scales changed over time. They found that about 80 per cent of children and adolescents classified as 'not at risk' remained so over six years, and 3 per cent as 'at risk' over six years. Thus, the rates of those stably not at risk were the same as those identified in the ***Growing Up in Ireland*** data, and over a longer period of time. The rates of those who remained at risk was lower (3%) than in the ***Growing Up in Ireland*** data (7%), although slightly different time-frames were involved (6 years versus 4 years in GUI). These authors also concluded that 'at risk' categorisation in terms of emotional difficulties was less stable over time; this resonates with the lower correlations between Wave 1 and Wave 2 scores found for internalising difficulties in the ***Growing Up in Ireland*** data.

5.4 WHICH FACTORS ARE ASSOCIATED WITH SOCIAL, EMOTIONAL AND BEHAVIOURAL OUTCOMES?

A series of models revealed common predictors of outcomes for boys and girls, as well as distinct sets of predictors. For boys and girls, across all models, the strongest predictors of SDQ scores were respective scores at Wave 1, which reflects the issue of stability in difficulties (or absence of difficulties) over time, as previously noted. However, SDQ internalising scores at Wave 1 did not predict depressed mood scores at Wave 2, for either boys or girls. Also, SDQ externalising scores at Wave 1 did not predict antisocial behaviour at Wave 2 for girls, but they were a relatively weak predictor of antisocial behaviour for boys.

5.4.1 INTERNALISING DIFFICULTIES AND DEPRESSED MOOD

In terms of predictors of girls' internalising difficulties, as denoted by their SDQ internalising scores and their depressed mood scores, the strongest predictor of SDQ internalising scores (after Wave 1 scores) was having more than five friends at Wave 2 – those with more than five friends, and those with 3-5 friends had lower internalising difficulties scores than those with no friends at Wave 2. Also, being a victim of bullying at Wave 2 was associated with higher internalising scores. For depressed mood, the strongest predictor was having high levels of alienation from peers, and alienation was also associated with higher levels of internalising difficulties. Being a victim and a perpetrator of bullying at Wave 2 were associated

with higher internalising and depressed mood scores. Higher levels of trust with friends were associated with fewer difficulties/better mood. Surprisingly, having older friends was associated with lower SDQ internalising difficulties (based on mother report), but higher levels of depressed mood (based on young person report). Thus, the perceived effect of older friends is markedly different depending upon whether mothers or young people are reporting upon the effect. Together these findings speak to the significance of peer-related dynamics on early adolescent girls' mood, and highlight a number of processes that may serve as risk or protective factors: involvement in bullying is a risk to well-being, as is having no friends or only one friend, and high levels of alienation from peers. The importance of peers during adolescence has been well-substantiated by previous research (Brown & Larson, 2009), as has the vulnerability for girls when things go wrong in these relationships (Benenson & Christakos, 2003). This vulnerability is indicated by higher level of difficulties that occur for girls when they are bullied, have fewer friends, and have high alienation from and low trust in friends.

For boys' internalising difficulties the strongest predictor (after Wave 1 scores) was, as in the girls' models, peer-related variables: having at least one friend or more at Wave 1 was associated with lower levels of internalising difficulties, although having more friends at Wave 2 was associated with higher levels of both internalising difficulties and depressed mood. Quality of peer relationships was important too: higher levels of alienation from peers were associated with greater internalising difficulties and depressed mood, while trust in peers was associated with lower depressed mood. Across both girls' and boys' models, peer alienation – referring to the extent to which young people feel distant from their friends, even when they want to be close to them[25] – was a stronger predictor of depressed mood than peer trust, a finding that replicates work by Bosacki, Dane, Marini & Ylc-Cura (2007).

Involvement in bullying – either as a victim or as a perpetrator – was associated with greater internalising difficulties and depressed mood for boys. As was the case for the girls' models, these findings highlight the significant risk that poor peer relationships can pose for boys' emotional well-being. The association between involvement in bullying and internalising difficulties, as highlighted by these findings, can be interpreted in different ways. Research shows that young people with internalising (and indeed externalising) difficulties are at increased risk of being involved in bullying (Farmer et al., 2015; Gumpel & Sutherland, 2010). It may also be that involvement in bullying leads to internalising difficulties; and it is likely that both are occurring. For both boys and girls, internalising difficulties – as reported upon by mothers – were only associated with bullying at age 13, suggesting that the internalising difficulties were associated with concurrent experiences, rather than past experiences of bullying. However, based on the child's own report of their depressed mood, both past and current experiences of bullying were associated with depressed mood. Thus, where a child is a victim of bullying across time and across contexts (e.g. from primary to secondary school) the risk of mood difficulties is elevated.

Family related processes also mattered for internalising difficulties and depressed mood, and in the main it was processes involving mothers rather than fathers that were significant for girls. Mother-child conflict emerged as a consistent predictor of internalising difficulties and depressed mood for girls. Girls with high stable and low-to-high levels of mother-child conflict had higher levels of difficulties than those with low stable mother-child conflict. In addition, having high-to-low mother-daughter conflict was associated with more depressed mood, suggesting that having had high levels of conflict at age 9 can still be predictive of depressed mood, even if levels of conflict have dissipated between 9 and 13 years. Low stable closeness and high-to-low mother-daughter closeness were also associated with greater difficulties. Girls experienced greater mood difficulties where fathers had low levels of responsiveness at both waves. Three protective factors emerged as being associated with fewer difficulties: girls' perceptions of greater autonomy granting by mothers and fathers were associated with lower levels of depressed mood, and perceptions of higher parental control were associated with lower levels of internalising difficulties.

