Children's language ability and psychosocial development

Children's language ability and psychosocial development:
A twenty-nine year follow-up study

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This paper does not report results of a clinical trial

List of abbreviations

BCS70   The 1970 British Cohort Study

EPVT   English Picture Vocabulary Test

MICE   Multiple Imputations by Chained Equations

What is known

Childhood receptive language skills are associated with social, emotional, and behavioural problems, although there has been little research on whether these problems persist into adulthood.

What the study adds

Using a large scale longitudinal cohort study we investigate to what extent variations in childhood receptive language skills are linked to later psychosocial outcomes and adult mental health.

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Abstract

OBJECTIVES: Little is known on the psychosocial adult outcomes of children's early language skills or intervening circumstances. The aim of the paper is to assess the longitudinal trajectory linking childhood receptive language skills to psychosocial outcomes in later life.

METHODS: The study comprises 6,941 men and women participating in a nationally representative Birth Cohort Study (BCS70). Direct assessment of language skills were made at age 5. The sample was studied again at age 34 assessing psychosocial outcomes and levels of adult mental health. Characteristics of the family environment, individual adjustment, and social adaptation in the transition to adulthood were assessed as potential moderating factors linking early language skills to adult mental health.

RESULTS: In early childhood cohort members with poor receptive language experienced more disadvantaged socio-economic circumstances than cohort members with normal language skills and showed more behaviour and psychosocial adjustment problems in the transition to adulthood. At age 34 cohort members with poor early language skills reported lower levels of mental health than cohort member with normal language. Adjusting for family background and experiences of social adaptation early language skills maintained a significant and independent impact in predicting adult mental health.

CONCLUSIONS: Early receptive language skills are significantly associated with adult mental health as well as psychosocial adjustment during early childhood and in later life.

Policy implications: the needs of children with language problems are complex calling for early and continuing provision of educational support and services

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Children's language ability and psychosocial development:

A 29-year follow-up study

Success as an adult depends in part on the learning and development occurring in infancy and early childhood. Language skills, in particular, are critical to children's adjustment in school and in later life. There is evidence to suggest that children with language problems may develop social, emotional and behavioural problems[1-5]. Up to now there has been little research on whether these problems persist, to what extent they are associated with early language difficulties, or whether such problems are mainly a function of associated family circumstances[6-9]. Follow-up studies of children with early language problems suggest that mental health problems tend not to resolve, but rather to increase with entry into adolescence[1, 2, 10-12], although there might be different trajectories for different behavioural, emotional, or social problems. There is also evidence to suggest that children with developmental language problems are at an increased risk of psychiatric disorder and impaired social adaptation [6, 7,13, 14]. The samples used in these studies comprise a heterogeneous population, including different types of language impairments and ages, although individual samples mostly involved small and relative homogenous samples of children with clinical levels of language problems.

In this paper we use a large scale longitudinal study to investigate the extent to which variations in childhood receptive language ability are linked to later psychosocial outcomes. Drawing on data collected for the 1970 British Birth Cohort we assess family circumstances as well as psychosocial functioning of children with poor language skills in early childhood and link these to adult psychosocial outcomes. First, we assess the direct association between early language skills and adult mental health. Then we examine to what extent this association can be explained through family circumstances rather than the presence of language problems. We differentiate between family socio-demographic characteristics and the

psychosocial family environment, following the assumption that these tap into different aspects of childhood experience, i.e. family socio-economic resources and parent-child interactions[15-17].We also test whether adult mental health is influenced by social and behavioural difficulties in childhood, through social adaptation problems in the transition to adulthood, or a combination of all these factors.

This paper is one of the first to link childhood language ability to later psychosocial adjustment in a nationally representative sample. Moreover we account for gender differences in long term outcomes, as there is persistent evidence to suggest that adult psychosocial adjustment differs for men and women[18-20].

Methods

Data

The British Cohort Study (BCS70) is a large-scale longitudinal study of 16,571 individuals who were born in Great Britain in a week in April 1970. Follow-up studies were conducted at age 5, 10, 16, 26, 30, and 34. In 2004, at age 34 years, 9665 cohort members took part in the follow-up survey, and for 6,941 cohort members we have complete data for key variables collected at age 5 and 34 (72 per cent of those who completed the questionnaire at age 34). The sample is largely representative of the general UK population of that age, although there is a trend towards under-representation of males and the less educated[21]. We used multiple imputation to address the issue of missingness and selective drop-out.

