

Long-term impact of childhood bereavement

Preliminary analysis of the 1970 British Cohort Study (BCS70)



Samantha Parsons

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“Every 22 minutes a child in Britain is bereaved of a parent which equates to 24,000 new children each year learning to live with a powerful range of confusing and conflicting emotions. Bottled up, these emotions can have damaging consequences in later life for the individual, their family and society as a whole” (Winston’s Wish)¹.

Summary

This preliminary analysis of data from the 1970 British Cohort Study was undertaken by the Childhood Wellbeing Research Centre as part of the ‘fast response’ programme of work to inform policy development.

Using longitudinal data from the 1970 British Cohort Study, this analysis suggests there may be a few longer-term effects from childhood bereavement. There are some correlations of bereavement with a range of disadvantages in adult life. However, much of the initial statistical association between growing up in a bereaved family and having poorer adult outcomes at age 30 than children from intact families was found to be related to pre-existing differences in characteristics of their families of origin. Children experiencing other forms of family disruption may suffer more extensive influences on their ability to negotiate a successful transition to adult life.

After controlling for family background characteristics from the time of birth, childhood bereavement was found to be associated with men being less likely to be employed at age 30. For women, experiencing bereavement in childhood compared with growing up in an intact family, was found to be associated, at the margins of significance, with a range of disadvantages; failing to gain any sort of qualification, being less likely to be employed at age 30, reporting symptoms associated with depression and with smoking cigarettes.

Other forms of family disruption in childhood were also found to be statistically associated with a series of disadvantages in adult life. Compared with children from intact families, both boys and girls from disrupted families had a significantly lower chance of gaining a degree qualification, and being employed at age 30. They were also more likely to smoke cigarettes and report symptoms of depression, and, if women, more likely to be in partly skilled or unskilled occupations at age 30. Women from disrupted families were also less likely to have a qualification by this age than women from disrupted families; the men were less likely to be employed in a professional or managerial occupation.

¹ <http://www.winstonswish.org.uk/page.asp?section=0001000100040005&pagetitle=Facts+and+figures>

Background

There is a body of evidence suggesting that for some children there can be a profound impact on their life from the loss of a parent at the time of the bereavement, as reviewed in Akerman and Statham (2011)². Case-study research suggests this impact can be felt throughout an individual's life, but less is known about how this emotional upheaval in childhood influences achievement in the different domains of adult life.

To investigate the long-term impact of childhood bereavement, this preliminary analysis uses data from the 1970 British Cohort Study (BCS70) first to describe some of the characteristics of bereaved children and their families and second to investigate the correlates of childhood bereavement with measures of adult well-being. Measures of well being outcomes for adults were available at age 30, namely educational qualifications obtained, general health, mental health, and employment status.

The research analyses carried out and reported in this Working Paper are based on longitudinal information provided by 11,000+ adults who were born in 1970 and were members of the BCS70 cohort study who were interviewed at age 30. Fifty-one per cent of these cohort members were female.

Three groups were identified and used in the analyses. Children experiencing bereavement were identified, using survey questions and procedures described in the Appendix. Given the known influence of family disruption on children's educational, behavioural and other psycho-social outcomes, children who experienced some other type of family disruption between birth and age 16 have also been identified. Children who experienced bereavement can be compared with those who experienced other family disruptions, and with those whose lives were relatively undisturbed. Further details about the identification of all groups are provided in the Appendix.

Bereaved children were those who had experienced the death of a mother or father by the age of 16. This group constituted 5 per cent (N=534) of the available sample. Of these, 155 children had experienced the death of their mother, 393 the death of their father and 14 the death of both parents (see Appendix Table A1).

Disrupted refers to the child's mother or father having separated, or divorced by the time they were age 16 or a change taking place to a parental figure during their childhood (eg. grandmother, step-parent, sibling, etc). This group constituted 15 per cent of the sample (N=1726). Where children who had experienced this form of

² Akerman R. and Statham J. (2011) *Childhood bereavement: a rapid literature review of educational and psychological outcomes and the effectiveness of interventions*. Report to the Department of Education and Working Paper in Childhood Wellbeing Research Centre, www.cwrc.ac.uk

disruption had also experienced bereavement, they were included in the bereaved rather than in this *disrupted* group (see Appendix Table A2).

Intact refers to the child growing up, to age 16, living with both natural or adopted parents throughout their childhood. This group constituted 80% (N=8994) of the sample. They provide a comparison group of children who were not bereaved and did not have a disrupted family life in childhood.

The first stages of this investigation documented the characteristics of the above three main groups of BCS70 cohort members. Because we have data on this cohort starting from the time of their birth, it is possible to document the groups' characteristics from around the time of their birth, from when they were aged 16 and lastly from when they were aged 30. Boys and girls were examined separately. Examining the characteristics of these groups before they experienced bereavement helps us to see whether they were already a different group of children. We will be less likely, then, to draw erroneous conclusions about the potential effects of bereavement on children. However, a full and rigorous investigation of the causal effects of bereavement on children is outside the narrow scope of this preliminary investigation.

Five per cent of girls and four per cent of boys in the sample had experienced the death of a parent. Sixteen per cent of girls and 15 per cent of boys had experienced some other parental disruption by the time they were 16. Further details of the characteristics of these three groups of BCS70 cohort members are given in the Appendix.

Other family and personal factors are not controlled for during the first, descriptive stage of the report. Multivariate analyses were also carried out to probe further into the statistical correlations between childhood experiences and measures of adult outcomes at age 30.