25 Sample items on the alienation scale include: 'it seems as if my friends are irritated with me for no reason' and 'I get upset a lot more than my friends know about'.

Together these findings indicate that having a non-conflictual daughter-mother relationship is an important protective factor against internalising types of difficulties. Substantial literature supports the idea that mother-child conflict increases in early adolescence (Laursen et al., 1998; Smetana, 2011), and the results from this analysis do show that overall conflict had increased from Wave 1 to Wave 2, although the size of this difference was small. Notwithstanding this finding, 38 per cent of mothers reported lower conflict with their children at Wave 2 than at Wave 1; thus increased conflict was by no means ubiquitous or inevitable. Interestingly, daughters' reports of greater autonomy-granting by both mothers and fathers were associated with lower levels of depressed mood. This finding reflects what developmental theory states about the importance of parents granting 'psychological' freedom to adolescents in order to support identity exploration and emotional independence (Collins & Steinberg, 2008).

With respect to family-level variables for boys, as was the case for girls, mother-child conflict played a key role in terms of internalising difficulties – those with high conflict at Wave 2, regardless of conflict at Wave 1, had greater internalising difficulties. However, mother-child conflict was not related to boys' depressed mood – here it was father-child conflict that mattered: those who had high conflict with fathers at Wave 1, regardless of whether it was high or low at Wave 2, had greater levels of depressed mood. In addition, boys with low levels of closeness to fathers at Wave 2 had higher levels of internalising difficulties and depressed mood. Low stable mother and father responsiveness were both associated with higher levels of depressed mood. In terms of parenting processes that appeared to protect against sons' difficulties, increasing father responsiveness and mothers' monitoring behaviours were associated with lower internalising difficulties and mothers' autonomy granting was associated with lower depressed mood. These findings indicate that parent-child relationships characterised by conflict were associated with higher levels of difficulties, and such difficulties in relationships with fathers mattered for sons in ways that they did not for daughters. Thus, boys appear to be particularly susceptible to the influence of the father-child relationship and having a father who is a responsive parent emerged as an important protective factor in terms of boys' emotional well-being.

Finally, in examining household level variables from all households (including single-parent and two-parent households), coming from the lowest income quintile, having a mother with an education level lower than a degree or transitioning from a single-parent to a two-parent household were all associated with higher levels of internalising difficulties for girls. However, for girls' depressed mood, coming from the middle income quintile only (in comparison with the highest) was associated with lower depressed mood, and transitioning from a single-parent to a two-parent household was associated with higher levels of depressed mood. Thus, based on mother report, maternal education, and having a very low income was associated with greater difficulty, but these patterns did not hold for youth report on depressed mood – indeed the middle income group appeared to be doing better than the highest income group. Consistent across both outcomes for girls was the transition to a two-parent from a single-parent household, a finding which concurs with research on how daughters can find the transition to a step-parent household difficult (Saint-Jacques, Godbout, Drapeau, Kourgiantakis & Parent, 2018). The picture was somewhat more straightforward for boys: those with mothers with a lower secondary education had higher levels of internalising difficulties and depressed mood, but income and household structure were not associated with boys' internalising difficulties and depressed mood.

5.4.2 EXTERNALISING DIFFICULTIES AND ANTISOCIAL BEHAVIOUR

In terms of predictors of girls' externalising difficulties, as denoted by their SDQ externalising scores, parent-child relationship variables emerged as particularly significant, more so than peer-related variables. The strongest predictor of externalising problems was high mother-child conflict at Wave 2 (regardless of whether it was low or high at Wave 1), followed by high father-child conflict at Wave 2. Low closeness to mothers at Wave 2 (regardless of levels at Wave 1) was also associated with higher levels of difficulty. In contrast, increases in closeness to both mothers and fathers from Wave 1 to Wave 2 were associated with lower levels of externalising difficulties, as was an increase in maternal responsiveness, and higher disclosure to mothers and higher autonomy granting by mothers. Where mothers were low in responsiveness

across waves and fathers were low in demandingness across waves, girls had higher levels of externalising difficulties. Broadly similar patterns emerged in terms of ASB: increases in father-child and high stable mother-child conflict predicted higher ASB; as did low paternal responsiveness at Wave 2 and a decrease in mother-child closeness. As was the case for externalising difficulties, lower maternal monitoring and lower autonomy granting by mothers were associated with higher ASB.

A series of peer-related variables predicted girls' ASB and externalising difficulties, and peer variables were stronger predictors than family variables for ASB. Specifically, having more friends at Wave 2, having older friends, being a perpetrator of bullying at Wave 1 and higher levels of alienation in the peer relationship were all associated with higher levels of ASB. Of significance for externalising difficulties was being a victim of bullying at Wave 2, having lower levels of trust, and having more than five friends at Wave 2. Coming from the lowest income quintile was associated with higher externalising difficulties, while having a mother with a non-degree third-level education and coming from the middle-income quintile was associated with lower levels of ASB.