Measures

Receptive language at age 5

English language development at age 5 was assessed directly using the English Picture Vocabulary Test (EPVT), an adaptation of the American Peabody Picture Vocabulary Test[22]. The test has a good reliability of 0.96 [23]. It consists of 56 sets of four different pictures with a particular word associated with each set of four pictures. The child is asked to indicate the one picture that corresponds to the given

word, and the test proceeds with words of increasing difficulty, until the child made five mistakes in a run of eight consecutive items. Children who scored at least one standard deviation below the average performance score were identified as having poor receptive language skills. A group with 'normal' language development included all others.

Family Demographics

o   Teenaged mother (0=no, 1=yes)

o   Single (never married) mother at birth (0=no, 1=yes)

o   Mother's education (0=further education, 1=mother left full-time education at minimum age)

o   Father's education (0=further education, 1=father left at minimum age)

o   Social class from father's occupation (or mother's if single) (0=non-manual or skilled manual, 1=semi-or unskilled manual)

o   Income from employment (0=yes, 1=no income)

Psychosocial family environment during childhood

o   *Maternal depression.* At age 5 mothers were assessed with the Rutter Malaise Inventory, a self-completion instrument, measuring depression, anxiety and psychosomatic illness[24]. A score of 8 or higher from the 24 items indicates increased rates psychological distress (0=no distress, 1=distress)

o   *Parents read to child.* At age 5 parents were asked how often they read to child in a week (0=read to child, 1=did not read to child)

o   *Parental interest in child's education.* At age 10, the child's teacher was asked to report how interested the child's parents were in the child's education. 58.8 % of parents were reported to be 'very or moderately' interested and 9 % to show 'little interest' or be 'uninterested'. For 31.2% of parents, teachers felt they 'could not say' what interest they held. We differentiated between parents who were

interested in their child's education (0), those who were reported to be uninterested or to have little interest (1) and those where the teacher could not report on parental interest (2).

Own psychosocial adjustment during childhood

o Behavioural adjustment at age 5 was measured using maternal report on 29 items of the Rutter 'A' Scale. Subscores for 'neurotic' and 'antisocial' behaviour problems were obtained following the approach outlined by Rutter et al., (1970, pp. 412-413).

o Self Esteem was directly assessed at age 10 using 7 items from the pupil questionnaire[25-26] (e.g. 'Do you think that other children often say nasty things about you?', 'Do you often feel sad because you have nobody to play with at school?). Cohort members with summary scores more than 1 sd below the mean were identified as having low self-esteem at age 10.

Social adaptation in the transition to adulthood

o Age left full-time education (0=further education, 1=left school at age 16)

o Timing of parenthood (1=teenage parenthood; 2=not a parent by 34; 0=parent between 20-34 [reference category])

o Lives with parents at age 34 (0=no, 1=yes)

o Unemployment (0=no unemployment, 1=unemployed 1-12 months, 2=13+ months unemployed)

Adult mental health

We operationalised adult mental health as a syndrome of indicators reflecting the presence or absence of positive feelings and functioning[27] at age 34 using four dichotomised measures:

o a shortened version of the Rutter *Malaise Inventory* comprising nine items was used as a screening tool for adult depression[28]. A score of 4 or higher is used to indicate psychological distress (0=no distress, 1=distress).

- o general *life satisfaction* was measured on a 10-point scale: (0=extremely unsatisfied to 10=completely satisfied). The median score was 7. 22.1% scored between 0 and 6 indicating low life satisfaction (0=satisfied, 1=low satisfaction).

- o feeling of *control* over one's life was measured with a forced choice question: 'I usually have a free choice and control over my life' (0=control, 1=no control).

- o a measure of *self-efficacy* was based on another forced choice question: 'I usually get what I want out of life' (0=yes, 1=no).

Adults reporting 3 or 4 indicators of negative functioning were identified as having poor mental health, those reporting 1 or 2 indicators are assumed to be moderately mentally healthy, and those who report no problems are considered to have good mental health.