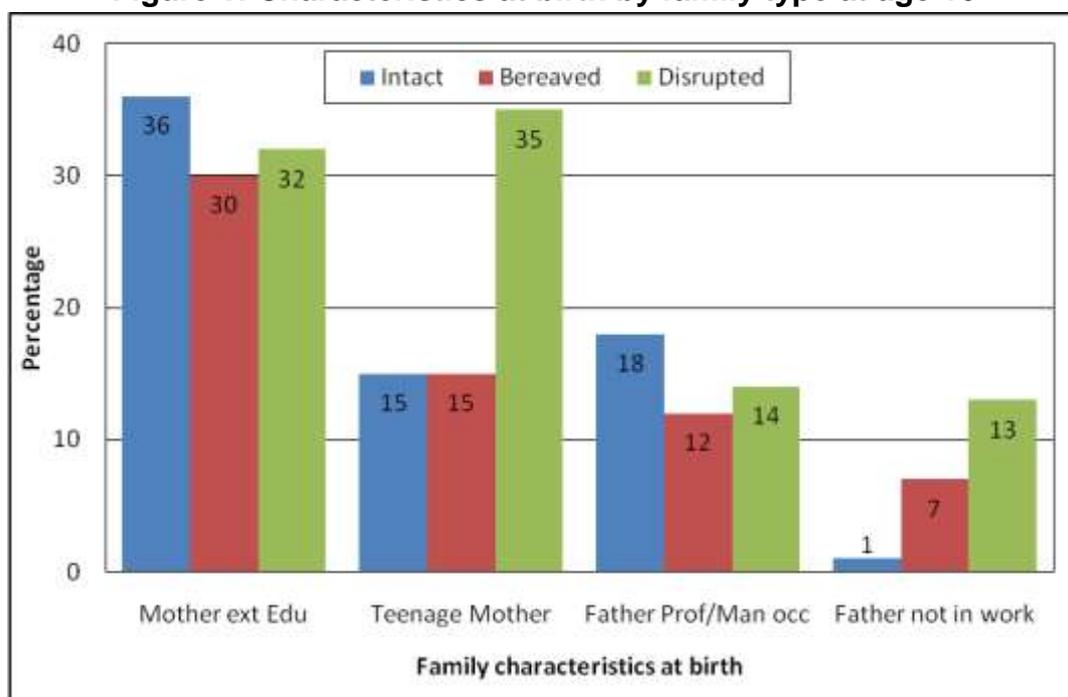
Characteristics at birth

Children growing up in bereaved families were less likely than children in intact families to have a mother or father with some experience of extended education (Figure 1). Thirty per cent of bereaved children, 36% of children in intact families and 32% children in disrupted families had a mother who experienced some extended education. Similar percentages of fathers in these groups had some form of extended education. Boys growing up in bereaved or disrupted families were less likely than girls to have a mother or father who had experienced some form of extended education (Appendix Table A4). The extent to which mothers or fathers had extended education did not vary by the sex of the child among the children in intact families (Appendix Table A4).

Bereaved children and those growing up in intact families had the same percentage of mothers who gave birth in the teenage years (15%) (Figure 1). However, children who grew up in a disrupted family were far more likely to have a mother who had her first child as a teenager (35%).

Lower percentages of children in bereaved (12%) and disrupted (14%) families had a father in a professional or managerial occupation when they were born than was the case in intact families (18%). Children in bereaved (7%) and disrupted (13%) families were also more likely than those in intact families (1%) to have fathers who were not working around the time of their birth (Figure 1).

Figure 1: Characteristics at birth by family type at age 16



Key: 'Ext edu' – Experienced some form of extended education by time of birth:

'Father Prof/Man occ' – father in a professional or managerial occupation at the time of birth.

Outcomes and characteristics of the child by age 16

Education

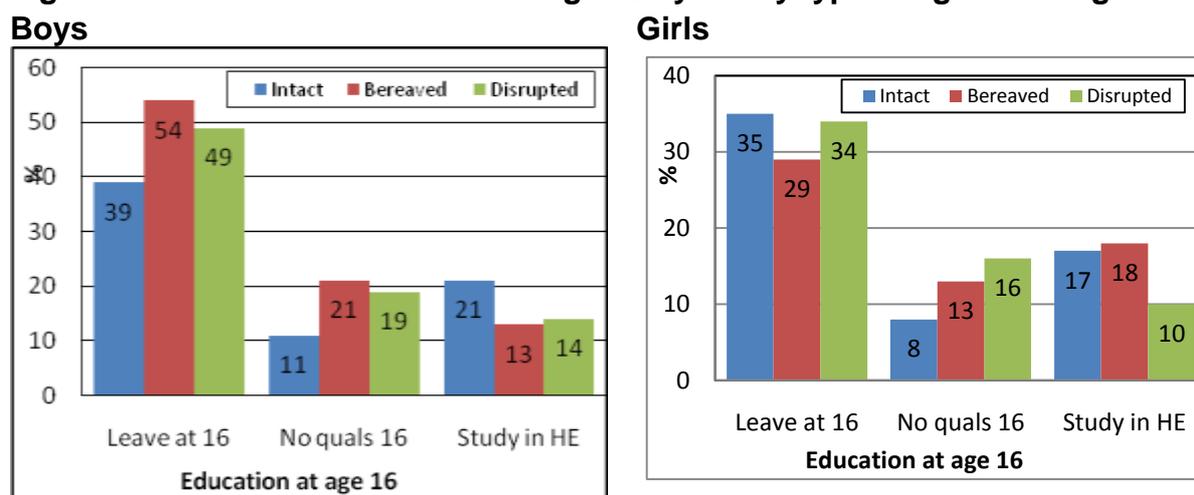
Children in bereaved or disrupted families were both more likely to leave full-time education at age 16, and less likely to go on to attain any qualifications at age 16 (Appendix Table A5).³ Children in bereaved and particularly disrupted families were also more likely to express lower educational aspirations for the future (Appendix Table A5). Sixteen per cent of bereaved children and 11% of children experiencing a family disruption said they wanted to be studying in higher education in five years time compared with 19% of children in intact families.

³ Note the reduced sample sizes for information collected at age 16 in Table A5 and A6 in the Appendix. Much of the information collected from the teenagers themselves was administered at school and there was a teacher strike at the time.