As was the case for girls' externalising difficulties, boys' difficulties were strongly predicted by quality of parent-child relationships, with high mother-child and father-child conflict at Wave 2 (regardless of conflict at Wave 1) being key predictors, as well as decreases in mother-child and father-child closeness between waves, and low levels of fathers' responsiveness across waves. Low maternal responsiveness at Wave 2 (regardless of responsiveness at Wave 1) was associated with higher ASB. Decreases in mother-son closeness and in fathers' responsiveness from Wave 1 to Wave 2 were also associated with higher ASB. Mothers' reports of lower monitoring and disclosure and boys' perceptions of less autonomy granting from fathers were associated with higher externalising difficulties. Boys' perceptions of higher maternal control were associated with higher externalising difficulties and higher ASB.

As was the case for girls, being a perpetrator of bullying, higher levels of peer alienation and having older friends were each associated with higher externalising difficulties and higher ASB, although having fewer friends at Wave 2 was associated with lower externalising difficulties, and having more friends at Wave 1 and Wave 2 were associated with higher ASB. Being a late maturer and having trust with friends were associated with lower ASB, while being an early maturer predicted higher ASB. Low maternal education was associated with higher externalising difficulties but was not associated with ASB.

The significant relationships between perpetrating bullying against another and externalising difficulties and ASB for both boys and girls is not surprising, given that bullying another constitutes an antisocial behaviour. In addition, poorer quality peer relationships, having more friends and associating with older peers have all been identified as correlates of ASB. For example, highly aggressive children tend to be rejected by their peers, but perceived alienation from peers also may exacerbate existing aggressive tendencies in youth (Dodge et al., 2003). Children who act out and are aggressive can be popular among other aggressive children (Cairns, Cairns, Neckerman, Gest & Gariepy, 1988), thus, peer rejection may also induce adolescents to associate with deviant peer groups (Dishion & Patterson, 2006) and acts of ASB and acting out tend to be committed in groups (Gatti, Trembley, Vitaro & McDuff, 2005).

As was the case for internalising difficulties, high parent-child conflict, low parent-child closeness and child report of low parental responsiveness were important predictors of externalising difficulties. Of note are the parenting processes that emerged as being associated with lower levels of externalising difficulties and ASB: mothers' reports of the extent to which their child disclosed information and mothers' monitoring of their child's behaviour emerged as potential protective processes, which concurs with existing literature on the importance of parental supervision as a strong predictor of ASB (Farrington, Coid & Murray, 2009). Of course, as noted by Stattin and Kerr (2000), parents' reports on their child's disclosure reflects something about the openness of communication in the parent-child relationship, and good communication is less likely to occur in the context of high parent-child conflict and low parent-child

closeness. The child's perception of autonomy granting from mothers and fathers was also a significant predictor of fewer difficulties, and as noted previously, the tolerance of expressions of individuality facilitates the development of emotional independence (Collins & Steinberg, 2008).

5.4.3 SMOKING, ALCOHOL CONSUMPTION AND EXPERIMENTING WITH DRUGS

Nine per cent of participants (n = 616) had previously smoked a cigarette. By far the most significant predictor of girls' smoking behaviour was being a perpetrator of bullying at Wave 2 – these individuals were almost 8 times more likely to have previously smoked. Having older friends was also significant, as was being an early maturer. In contrast, those who were late maturers were about half as likely to have previously smoked. Mothers' autonomy granting was associated with a reduced likelihood of having smoked. With respect to alcohol consumption having older friends was the strongest predictor, following by having mothers and fathers whose responsiveness was perceived to have decreased between waves, followed by being a victim of bullying. Income or household structure was not associated with girls' smoking or alcohol consumption – but maternal education was. Girls whose mothers had a lower secondary level education were about 2.2 – 2.5 times more likely to have smoked and to have consumed alcohol than girls whose mothers had higher levels of education.

Boys' smoking behaviour was most strongly predicted by being a perpetrator of bullying (3.7 times more likely), followed by having older friends (2.9 times more likely). Having low closeness with mothers, regardless of whether it was stable or increased or decreased across time, was associated with increased likelihood of smoking, as was a deterioration in father-child closeness over time (going from high to low closeness between waves), and low stable father responsiveness. In terms of boys' consumption of alcohol, again the strongest predictor was being a perpetrator of bullying and having older friends. Fathers' parenting also emerged as particularly important: having a high level of conflict at both or either waves was associated with a greater likelihood of having consumed alcohol, as was having low stable paternal responsiveness and demandingness. Having fewer than five friends was associated with a reduced likelihood of having drunk alcohol. Coming from a stable single-parent household structure was associated with an increased likelihood of smoking, while lower maternal education was associated with an increased likelihood of alcohol consumption.

Overall, 3.7 per cent of the sample (n = 263) had experimented with any drug. Combined models for boys and girls revealed that a key predictor of having experimented was being a perpetrator of bullying at Wave 2: these boys and girls were four times more likely to have experimented with any drug. Following this, having older friends was associated with a 3.4-fold increased likelihood of experimentation. Decreased maternal responsiveness from Wave 1 to Wave 2 and increased father-child conflict from Wave 1 to Wave 2, were both associated with a greater likelihood of having tried drugs. Of note, fathers' reports of their child's disclosure, and the child's perception of autonomy granting by the mother were both positively associated with a slightly decreased likelihood of having tried any drug: the more fathers perceived that their child disclosed information to them, and the more the child perceived that their mother granted them autonomy, the less likely they were to have tried any drug. Neither household income, nor maternal education was associated with the probability of having tried any drugs. However, those from stable single-parent households were twice as likely to have experimented with any drug in comparison with those from a stable two-parent household.