Control variables: Indicators of biological risk

- o Birthweight (0=2515 grams+,1=below 2515 grams)

- o Gestation (0=259+ days, 1=less than 259 days)

Analytic strategy

A series of logistic regression models were run, using adult mental health as the outcome. To account for missingness between data sweeps we used multiple imputations by chained equations (MICE) as implemented in STATA 10 [29] as a best effort technique[30]. Five replicates of the data were created. Model estimates were averaged across these five analyses, with their standard errors calculated according to Rubin's rule[31]. All descriptive analyses were also carried out in STATA 10 and relevant statistical comparisons were made using X^2 tests at the 0.001, 0.01 and 0.05 levels. All models were controlled for indicators of biological risk (low birth weight and gestation) to account for associated medical conditions.

Results

Table 1 compares the characteristics and background data for men and women separately. At age 5 more girls than boys show poor receptive language skills. While gender differences in the development of language skills are generally in favour of girls[32], there is evidence of task specific differences[33-36]. The format in which the test items are presented to the children, requiring no expressive language skills, but asking the child to point to one of four pictures might be more in favour of boys, who may have an advantage when it comes to visual tasks requiring scanning.

Our findings suggest that boys and girls with poor receptive language are more likely to grow up in relatively disadvantaged family circumstances than children with normal language skills, and are more likely to show problematic behaviour and social adaptation problems (Table 1). Men and women with poor early language skills are feeling less satisfied with their lives, less in control, and are more likely depressed than those with normal language skills. More women than men report that they get what they want out of life and are more satisfied with their lives, yet we also find that more women than men report high levels of distress.

Insert table 1 about here

Predicting adult mental health

In a next step we ran a series of logistic regressions to assess the risk of poor adult mental health among cohort members with poor language skills at age 5, and whether this risk is moderated by earlier experiences. We first assessed the direct association between early receptive language problems and adult mental health (Model 1) controlling for biological risk. Second, we examined the role of family socio-

economic circumstances (Model 2), and then in Model 3, the role of the psychosocial family climate in moderating the risk. Forth, we assessed the effect of the child's characteristics, i.e. behaviour adjustment and self esteem (Model 4), and fifths, experiences of social adaptation during the transition to adulthood (Model 5). In a last and final model we included all variables simultaneously. All models were run separately for men and women to account for gender specific experiences in the transition to adulthood[18-20].

Insert Table 2

Table 2 gives the results of the multivariate logistic regression models for women. *Model* 1 suggests that differences in adult mental health were significantly associated with early receptive language skills. The odds for poor mental health among women with poor early language skills are about two times higher than those among women with normal language skills. Adjusting for socio-demographic characteristics of the family (*Model 2*) reduces the odds for poor mental health in adulthood significantly (15 per cent), yet does not eliminate the gradient. Adjusting for the psychosocial family environment experienced during childhood (*Model 3)* brings an even greater reduction in the gradient (25 per cent). The association between early receptive language problems and adult mental health remains, however, significant. Adjusting for indicators of early behaviour problems and low self esteem (*Model 4)* also reduces the odds ratio – yet not as strongly as Model 2 and 3. Adjusting for experience of social adaptation between ages 16 to 34 (*Model 5)* brings again a significant reduction in the risk for poor adult mental health among women. Taking into account all variables simultaneously reduces the association between early language problems and poor adult mental health by 34 per cent, but does not remove it. In addition and above the direct influence of early language problems on adult mental health we find an independent significant

effect from maternal depression, lack of parental interest in the child's education, conduct disorder, low self-esteem, and indicators of social adaption in the transition to adulthood, such as teenage parenthood, living with parents, and experience of unstable employment, suggesting that these are key factors undermining positive mental health among women with poor early language skills.

Insert Table 3

Among men (Table 3) we also find a significant association between early receptive language problems and adult mental health (Model 1). Taking into account the socio-demographic characteristics of the family environment (Model 2) we find a reduction in the gradient by 12 per cent, although the association between early language skills and adult mental health remains significant. Adjusting for characteristics of the family environment (Model 3) also reduces the odds, as does the consideration of the child's behaviour and self esteem (Model 4). Taking into account indicators of social adaptation between ages 16 and 34 (Model 5) reduces the gradient by 23 per cent, yet the association between early language problems and poor adult mental health remains significant. Including all variables simultaneously (Final Model) leads to a reduction of the gradient by 40 per cent, suggesting that positive mental health can be promoted by improving the psychosocial characteristics of the early family environment (especially parental interest in the child's education) and by supporting social adaptation during young adulthood, in particular through prevention of long-term unemployment and facilitating independent living.