In general, teenage boys were more likely than the girls to want to leave full-time education at 16, and to have no educational qualifications at age 16 (Appendix Table A6). However, boys were more likely than girls to want to be studying in higher education in 5 year's time (Appendix Table A6).

When examined by type of family, there were some differences between teenage boys and girls' aspirations and achievements (Figure 2). Boys in bereaved families (54%) were more likely than those in disrupted families (49%) and intact families (39%) to want to leave full-time education at age 16. Boys in bereaved families (21%) and disrupted families (19%) were both more likely to have gained no qualifications at age 16 than boys from intact families (11%). Boys in both bereaved families (13%) and disrupted families (14%) were also both less likely than those in intact families (21%) to aspire to participate in higher education in the future. The patterns for girls was different. Girls in bereaved families (29%) were less likely than those in both disrupted families (34%) and intact families (35%) to want to leave full-time education at age 16. Girls from bereaved families (13%) were less likely than girls in disrupted families (16%), but more likely than those in intact families (8%) to achieve no qualifications at age 16. Girls in bereaved families (18%) like those in intact families (17%) were more likely than those in disrupted families (10%) to aspire to study in higher education in future. For education and aspirations, boys in bereaved families showed the most educational disadvantage. However, girls in bereaved families did not always show similarities with their peers growing up in disrupted families; nor were the bereaved children always similar to those growing up intact families.

Figure 2: Educational outcomes at age 16 by family type at age 16 and gender



Key: Study in HE – studies in higher education by age 30

Retrospective information was collected at age 30 about school experiences, in particular, about whether individuals remembered ever playing truant from school or ever being suspended from school. The men from bereaved families (58%) were

slightly more likely than men from intact families (54%) to report having played truant from school (Appendix Table A6). However men from disrupted families were the most likely to say they had played truant from school (70%). Reports of being suspended from school showed a similar pattern, a higher percentage among men from disrupted families (24%) than from the other types of families. But being suspended from school was a lot less common than playing truant (Appendix Table A6).

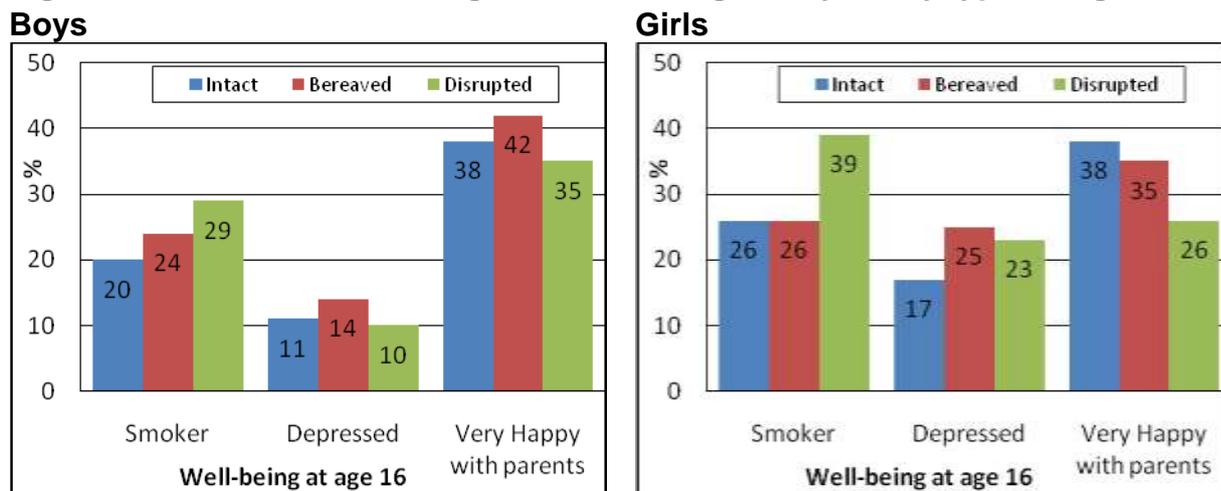
Women were generally less likely than men to report at age 30 that, earlier in their lives, they had played truant from school or been suspended from school (Appendix Table A6). Fifty per cent of women from bereaved families reported they had played truant from school, and 6% that they had been suspended (Appendix Table A6). As was the case for men, women from disrupted families were the most likely to have played truant (57%) or report being suspended from school (9%) and women from intact families the least likely (43% played truant, 5% were suspended).

Health and well-being

Over one third (37%) of all BCS70 children said they were 'very happy' to be living with their parents at age 16, the percentage being lower among children in disrupted families (30%) (Appendix Table A5). Higher percentages of children in bereaved (16%) and disrupted (15%) families said they were 'somewhat unhappy' living with their parents, than the 11% of children in intact families who gave this response. Children in disrupted families (35%) were more likely to say they smoked cigarettes at age 16 than either children in bereaved families (25%) or intact families (23%). Children who had experienced a parental bereavement (22%) were the most likely to show symptoms of depression at age 16, children in intact families the least likely (14%).

In terms of early signs of poor health behaviour and emotional well-being it is established that girls tend to try smoking earlier than boys and also experience more symptoms of depression as assessed by the Malaise scale. Sixteen year olds girls in the BCS70 cohort sample were more likely than boys to say they smoked cigarettes by age 16 in all three family types (Figure 3). Boys (29%) and girls (39%) in disrupted families were the most likely of all groups to report they smoked cigarettes (Figure 3, Appendix Table A6). Also girls (18%) were more likely than boys (11%) to report symptoms of depression at age 16. This was the case in each family group, with boys (14%) and girls (25%) growing up in a bereaved family the most likely of all to report symptoms of depression (Figure 3).