Together, these findings suggest that for both boys and girls, substance-use is more likely to occur when ties to family are weaker, characterised by parent-child conflict, lower levels of closeness and perceptions of a lack of parental responsiveness. Closeness and connectedness within the parent-child relationship can play an important role in protecting against substance use (Vakalahi, 2001), possibly through the promotion of necessary emotional, social and problem-solving resources and support for coping with stress that can otherwise increase the risk of substance use (Vakalahi, Harrison & Janzen, 2000). The current study findings are consistent with previous research which indicates that a strong parent-adolescent bond

has been associated with reduced levels of adolescent alcohol-related problems (Velleman, Templeton & Copello, 2005), and that low levels of family harmony (i.e. high conflict) predict substance use difficulties (Zhou, King & Chassin, 2006). However, unlike previous research, lack of parental monitoring did not predict substance use (Simons-Morton & Chen, 2005).

Being a perpetrator of bullying – a form of antisocial behaviour per se – and involvement with older peers were also key predictors of these behaviours. Indeed, alcohol and drug-use are most likely to occur in the context of older peers, who may find it easier to access alcohol or other substances and who may normalise these behaviours. Peer influence is a well-substantiated predictor of substance use by adolescents, and in particular associating with substance-using peers (Leung, Toumbourou & Hemphill, 2014). Of course, there is the potential effect of both peer influence and peer selection and the effect of peer influence may be greatly exaggerated if the effect of selection of friends are not accounted for – youth who are attracted to substance use may seek out peers who engage in these types of behaviours (Bauman & Ennett, 1996). As highlighted by the early timing or developmental readiness hypothesis, early pubertal maturation may also play a role. Early maturers may seek out older peer groups with which to affiliate, as they are marginalised by later-maturing peers from whom they are increasingly distinguished. Engels (2009) suggests that rejection from the peer group might lead to bullying and exclusion, thus increasing the need for contacts with older peers. The findings of the current study indicate that associating with older peers was the key driver of engagement in substance use, and it seems to be this mechanism rather than early puberty per se that is most significant. Notwithstanding this, early puberty was associated with increased likelihood of smoking (as well as having older peers) for boys and late puberty for girls was associated with a decreased likelihood of drinking alcohol.

5.4.4 THE ROLE OF PUBERTAL STATUS

Of particular note in the models presented in this report is that pubertal status did not often emerge as a significant independent predictor of young adolescents' emotional and behavioural difficulties, and when it did, the size of the effects was small. Early puberty per se was associated with higher levels of internalising difficulties for girls, higher ASB and a two-fold risk of consuming alcohol for boys. When considering the models that incorporated two-parent and single-parent families, early puberty was associated with higher internalising difficulties and depressed mood for girls, higher ASB for boys, and a greater likelihood of consuming alcohol for boys and girls. However, early puberty was also associated with lower internalising and externalising difficulties for boys.

Initial bivariate analyses indicated that the late maturing boys had significantly higher externalising, internalising, depressed mood and ASB scores than both the on-time and early maturing boys, though the effect sizes tended to be small. For the girls, in contrast to the boys, it was the early-maturing group who displayed poorer outcomes across the board, also with small effect sizes. The findings for girls support the early timing or developmental readiness hypothesis which posits that early maturation poses a risk for poorer outcomes, due to the mismatch between physical maturity and psychological and social maturity (Caspi & Moffitt, 1991). However, this theory is not supported by the data for boys – instead it is the late maturing boys who have higher risk of poorer outcomes. Indeed, the literature suggests that variations in the effect of pubertal timing on outcomes may be explained by accounting for other factors in one's context (Negriff & Susman, 2011). This position is supported by the findings reported here – once other factors were taken into account in the multivariate models, the effect of pubertal timing was weakened.

5.5 WHICH FACTORS ARE ASSOCIATED WITH STABILITY AND CHANGE IN SOCIAL, EMOTIONAL AND BEHAVIOURAL OUTCOMES?

The final research question considered the predictors of stability and change in social, emotional and behavioural outcomes, as indicated by the SDQ parent report. Among the key factors that predicted

sustained high SDQ risk, as well as movement into and out of SDQ risk categories were high levels of mother-child conflict, for both boys and girls. Father-child conflict also distinguished stable low risk girls from others, while father-child conflict only distinguished the stable high-risk from the stable low-risk boys. Involvement in bullying distinguished those who were low stable SDQ risk, from those who had high-to-low or low-to-high SDQ risk, and boys who were high-stable SDQ risk. More significantly, the number of friends at both waves for girls, and at Wave 1 for boys distinguished the stable low risk from the stable high risk group, where having more friends was associated with a greater likelihood of having low stable SDQ risk, pointing to the protective effect of friendships. Finally, unlike in many of the models presented previously, maternal education, income and household structure appear to underlie stability in SDQ risk, particularly for boys: boys whose mothers have a lower education level, boys from a single-parent household, or from a family that has undergone a family transition were more likely to be in the high stable SDQ risk group than the low stable SDQ risk group. Change in household structure also affected girls and contributed to an increase in SDQ risk from Wave 1 to Wave 2. Lower levels of maternal education were also associated with a greater likelihood that girls would experience high SDQ risk, at either or both waves.

5.6 CONCLUSIONS

In conclusion, the following take-home messages arise from this report:

Most young people are faring well in terms of their social-emotional and behavioural outcomes, and there was **strong stability in terms of outcomes across waves. Seven per cent of the sample displayed poor outcomes at both waves**, and it is this group which is most in need of support.