Discussion

Early receptive language problems are a significant risk factor for adult mental health and wellbeing. The childhood of cohort members with poor early language is characterized by relative social disadvantage, as

they are more likely born to a teenage mother, to parents with only minimum education and low occupational status than cohort members with normal language skills. Their mothers report increased levels of psychological distress, their parents show less interest in their education and are less likely to read regularly to their child. Children with poor early language skills are more likely to manifest behavioural problems and report lower levels of self esteem than children with normal language, they also encounter more social adaptation difficulties in the transition to adulthood. The risk presented by early language problems for adult mental health is partly moderated by characteristics of the family environment, as well as individual psychosocial adjustment. After controlling for family demographics, the psychosocial family environment, the cohort member's behaviour and self esteem, as well as their social adaptation experiences in the transition to adulthood, the association between early language skills and adult mental health could be significantly reduced, yet not be removed.

The findings suggest different mechanisms in the psychosocial adaptation of men and women with early receptive language problems. There is a stronger association between early language problems and adult mental health among men than among women, suggesting that men with poor receptive language skills are relatively more at risk for mental health problems than women. Women with early receptive language problems are possibly to some extent protected from potential risk of adult mental health problems if they are brought up by a mentally stable mother, by parents who show an interest in their education, if they show no signs of antisocial behaviour in early childhood, avoid early school leaving, teenage parenthood, and long-term unemployment, and if they make the move away from the parental home to set up their own household. Among men parental interest in their education also moderates the association between early language problems and adult affective disorder, as does the manifestation of antisocial behaviour during childhood, low self esteem, and the experience of social adaptation problems in the transition to adulthood.

Generally the social adaptation of individuals with poor early receptive language was impaired compared to cohort members with normal language. This was evidenced in lower levels of behavioural adjustment and self esteem in early childhood, as well as regarding employment, family formation, and independent living. The findings suggest that early language problems are associated with difficulties in social functioning[6-7], which in turn can result in socially restricted lives, characterized by long-term unemployment, problems in establishing and maintaining intimate relationships, and difficulties in making the step into independent living. The experience of social adaptation problems implies a lack of opportunities for attachment and participation in a supportive social environment, such as work or family life, which in turn is associated with reduced mental health[37].

In interpreting the findings some limitations of the study have to be considered. The data used in the analysis has been collected over 30 years ago, reflecting theoretical and methodological concerns at that time. As with all secondary analysis we had to make the best of the available data. Another concern is missing data due to survey loss or incomplete response. There is some indication that the most socially disadvantaged, in particular men, are also most likely to drop out of longitudinal studies [21]. We used multiple imputation methods to address the issue of missingness and selective drop-out of the study, a method recommended as a 'best effort' technique for dealing with this problem[38]. Nonetheless, the estimates might be underestimates of the population effects because of the slight underrepresentation of the most disadvantaged. On the positive side, the strengths of this study lies in its size, resulting in high statistical power, its longitudinal nature, the direct assessment of early language skills, information on socio-economic circumstances and psychosocial adjustment in the transition to adulthood, following the lives of children with poor early language skills and comparing their experiences to those of normal ability. Future studies should examine in more detail the role of generalised versus more specific language

skills[6-7] to confirm the role of early language as an independent predictor of adult social functioning and mental health.

Conclusions

The psychosocial consequences of early receptive language problems are pervasive and continue into adult life. The needs of children with early language problems are complex, and increased awareness should be paid to the persisting social and psychological difficulties these children may go on to experience. The data presented here identifies characteristics of the family and the individual, such as lack of parental interest in their child's education and low self esteem, that could be addressed in order to promote positive mental health among those with poor early language skills.