Figure 3: Health and well-being outcomes at age 16 by family type and gender



Outcomes and characteristics at age 30

We now turn to examine differences in longer-term outcomes for cohort members, given their family experiences earlier in life. The information reported in this section was obtained from interviews with BCS70 cohort members when they were aged 30. Results are discussed separately for men and women.

Men

Gaining a degree level qualification (NVQ level 4 or 5) between the ages of 16 and 30 was most common for men growing up in intact families (35%) or bereaved families (32%) and lower for men from disrupted families (23%) (Appendix Table A7).⁴

Lower percentages of men from bereaved (84%) and disrupted (83%) families reported being in full-time employment at the age 30 BCS70 interview than men growing up in intact families (90%) (Appendix Table A7). Consequently, men from bereaved and disrupted families were more likely than those from intact families to be unemployed or permanently sick at the age 30 BCS70 interview (Figure 4a). Among those men employed at age 30, 43% of men from intact families held a professional or managerial occupation compared with 37% of men from bereaved and 34% from disrupted families (Figure 4a). A higher proportion of men from bereaved families (17%) were in partly skilled or unskilled manual work, compared to men from disrupted (13%) or intact (13%) families.

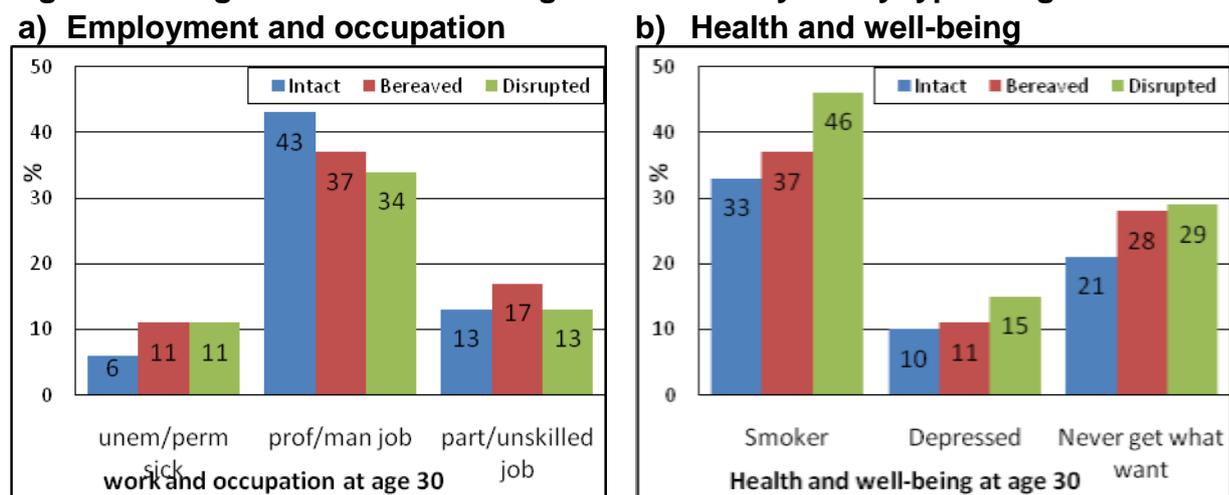
Men from bereaved families (27%) and those from disrupted families (29%) were slightly less likely than men from intact families (32%) to report 'excellent' health at age 30. Consequently higher proportions of men from bereaved and disrupted families report their general health as 'fair' or 'poor' compared with men from intact families.

⁴ Note: sample sizes vary substantially for information collected at age 16 and age 30.

Men from bereaved (37%) and disrupted (46%) families had higher rates of smoking cigarettes at age 30 compared with men from intact families (33%) (Figure 4b).

Men from bereaved families (28%) and from disrupted families (29%) were more likely to feel that they ‘never seem to get what they want out of life’ than those from intact families (21%) (Figure 4b). Men from disrupted families were also more likely to report a high number of symptoms associated with depression than men from intact and from bereaved families (Figure 4b).

Figure 4: Long-term outcomes at age 30 for men by family type at age 16



Key: ‘unem/perm sick’ – recorded as unemployed or permanently sick at age 30 contact
 ‘Prof/Man job’ – in a professional or managerial occupation at age 30 contact
 ‘Part/unskilled job’ – either in partly skilled or unskilled job at age 30 contact.

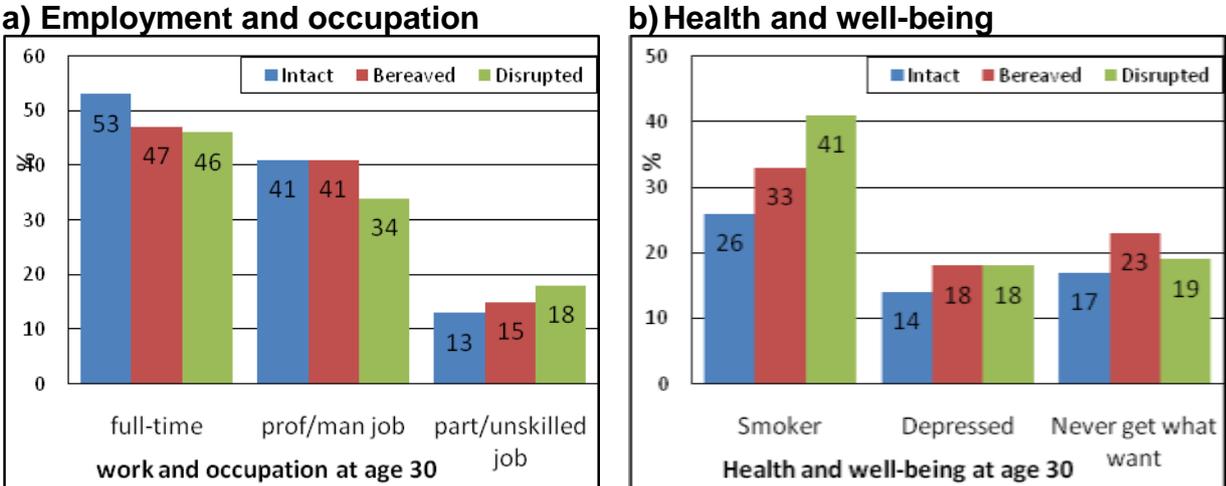
Women

Higher percentages of women from bereaved (18%) or disrupted (18%) families continued to hold no qualifications at age 30 compared to 13% in intact families (Appendix Table A8). However, one third of women from both bereaved (35%) and intact (34%) or families held a degree level NVQ4 or NVQ5 qualification compared with just 23% of women from disrupted families (Appendix Table A8).