Maternal education, income quintile and household structure demonstrated some noteworthy associations with social, emotional and behavioural difficulties. Higher income levels and higher levels of maternal education were associated with low SDQ risk at both waves. Changes in household structure tended to have negative consequences, regardless of the type of transition (i.e. from one-parent to two-parent and from two-parent to one-parent). Where these transitions occurred, boys and girls had higher levels of externalising difficulties and were more likely to have high stable SDQ risk over time, while girls also had higher levels of internalising difficulties.

However, these factors did not emerge as strong and consistent predictors across the models. This suggests that **social-emotional and behavioural difficulties can affect youth across all social contexts**, and it is not just those in contexts of disadvantage who are affected. This suggests that there is need for **universal intervention and prevention programmes** that can be targeted towards all youth.

Early onset of puberty per se was not a strong predictor of outcomes. Early puberty did exert a small independent effect, but it was the association between early puberty and other factors such as having older friends that seemed to matter more. **Having older friends was associated with greater antisocial behaviour, higher levels of smoking, drinking and drug use (among boys and girls) and greater depressed mood (among girls only).** Thus, those who experience early puberty – particularly those who hang around with older youth, may be at particular risk of poorer outcomes. Thus, it is useful to think about how those who experience early puberty might best be identified and supported appropriately through the difficult transition.

The findings suggest that **involvement in bullying, both as a victim and a perpetrator, has important damaging consequences for social-emotional and behavioural well-being**. Being a victim of bullying is associated with increased depressed mood (youth report) and internalising behaviours (parent report). Being a perpetrator of bullying tends to be associated with behaviours such as drug and alcohol use and smoking, as well as young person's reports of antisocial behaviour and depressive symptoms. Thus, there is a need to identify

the specific nature of involvement in bullying as the consequences and types of intervention needed will be different. In addition, **having good quality relationships with peers is an important protective factor** (rather than having many friends, which in some contexts might elevate the risk for poorer outcomes). Considering how positive peer relationships can be promoted may be worthwhile, as well as possibly providing skill training to support youth through peer conflict and rejection.

Parenting and parent-child relationships emerged across the board as strong predictors of social-emotional and behavioural well-being. Promoting positive relationships between parents and children may go a long way to protect children from social-emotional and behavioural difficulties: managing conflict, promoting closeness in the parent-child relationships, and parental responsiveness and demandingness are worthwhile goals to pursue – in particular, **helping parents to understand the adolescent transition and how they can appropriately support adolescents' sense of autonomy is likely to yield positive outcomes,** both in terms of the parent-child relationship and in terms of youth outcomes. Parental monitoring and disclosure did not emerge as particularly strong predictors of ASB; what may matter more is how parents and children communicate with each other and the level of connectedness in the relationship.

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APPENDIX A

Table A1: Standardised regression coefficients and significance levels from regression models predicting SDQ scores among girls from all households (n = 3,154)

SDQ total	Standardised beta	Internalising	Standardised beta	Externalising	Standardised beta
Low to High M-C conflict	0.192***	Early Puberty	0.034*	Low-to-high M-C conflict	0.192***
High stable M-C conflict	0.196***	Low-to-high M-C conflict	0.129***	High stable M-C conflict	0.181***
Low-to-high M-C closeness	-0.055**	High stable M-C conflict	0.161***	Low-to-high M-C closeness	-0.052***
High-to-low M-C closeness	0.070***	Low-to-high M-C closeness	-0.033*	High-to-low M-C closeness	0.087***
Low stable M-C closeness	0.026*	Low stable M-C closeness	0.036*	M disclosure	-0.046***
M Monitoring	-0.027*	Perceived parental control	-0.052***	Low-to-high M response	-0.039**
Low-to-high M response	-0.035*	Low stable M demand	-0.031*	Low stable M response	0.031*
Low-to-high M demand	-0.036*	Perpetrator of bullying W1	0.036*	Low-to-high M demand	-0.040**
Low stable M demand	-0.033*	Victim of bullying W2	0.141***	Low-to-high F demand	0.032*
Low-to-high F demand	0.039**	Having 3-5 friends W2	-0.119***	Low stable F demand	0.042**
Low stable F demand	0.036**	Having > 5 friends W2	-0.180***	Autonomy granting M	-0.047**
Autonomy granting M	-0.032*	IPPA trust	-0.038*	Autonomy granting F	-0.038*
Autonomy granting F	-0.031*	IPPA alienation sub-scale	0.055**	Perpetrator of bullying W2	0.044**
Victim of bullying W2	0.089***	Lowest income quintile W2	0.035*	Having 3-5 friends W2	-0.029*
Perpetrator of bullying W2	0.043**	M lower secondary ed	0.067***	IPPA alienation	0.040**
Having 3-5 friends W2	-0.065*	M third-level non-degree	0.049**	Lowest income quintile W2	0.076***
Having > 5 friends W2	-0.074**	From SP to 2P hhold	0.044**	From SP to 2P hhold	0.033*
IPPA trust	-0.035*	Internalising W1	0.388***	From 2P to SP hhold	0.042**
IPPA alienation	0.044***			Externalising W1	0.490***
Lowest income quintile W2	0.101***				
2nd income quintile W2	0.042**				
3rd income quintile W2	0.047**				
4th income quintile W2	0.051**				
From SP to 2P hhold	0.039**				
SDQ Total Score W1	0.469***				
Adjusted R^2	49.1%	Adjusted R^2	33.0%	Adjusted R^2	48.9%

* p < .05; ** p < .01; *** p < .001.

Table A2: Standardised regression coefficients and significance levels from regression models predicting SMFQ scores (n = 3,153) and antisocial behaviour scores (n = 3,066) among girls from all households

SMFQ (depressed mood)	Standardised beta	Antisocial behaviour total	Standardised beta
Early maturer	0.034*	Low-to-high M-C conflict	0.043*
Low-to-high M-C conflict	0.032*	High-to-low M-C closeness	0.057**
High-to-low M-C conflict	0.039*	M monitoring	-0.072***
High stable M-C conflict	0.088***	High-to-low mother response	0.069***
High-to-low M-C closeness	0.038*	High-to-low father response	0.049**
High-to-low M response	0.038*	High-to-low mother demand	0.073***
Low stable F response	0.062***	High-to-low father demand	0.039*
Autonomy granting M	-0.099***	Autonomy granting M	-0.103***
Victim of bullying W1	0.075***	Perpetrator of bullying W2	0.071***
Perpetrator of bullying W1	-0.03*	Having 3-5 friends W2	0.089*
Victim of bullying W2	-0.033*	Having > 5 friends W2	0.150***
Perpetrator of bullying W2	0.107***	Having older friends	0.104***
Having 2-5 friends W1	-0.068**	IPPA trust sub-scale	0.116***
Having > 5 friends W1	-0.051*	Lowest income quintile	-0.037*
IPPA trust sub-scale	-0.043**	M lower secondary ed	-0.049**
IPPA alienation sub-scale	0.387***	From SP to 2P hhold	0.123***
3rd income quintile	-0.032*	Externalising W1	0.068***
From SP to 2P hhold	0.062***		
Adjusted R^2	33.3%	Adjusted R^2	14.3%

* p < .05; ** p < .01; *** p < .001.

Table A3: Standardised regression coefficients and significance levels from regression models predicting SDQ scores among boys from all households (n = 3,334)

SDQ total	Standardised beta	Internalising	Standardised beta	Externalising	Standardised beta
Early Maturer	-0.036**	Early Maturer	-0.029*	Early Maturer	-0.031*
Low-to-high M-C conflict	0.220***	Low-to-high M-C conflict	0.130***	Low-to-high M-C conflict	0.226***
High-to-low M-C conflict	-0.048***	High-to-low M-C conflict	-0.039**	High-to-low M-C conflict	-0.049***
High stable M-C conflict	0.210***	High stable M-C conflict	0.154***	High stable M-C conflict	0.191***
Low-to-high M-C closeness	-0.027*	M Disclosure	-0.063***	High-to-low M-C closeness	0.054***
High-to-low M-C closeness	0.047***	Perceived parental control	-0.050***	M Monitoring	-0.043**
M Monitoring	-0.043**	M Monitoring	-0.058***	M Disclosure	-0.038**
M Disclosure	-0.053***	Perceived parental control	-0.060***	Perceived parental control	0.030*
Low-to-high M response	0.034**	Low-to-high M response	0.041**	Low stable M demand	0.024*
Low-to-high F response	-0.037**	Low-to-high F response	-0.062***	Autonomy granting F	-0.075***
High-to-low F demand	0.035**	High-to-low F demand	0.047**	Perpetrator of bullying W2	0.033**
Autonomy granting F	-0.065***	Having 1 friend W1	-0.058*	Having 1-2 friends W2	-0.042**
Victim of bullying W2	0.043***	Victim of bullying W2	0.054***	Having 3-5 friends W2	-0.026*
Having 1 friend W1	-0.069**	Having 1 friend W1	-0.095**	IPPA alienation sub-scale	0.047**
Having 2-5 friends W1	-0.180***	Having 2-5 friends W1	-0.270***	M lower secondary ed	0.048***
Having > 5 friends W1	-0.155***	Having > 5 friends W1	-0.241***	Stable SP hhold	0.067***
IPPA alienation sub-scale	0.075***	Having 1-2 friends W2	0.066***	From SP to 2P hhold	0.047***
M lower secondary ed	0.064***	Having 3-5 friends W2	0.045**	From 2P to SP hhold	0.34**
Stable SP hhold	0.053***	IPPA alienation sub-scale	0.091***	Externalising W1	0.522***
From SP to 2P hhold	0.029*	M lower secondary ed	0.061***		
SDQ total score W1	0.492***	Internalising W1	0.441***		
Adjusted R^2	53.6%	Adjusted R^2	37.3%	Adjusted R^2	53.6%

* p < .05; ** p < .01; *** p < .001.