Seventy per cent of women from both bereaved and disrupted families were in full-time or part-time employment at age 30, lower than for women from intact families at 79% (Appendix Table A8). Women from bereaved (20%) or intact families (18%) were less likely than those from disrupted families (24%) to be full-time home carers. Among those women in paid work, 41% of women from both bereaved and intact families held a professional or managerial occupation compared to 34% of women from disrupted families. Consequently, employed women from disrupted families were more likely to be working in partly skilled or unskilled manual work compared to those from bereaved or intact families (Figure 5a).

There were no differences by type of family background in the proportion of women reporting ‘excellent’ health (Appendix Table A8). However, women from intact families were slightly less likely to report their health as being ‘fair’ or ‘poor’ compared with women from bereaved or disrupted families (Appendix Table A8). As found for men, higher percentages of women from bereaved (33%) and disrupted (41%) families were smokers than was the case among women from intact families (26%) (Figure 5b). Approximately one quarter of women from bereaved families (23%) reported feeling that they ‘never seem to get what they want out of life’. This percentage was lowest among women from intact families (17%) and from disrupted families (19%) (Figure 5b). Finally, women from bereaved (18%) and disrupted (18%) families reported a high number of symptoms associated with depression compared with 14% of women from intact families (Figure 5b).

Figure 5: Long-term outcomes at age 30 for women by family type at age 16



Key: ‘Full-time’ – working full-time at age 30 contact
 ‘Prof/Man job’ – in a professional or managerial occupation at age 30 contact
 ‘Part/unskilled job’ – either in partly skilled or unskilled job at age 30 contact.

Summary of descriptive findings

The descriptive statistics for BCS70 cohort members from the three groups of family experiences suggested that children from bereaved or disrupted families experienced a somewhat increased level of socio-economic disadvantage at birth in comparison with children from intact families and that these discrepancies continued – and in some instances became more pronounced by age 30.

Education

Educational experiences at age 16 reveal lower attainment and aspirations for continued learning and more behavioural problems in the shape of truancy and suspension from school for children from bereaved and disrupted families. However, the negative impact of childhood bereavement or disruption on these educational measures was far more apparent for boys, particularly those from a bereaved family.

By age 30, the discrepancy in proportions having qualifications had reduced although those from a disrupted family now exhibited most disadvantage.

Employment

Fewer men and women from a bereaved or disrupted family were in full-time or part-time employment at age 30. Men from bereaved and disrupted families had a higher incidence of unemployment and permanent sickness; more women from disrupted families were full-time home carers. Among those in employment, least likely to be in Professional or Managerial occupations were men and women from a disrupted family. Men and women from bereaved families were the most likely to work in partly skilled or unskilled manual jobs.

Health and well-being

Children from bereaved – and particularly disrupted – families had increased rates of teenage smoking compared with children growing up in intact families, with differences remaining apparent when they reached age 30. Symptoms of depression at age 16 were more likely among bereaved than among children from intact families and among girls from a disrupted family. By age 30, women from bereaved and men and women from disrupted families had higher rates of depression than those from intact families. Growing up in a bereaved family and being a man from a disrupted family also increased the feeling that they ‘never get what they want out of life’. The experience of poor or fair physical health at age 30, but not excellent health, was also slightly higher among men and women from bereaved and disrupted families compared with those from intact families.

The correlates of childhood bereavement and family disruption with adult outcomes at age 30

A series of multivariate logistic regression analyses were carried out to assess whether the differences between groups described above were statistically significant after taking some of their other characteristics into consideration. Also multivariate analysis helps to determine whether the associations discussed between childhood bereavement or a family disruption and later outcomes could potentially be explained by individuals’ other broader family circumstances or personal characteristics. The results are discussed in terms of the ‘odds ratio’ (OR) or the relative odds of a particular outcome measure (e.g.) having no qualification at age 30, being associated statistically with the experience of childhood bereavement (or other family disruption), in comparison with a ‘reference category’, i.e. being part of an intact family, once other measures in the model have been controlled for. The baseline OR is set as 1.0, where the ‘effect’ on the dependent variable of, for example, being from a bereaved family would be the same as that of the reference group, being from an intact family. Thus an OR significantly greater than 1.0 indicates that the being from a bereaved family has a significant positive association with the outcome in question and an OR significantly

less than 1.0 indicates a significant negative association with the outcome. Further explanation on interpreting odds ratios is provided in the Appendix.

The seven age 30 outcomes used as dependent variables in a set of models were:

- No qualifications by age 30
- NVQ4 or NVQ5 qualifications by age 30
- Employed at age 30
- Professional or Managerial occupation at age 30
- Partly skilled or unskilled manual job at age 30
- Symptoms of depression at age 30
- Being a smoker at age 30

The approach to estimating models for each of the above outcome measures was the same in all cases. As a first stage, only the two dummy indicators, childhood bereavement and other family disruption, were entered as potential explanatory variables. This was to check whether these variables showed significance in comparison with the reference group, intact family, when no other explanatory variables were entered. The second stage was to include a number of other explanatory variables. This enabled us to see whether significant associations found at the first stage could be eliminated and therefore explained by other characteristics of these children and their families. The measures included in the second stage of modelling to act as controls were:

- Teenage motherhood of BCS70 cohort child's parent
- BCS70 cohort child's mother's age of leaving full-time education
- Cohort child's father's occupation at child's birth

in addition to

- Whether experienced childhood bereavement
- Whether experienced family disruption.