Table A4: Standardised regression coefficients and significance levels from regression models predicting SMFQ scores (n = 3,333) and antisocial behaviour scores (n = 3,236) among boys from all households

SMFQ (depressed mood)	Standardised beta	Antisocial behaviour total	Standardised beta
Low-to-high M-C conflict	0.040**	Early maturer	0.035*
High stable M-C conflict	0.063***	Late maturer	-0.084***
High-to-low M-C closeness	0.083***	High-to-low M-C closeness	0.056**
High-to-low M response	0.056***	High-to-low mother response	0.061***
Low stable F response	0.073***	Low stable mother response	0.098***
Autonomy granting M	-0.109***	High-to-low father response	0.053**
Victim of bullying W1	0.065***	Perpetrator of bullying W1	0.074***
Victim of bullying W2	0.092***	Perpetrator of bullying W2	0.121***
Having > 5 friends W1	-0.033*	Having 2-5 friends W1	0.087**
Having 1-2 friends W2	0.064***	Having > 5 friends W1	0.076**
Having 3-5 friends W2	0.072***	Having 1-2 friends W2	-0.109***
Having older friends	0.037*	Having 3-5 friends W2	-0.139***
IPPA trust sub-scale	-0.146***	Having older friends	0.061***
IPPA alienation sub-scale	0.322***	IPPA trust sub-scale	-0.070***
		IPPA alienation sub-scale	0.087***
		Second income quintile	-0.042*
		Externalising W1	0.105***
Adjusted R^2	29.0%	Adjusted R^2	13.4%

* p < .05; ** p < .01; *** p < .001

Table A5: P-values and odds ratios from logistic regression models predicting smoking behaviour for boys (n = 2,668) and girls (n = 2,621) from all households

Boys			Girls		
Nagelkerke R^2 = 12.4%	**Sig level**	**Odds ratio**	**Nagelkerke R^2 = 20.7 %**	**Sig level**	**Odds ratio**
Change in M-C conflict (ref low stable)	.000		Pubertal Status (ref on-time)	.001	
Low-to-high	.002	1.859	Early maturer	NS	
High-to-low	NS		Late maturer	.001	0.419
High stable	.000	2.394	Change in M-C close (ref high stable)	.000	
Change in M-C closeness (ref high stable)	.009		Low-to-high	NS	
Low-to-high	.024	1.869	High-to-low	.000	3.044
High-to-low	.010	1.678	Low stable	.047	2.835
Low stable	NS		Change in F response (ref high stable)	.000	
Change in F response (ref high stable)	.000		Low-to-high	NS	
Low-to-high	NS		High-to-low	.000	2.729
High-to-low	NS		Low stable	NS	
Low stable	.000	2.502	Change in M demand (ref high stable)	.017	
Perpetrator of bullying W1	.032	1.483	Low-to-high	NS	
Perpetrator of bullying W2	.010	2.532	High-to-low	NS	
Having older friends	.000	2.297	Low stable	.014	2.007
Change household type (ref stable 2P)	.000		Change in F demand (ref high stable)	.000	
Stable SP hhold	.000	2.572	Low-to-high	.000	2.744
From SP to 2P hhold	NS		High-to-low	NS	
From 2P to 2P hhold	NS		Low stable	NS	
			Perpetrator of bullying W1	.004	1.878
			Perpetrator of bullying W2	.002	3.412
			Having older friends	.000	2.786
			Lowest ed level M (ref degree/postg)	.000	
			Third-level non-degree	NS	
			Lower secondary only	.001	2.362

Table A6: P-values and odds ratios from logistic regression models predicting consumption of an alcoholic drink in the past year for boys (n = 2,641) and girls (n = 2,630) from all households

Boys			Girls		
Nagelkerke R^2 = 16.4%	**Sig level**	**Odds ratio**	**Nagelkerke R^2 = 21.4%**	**Sig level**	**Odds ratio**
Pubertal Status (ref on-time)	.000		Pubertal Status (ref on-time)	.007	
Early maturer	.006	1.658	Early maturer	.028	1.599
Late maturer	.038	0.593	Late maturer	NS	
Change in M-C conflict (ref low stable)	.000		Change in M-C conflict (ref low stable)	.010	
Low-to-high	.000	2.397	Low-to-high	.050	1.636
High-to-low	NS		High-to-low	NS	
High stable	.017	1.740	High stable	.003	2.138
Change in M response (ref high stable)	.003		Change in M response (ref high stable)	.000	
Low-to-high	NS		Low-to-high	.024	0.249
High-to-low	NS		High-to-low	.001	2.174
Low stable	.003	0.277	Low stable	NS	
Change in F response (ref high stable)	.000		Change in F response (ref high stable)	.000	
Low-to-high	NS		Low-to-high	NS	
High-to-low	.005	1.921	High-to-low	.000	2.653
Low stable	.000	3.043	Low stable	.017	2.093
Change in F demand (ref high stable)	.000		No of friends W2 (ref > 5)	.002	
Low-to-high	.041	1.597	3-5 friends	.018	0.600
High-to-low	NS		1 or 2 friends	.005	0.229
Low stable	.000	3.290	Having older friends	.000	5.714
Perpetrator of bullying W1	.008	2.821	Lowest ed level M (ref degree/postg)	.000	
No of friends W2 (ref > 5)	.000		Third-level non-degree	NS	
3-5 friends	.001	0.450	Lower secondary only	.001	2.509
1 or 2 friends	.001	0.223			
Having older friends	.000	3.284			
IPPA alienation	.021	1.043			
Lowest ed level M (ref degree/postg)	.006				
Third-level non-degree	.041	1.594			
Lower secondary only	.001	2.630			

Table A7: P-values and odds ratios from logistic regression model predicting experimentation with any drugs for boys and girls combined (n = 5,305) from all households

Nagelkerke R^2 = 14.5%	Sig level	Odds ratio
Change in M-C conflict (ref low stable)	.000	
Low-to-high	.000	2.653
High-to-low	NS	
High stable	.000	2.751
Change in M response (ref high stable)	.000	
Low-to-high	NS	
High-to-low	.000	2.544
Low stable	NS	
Perpetrator of bullying W2	.001	3.002
Having older friends	.000	2.968
IPPA Alienation	.000	1.088
Change household type (ref stable 2P)	.015	
Stable SP hhold	.002	2.058
From SP to 2P hhold	.257	
From 2P to 2P hhold	.677	

Table A8: P-values and odds ratios from multinomial logistic regression model predicting categorisation of SDQ risk across waves (reference category, not at risk at any age) for girls from all households (n = 2,649)

Low stable SDQ risk vs High-to-low SDQ risk		Low stable SDQ risk vs Low-to-high SDQ risk		Low stable SDQ risk vs High stable SDQ risk	
Predictor (sig level)	**Odds Ratio**	**Predictor (sig level)**	**Odds Ratio**	**Predictor (sig level)**	**Odds Ratio**
Child report control**	0.963	M-C conflict: high stable vs low stable***	0.170	M-C conflict: high stable vs low stable***	0.015
M-C conflict: high stable vs low stable***	0.113	M-C conflict: high stable vs high to low***	0.095	M-C conflict: high stable vs low to high***	0.123
M-C conflict: high stable vs low to high***	0.187	W2 victim of bullying***	3.263	M-C conflict: high stable vs high to low***	0.085
F response: low stable vs high stable*	2.072	W2 perpetrator of bullying*	3.097	M-C close: low stable vs high stable**	0.203
W1 no of friends: 0-1 friend vs 2-5 friends**	0.412	W2 income quintile: lowest vs highest***	0.134	M-C close: low stable vs low to high*	0.158
W1 no of friends: 0-1 friend vs > 5 friends***	0.206	W2 income quintile: lowest vs 4th*	0.435	M-C close: low stable vs high to low**	0.172
W1 perpetrator of bullying*	1.628	W2 income quintile: lowest vs 3rd***	0.323	F demand: low stable vs low to high*	0.355
W2 perpetrator of bullying **	4.349	W2 income quintile: lowest vs 2nd*	0.481	W1 no of friends: 0-1 friend vs 2-5 friends***	0.241
W2 income quintile: lowest vs highest*	0.523	W2 M ed level: lower sec vs LC/ non-degree*	0.611	W1 no of friends: 0-1 friend vs > 5 friends**	0.210
W2 income quintile: lowest vs 4th**	0.441	Change hhold: stable 2P vs from 2P to SP**	3.135	W2 no of friends: 0-2 friends vs 3-5 friends***	0.145
W2 income quintile: lowest vs 3rd**	0.384	Change hhold: stable 2P vs from SP to 2P*	2.970	W2 no of friends: 0-2 friends vs > 5 friends***	0.209
W2 income quintile: lowest vs 2nd**	0.473	Change hhold: stable 2P vs stable SP**	2.521	W1 victim of bullying*	1.951
W2 M ed level: lower sec vs degree/pg**	0.363			W2 victim of bullying*	2.500
W2 M ed level: lower sec vs LC/ non-degree*	0.575			W2 M ed level: lower sec vs LC/ non-degree*	0.476
				Change hhold: stable 2P vs from SP to 2P***	9.623

* p < .05; ** p < .01; *** p < .001; Nagelkerke R^2 = .407.

Table A9: P-values and odds ratios from multinomial logistic regression model predicting categorisation of SDQ risk across waves (reference category, not at risk at any age) for boys from all households (n = 2,668)

Low stable SDQ risk vs High-to-low SDQ risk		Low stable SDQ risk vs Low-to-high SDQ risk		Low stable SDQ risk vs High stable SDQ risk	
Predictor (sig level)	**Odds Ratio**	**Predictor (sig level)**	**Odds Ratio**	**Predictor (sig level)**	**Odds Ratio**
M-C conflict: high stable vs low stable***	0.112	Autonomy granting F***	0.845	Autonomy granting M**	1.120
M-C conflict: high stable vs low to high***	0.182	M-C conflict: high stable vs low stable***	0.072	M-C conflict: high stable vs low stable***	0.022
W1 no of friends: 0-1 friend vs 2-5 friends**	0.428	M-C conflict: high stable vs low to high**	0.442	M-C conflict: high stable vs low to high***	0.230
W1 no of friends: 0-1 friend vs > 5 friends**	0.341	M-C conflict: high stable vs high to low**	0.011	M-C conflict: high stable vs high to low***	0.206
W1 victim of bullying**	1.736	W2 victim of bullying***	2.769	M-C closeness: high stable vs low stable*	0.409
W2 income quintile: lowest vs highest**	0.407	Having older friends**	2.307	W1 no of friends: 0-1 friend vs 2-5 friends***	0.183
W2 M ed level: lower sec vs degree/pg***	0.300	W2 income quintile: lowest vs 4th **	0.417	W1 no of friends: 0-1 friend vs > 5 friends***	0.050
W2 M ed level: lower sec vs LC/ non-degree**	0.552			W1 victim of bullying**	2.055
				W2 M ed level: lower sec vs degree/pg***	0.141
				W2 M ed level: lower sec vs LC/ non-degree**	0.277
				Change hhold: stable 2P vs from 2P to SP***	2.160
				Change hhold: stable 2P vs from SP to 2P***	3.343
				Change hhold: stable 2P vs stable SP***	4.306

* p < .05; ** p < .01; *** p < .001; Nagelkerke R^2 = .400.

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