It is important to control, as these variables do, for ways in which bereaved families differed from intact families from around the time of their birth, even before their experience of bereavement. This Working Paper, showed there were differences between bereaved, intact and disrupted families at this early stage. If these early differences are not controlled we are in danger of attributing to the experience of bereavement, potential effects that were due to pre-existing differences.

No qualifications by age 30 outcome

Before other controls were added, the results suggest that BCS70 men and women experiencing childhood bereavement or another family disruption were significantly more likely than those in intact families to have no qualifications at age 30. After controls were added, the significance of being a bereaved family compared to an intact family largely disappeared. The earlier significance of growing up in a bereaved family was therefore explained by the other characteristics of bereaved families. Only

in the case of women growing up in a bereaved family is there a relationship on the margin of being significant (at 0.1 level) after controls were added. For those growing up in a disrupted family, the significant association with having no qualifications by age 30 was retained for women after controls were added (OR 1.26, p.041) but only on a weaker (0.1) test of significance level for men (OR= 1.25, p=0.066).

Gaining a degree level (NVQ4 or 5) by age 30 outcome

Before other controls were added, the results suggest that BCS70 men and women growing up in a bereaved family and in a disrupted family were significantly less likely than those in intact families to have attained an NVQ4 or NVQ5 qualification by age 30. After family background controls were added, there was no significant difference on gaining a degree level qualifications between growing up in a bereaved family and being in an intact family.

However, the strong and significantly lower chance of gaining a degree level qualification when growing up in a disrupted family compared to an intact family remained after family background measures were included in the model for both men (OR=0.70, p=0.001) and women (OR =0.65, p=0.000).

Being employed at age 30 outcome

Before other controls were added, the results suggest that BCS70 men and women growing up in a bereaved family or in a family experiencing other disruptions were significantly less likely to be employed at age 30.

The significant difference, making being employed at age 30 less likely for someone from a bereaved family compared to an intact family, remained after adding all other measures into the model. The results were stronger for men (OR=0.55, p=0.003) and only on the margins of being significant for women (OR=0.78, p=0.082).

The significant and strong difference, making being employed at age 30 less likely for someone from a disrupted family compared to an intact family, remained after adding all other measures into the model.

Being in a professional or managerial occupation at age 30 outcome.

Before other controls were added, the results suggest that BCS70 men and women growing up in a bereaved family were not significantly more likely than those in intact family to be in a professional or managerial job at age 30.

Before other controls were added, men and women growing up in a disrupted family were significantly less likely than those in intact family to be in a professional or managerial job at age 30. After other family background controls were added, the significant difference between growing up in a disrupted family compared to an intact family remained for men (OR=0.79, p=0.020), but was on the margins of being significant for women (OR 0.83, p.0.75). It was less likely, therefore that that men from

disrupted families would hold a professional or managerial occupation at age 30 compared to men from intact families.

Being in a partly skilled or unskilled job at age 30 outcome.

Before other controls were added, the results suggest that BCS70 men and women growing up in a bereaved family were not significantly more likely than those in an intact family to be in a partly skilled or unskilled job at age 30.

Before controls were added, BCS70 men and women growing up in disrupted families were found to be significantly more likely to be in a partly skilled or unskilled job at age 30 than those from intact families. After family background controls were added only women from disrupted families continued to be significantly more likely than those from intact families to be in a partly skilled or unskilled job at age 30 (OR=1.24, $p=0.045$).

Symptoms of depression at age 30 outcome

Before controls were added, BCS70 men and women experiencing childhood bereavement and men and women from a disrupted family were significantly more likely than those from intact families to have symptoms associated with depression at age 30.

After controls were added the significant difference between men from a bereaved family and those from intact families was removed. For women the difference between growing up in a bereaved family compared with an intact family declined to be only at the margins of significance (OR=1.32, $p=0.097$).

After controls were added, the significant difference for men and women growing up in a disrupted family compared with men (OR=1.55, $p=0.000$) and women (OR 1.25, $p.042$) respectively growing up in an intact family remained strong. It was found to be more likely, therefore, that men and women growing up in a disrupted family would express symptoms of depression at age 30 than men and women respectively who grew up in an intact family.

Smoking cigarettes at age 30 outcome

Before controls were added, BCS70 women experiencing childhood bereavement were found to be significantly more likely to smoke at age 30 than women growing up in intact families. There was no significant association between childhood bereavement and smoking for men.

After family background controls were added, the earlier significant difference between women growing up in a bereaved family and those from intact families was reduced to be only at the margin of significance (OR=1.31, $p=0.055$).

Before controls were added, BCS70 men and women experiencing a family disruption in childhood were significantly more likely to smoke at age 30 than those from intact families..

After controls were added, there was still a strong and significant correlation such that both men and women from disrupted families were more likely than those from intact families to be smoking cigarettes at age 30 (OR=1.65, p=0.000 men; OR=1.75, p=0.000 women).

The significant relationships are summarised in Table 1.

Table 1: Significant associations between childhood bereavement and other family disruption on selected age 30 outcomes

	Childhood bereavement		Other family disruption	
	Men	Women	Men	Women
No qualifications by age 30		★	★	★★
NVQ4 or NVQ5 qualification			★★★	★★★★
Employed at age 30	★★★	★	★★★★	★★★
Professional or managerial occupation at age 30			★★	★
Partly skilled or unskilled job				★★
High number of symptoms of depressed at age 30		★	★★★★	★★
Smoker at age 30		★	★★★★	★★★★

Significance level: ★★★★★ <p.001; ★★★ <p.01; ★★ <p.05; ★ <p.1

Concluding remarks

The analysis reported in this Working Paper found that BCS70 children experiencing bereavement over the first 16 years of their lives had some characteristics, from around the time of their birth, that distinguished them from children who later went on to have an intact family experience or alternatively a disrupted family experience. This is interesting in itself. But it was important to control for such differences in investigating whether there were longer term effects from being bereaved in childhood. It is interesting to note, therefore, the effects of adding such controls. Before controls were added, growing up in a bereaved family was significantly associated with a wide range of poorer and disadvantaged outcomes at age 30. However, after adding controls, the majority of these poorer outcomes were explained by these pre-existing family characteristics from around the time of the child’s birth. This was particularly the case for men. For women, the significance of a bereaved family compared with an intact family on each of the poor outcome measures was reduced below the most usual criterion level used to determine significance. It is possible therefore that a large sample may reinstate the significance of these relationships. But for men, and even for women, the pre-existing family characteristics also help to explain a substantial part of the uncontrolled ‘effects’. There are a few

outcomes where the experience of bereavement retained its significance, after controls were added, as outlined below.

This preliminary research suggests that childhood bereavement is associated with at least one long-term disadvantage for men, and possibly more for women. For men they were less likely than those from intact families to be employed at age 30. For women there are a large number of potential socio-economic disadvantages evident at age 30, for example, having no qualifications, not being employed at age 30, having symptoms of depression and smoking cigarettes. However, once other family background characteristics were controlled, the significance of having a bereaved family compared to an intact family could not be confirmed at the usual levels of statistical significance in the case of all of these outcomes.

The results suggested that experiencing family disruption over childhood probably has a greater number of associated disadvantages on a child's ability to negotiate a successful transition to adult life. Growing up in a disrupted family was significantly associated at age 30 with lower chances than growing up in an intact family of being employed, having any *or* higher qualifications, and with holding a professional or managerial occupation. It also increased the likelihood for women of working in unskilled or partly skilled jobs. Men and women from disrupted families were also more likely than those from intact families to smoke cigarettes and have a high number of symptoms associated with depression at age 30.

This analysis has concentrated on the death of a parent between birth and age 16. Within the short time available, it was not possible to look more specifically at whether the bereavement was of a mother or father or when the bereavement occurred. With more time and effort, these additional dimensions of the correlates of being bereaved could be analysed. However, comparison with experiences of other forms of family disruption would be complicated by the fact that some children will have experienced both bereavement and other forms of family disruption. In order to carry out more age-specific analyses, taking into account both bereavement and other family disruption experiences, a more careful classification would need to be constructed. There is considerable potential within the cohort datasets for further analyses of the impact of childhood bereavement, depending on the particular questions that further research would be required to address.

Appendix

The data

The 1970 British Cohort Study (BCS70) is one of four British birth cohort studies. They are very rich and detailed resources that can be used to investigate the impact of early life circumstances and experiences on later outcomes. BCS70 gathered information on all 17,281 babies born in one week in 1970. Since 1970 there have been seven follow-up surveys, with the scope of enquiry broadening from a strictly medical focus at birth, to encompass physical and educational development at the age of five, physical, educational and social development at the ages of ten and sixteen, and then to include economic development and other wider factors at 26, 30, 34 and most recently at age 38. The other British birth cohort studies are the 1946 National Survey of Health and Development (NSHD)⁵, the 1958 National Child Development Study (NCDS) and the Millennium Cohort Study (MCS)⁶.

The sample

As the focus of the research is on adult outcomes, the report is based on the 11,261 respondents who took part at age 30. These respondents were asked if their mother and father were alive and if not, at what age they died. Less than 1% did not know or did not answer about their mother, less than 2% did not know or did not answer about their father. For these respondents, longitudinal information was used to clarify, where possible, if their mother or father had died and at what age this happened. Additional checking found that a few respondents reported their mother or father to be alive but their death had been recorded in surveys during the respondent's childhood. For these cases we used the earlier information and included them as having experienced parental bereavement. Table A1 gives the distribution of cohort members by their bereavement experience up to age 30.

Table A1: Distribution of the bereavement experiences of cohort members interviewed at age 30.

	Mother	Father
Bereaved 0-5 years	27	95
Bereaved 6-10 years	39	78
Bereaved 11-16	89	220
Total Bereaved 0-16	155	393
Bereaved 17-30	371	859
Alive at age 30	10,705	9,833
Bereaved or unknown at 30 , alive 16	18	74
Bereaved or unknown at 30, information unclear	12	161
<i>N(100%)</i>	<i>11,261</i>	<i>11,261</i>

⁵ For further details see <http://www.nshd.mrc.ac.uk>.

⁶ For further details on BCS70, NCDS and MCS see <http://www.cls.ioe.ac.uk>.

Given the known strong influence family disruption has on children’s educational, behavioural and other psycho-social outcomes, we also used the earlier data to extract a group of respondents who have experienced some other family disruption between birth and age 16. This included not living with their natural or adopted parent (adopted at birth or very soon after) when they were age 5, 10 or 16 due to separation, divorce, gaining a step-father or step-mother, etc. Table A2 gives the final distribution of the 11,261 cohort members taking parental bereavement and family disruption into account.

Table A2: Distribution of cohort members by bereavement and family disruption experiences by age 16

	Number	Percentage
<u>Intact Families</u>		
Natural parents alive/with their child at 16 (including those adopted at 0 years)	8994	79.9
Father dead by age 16	357	3.2
Mother dead by age 16	108	1.0
Both parents dead by age 16	14	0.1
Father dead by age 16, other disruption (change to mother) by age 16	22	0.2
Mother dead by age 16, other disruption (change to father) by age 16	33	0.3
<u>Bereaved Families</u>		
Death of mother or father by age 16	534	4.7
Other disruption (change to father) by age 16	1355	12.0
Other disruption (change to mother) by age 16	207	1.8
Other disruption (change to both parents) by age 16	164	1.5
<u>Disrupted Families</u>		
Other disruption by age 16	1726	15.3
Information on both parents missing / unclear	7	0.0
<i>N(100%)</i>	<i>11,261</i>	

Tables of results

Characteristics at birth

Table A3: Family characteristics at birth by family type

	Family Type Age 16			Overall	
	Intact %	Bereaved %	Disrupted %	%	N (100%)
Mother: extended education	36	30	32	35	10,317
Father: extended education	36	29	32	36	9,979
Father in Professional or Managerial occupation	18	12	14	17	10,338
Father not working	1	7	13	3	10,338
Teenage mother	15	15	35	18	10,327

Table A4: Family characteristics at birth by family type and gender

	Family Type Age 16						Overall %	
	Intact %		Bereaved %		Disrupted %		♂	♀
	♂	♀	♂	♀	♂	♀		
Mother: extended education	37	36	26	33	30	33	35	35
Father: extended education	36	37	26	31	30	33	35	36
Father in Professional or Managerial occupation	18	18	14	14	12	11	17	17
Father not working	1	2	7	6	12	15	3	4
Teenage mother	16	15	12	17	36	34	18	18

Key: ♂ - boys. ♀ - girls

Characteristics and outcomes at age 16

Table A5: Teenage outcomes and characteristics at age 16 by family type

	Family Type Age 16			Overall	
	Intact %	Bereaved %	Disrupted %	%	N (100%)
Want to leave full-time education at 16	37	42	45	37	4,756
No qualifications at 16	9	16	17	11	5,922
Want to be studying in higher education in 5 years	19	16	11	18	4,757
'Very happy' living with parent(s)	38	37	30	37	5,032
'Somewhat unhappy' living with parent(s)	11	16	15	12	5,032
Smoker at age 16	23	25	35	25	4,878
Depressed on Malaise scale	14	22	18	15	4,361

Table A6: Teenage outcomes and characteristics at age 16 by family type and gender

	Family Type Age 16						Overall %	
	Intact %		Bereaved %		Disrupted %		♂	♀
	♂	♀	♂	♀	♂	♀		
Want to leave full-time education at 16	39	35	54	29	49	34	41	36
No qualifications at 16	11	8	21	13	19	16	12	9
Want to be studying in higher education in 5 years	21	17	13	18	14	10	19	16
'Very happy' living with parent(s)	38	38	42	35	35	26	38	36
'Somewhat unhappy' living with parent(s)	10	12	13	17	13	15	11	13
Smoker at age 16	20	26	24	26	29	39	22	27
Depressed on Malaise scale	11	17	14	25	10	23	11	18
Information about school years obtained at age 30 interview								
Ever truanted from school?	54	43	58	50	70	57	57	46
Ever been suspended from school?	13	5	16	6	24	9	15	6

Key: ♂ - boys. ♀ - girls

Characteristics and outcomes reported at age 30

Table A7: Men's age 30 outcomes and characteristics by childhood family type

	Family Type age 16			Overall	
	Intact %	Bereaved %	Disrupted %	%	N (100%)
Ever truanted from school	54	58	70	57	5,367
Ever suspended from school	13	16	24	15	5,388
No qualifications	12	17	16	13	5,449
NVQ4 or NVQ5 qualification	35	32	23	33	5,449
Unemployed	4	7	6	4	5,446
Permanently sick	2	4	5	2	5,446
In full-time employment	90	84	83	88	5,446
Professional/Managerial job	43	37	34	42	4,884
Skilled manual job	31	34	40	32	4,884
Partly skilled/Unskilled manual job	13	17	13	13	4,884
Excellent general health	32	27	29	32	5,448
Fair/Poor general health	19	24	22	20	5,448
Smoker at 30	33	37	46	35	4,998
Depressed on Malaise scale	10	11	15	11	5,384
Never get what want out of life	21	28	29	23	5,388

Table A8: Women's age 30 outcomes and characteristics by childhood family type

	Family Type			Overall	
	Intact %	Bereaved %	Disrupted %	%	N (100%)
Ever truanted from school	43	50	57	46	5,712
Ever suspended from school	5	6	9	6	5,726
No qualifications	13	18	18	14	5,772
NVQ4 or NVQ5 qualification	34	35	23	33	5,772
Unemployed	2	2	4	2	5,771
Permanently sick	2	3	1	2	5,771
Home-care role	18	20	24	19	5,771
In full-time employment	53	47	46	51	5,771
In part-time employment	26	23	22	23	5,771
Professional/Managerial job	41	41	34	40	4,247
Partly skilled/Unskilled manual job	13	15	18	14	4,247
Excellent general health	33	32	30	32	5,775
Fair/Poor general health	13	16	17	15	5,775
Smoker at 30	26	33	41	29	5,342
Depressed on Malaise scale	14	18	18	15	5,723
Never get what want out of life	17	23	19	18	5,726

Interpreting Odds Ratios (OR)

For those who are not familiar with the interpretation of logistic regression models, it is important to clarify the meaning of the odds ratios reported. Using the example of the relative chances of women from a bereaved or intact family owning their home at age 30 and using an approximation of the figures reported above in Table A8, we can see that 57% of women who experienced childhood bereavement were home owners compared with 68% of women from intact families. Expressing this in terms of odds rather than probabilities or percentages we obtain odds of 57:43 or 1.33:1 that bereaved women would be a home owner and 68:32 or 2.13:1 that women from intact families would be a home owner. The odds of women from bereaved families owning their home are therefore almost half that of women from intact families; however, this does not mean that women from bereaved families are half as likely as women from intact families to be a home owner. The odds ratio of a bereaved woman being a home owner compared with a woman from an intact family being a home owner is the ratio of 1.33/2.13 which equals 0.62. Since this ratio is less than 1.0, it means that it is much less likely that a woman will be a home owner if she is grew up in a bereaved family than if she grew up in an intact family.