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Table 1: Descriptive statistics of variables included in analysis

	Men (n=3328)			Women (n=3613)			Overall (n=6941)		
	Poor %	Normal %	All %	Poor %	Normal %	All %	Poor %	Normal %	All %
Distribution Language skills at age 5	**9.6**	**90.4**		**15.0**	**85.0**		**12.4**	**87.6**	
Family Demographics (birth)									
Child mother ever a teenage mother	22.1[1]	15.2	15.9	23.4[1]	14.4	15.8	22.9[1]	14.8	15.8
Child mother left school at minimum age	78.5[1]	61.6	63.2	78.9[1]	61.2	63.8	78.8[1]	61.4	63.5
Child father left school at minimum age	77.8[1]	63.2	64.6	78.6[1]	61.0	63.6	78.3[1]	62.1	64.1
Child father in semi or unskilled manual job	33.0[1]	17.8	19.2	31.6[1]	17.0	19.2	32.1[1]	17.2	19.1
Psychosocial Family Environment (age 5 and age 10)									
Mother depressed	24.7[1]	14.0	15.0	24.7[1]	14.3	15.9	24.4[1]	13.9	15.2[6]
Parents show little interested in child's education	17.4[1]	7.4	8.4	14.3[1]	5.6	6.9	15.4[1]	6.5	7.6[6]
Teacher reports 'cannot say' if parents have interest in child's education	35.8[1]	27.5	28.3	37.1[1]	29.7	30.8	36.6[1]	28.6	29.6[6]
Parent did not read to child	32.0[1]	16.6	18.1	27.9[1]	15.9	17.7	29.4	16.3	17.9
Child's Behaviour / Self-esteem (age 5 and 10)									
Neurotic (Rutter)	2.5	2.8	2.7	5.2[2]	3.7	4.0	4.2[2]	3.2	3.4[6]
Antisocial (Rutter)	15.0[1]	7.0	7.7	8.3[1]	4.0	4.7	10.8[1]	5.5	6.1[6]
Low self esteem	18.5[1]	12.6	13.2	25.8[1]	19.0	20.0	22.0[1]	15.9	16.6[4]
Social Adaptation (age 16-34)									
Left education by 16	66.4[1]	49.6	51.2	58.7[1]	39.5	42.4	61.5[1]	44.5	46.6[4]
Teenage parent	4.7	2.3	2.6	14.4[1]	6.7	7.9	10.8[1]	4.5	5.3[4]
Not a parent by 34	46.9	46.4	46.5	27.9	31.2	30.7	34.9	38.7	38.3[4]
Lives with parents at age 34	18.6[1]	9.4	10.3	5.0[2]	3.2	3.5	10.0[1]	6.3	6.7[4]
Never lived with a partner by age 34	23.3[2]	18.5	19.0	13.8[2]	10.1	10.6	17.3[2]	14.3	14.6[4]
Unemployed 1-12 months	17.6	15.8	15.9	11.4	11.1	11.2	13.7	13.4	13.5[4]
Unemployed 13+ months	20.1[1]	10.5	11.5	7.8[3]	5.4	5.8	12.3[1]	7.9	8.5[4]
Adult Mental Health (age 34)									
Never get what want out of life	31.1[1]	18.0	19.2	24.2[1]	14.3	15.8	26.7[1]	16.1	17.4[4]
Has no control over life	14.8[1]	6.5	7.3	12.9[1]	6.3	7.3	13.6[1]	6.4	7.3
Has low life satisfaction	35.5[1]	20.7	22.2	23.1[1]	17.0	17.9	32.0[1]	20.7	22.1[4]
Depressed (Malaise)	20.4[1]	11.0	11.9	29.9[1]	20.6	22.0	22.1[1]	14.0	15.0[4]
Poor mental health (3-4 indicators out of 4)	14.8[1]	6.9	7.7	13.8[1]	7.7	8.6	14.2[1]	7.3	8.1
Moderately mentally healthy (1-2 indicators out of 4)	36.2[1]	24.9	26.0	32.1[1]	25.2	26.2	33.6[1]	25.0	26.1
Good mental health	49.1[1]	68.2	66.4	54.1[1]	67.2	65.2	52.2[1]	67.7	65.8

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Statistical significance between EPVT groups [1] p<.001 [2]p<.01 [3]p<.05; Statistical significance by gender [4] p<.001 [5]p<.01 [6]p<.05;.

Table 2: Multiple logistic regression predicting poor adult mental health for WOMEN at age 34 (odds ratios and 95% Confidence Interval [controlling for biological risk])

	Model 1	Model 2	Model 3	Model 4	Model 5	Final Model
Receptive Language (age 5)						
EPVT poor	2.20*** 1.65-2.93	1.88*** 1.40-2.53	1.71** 1.25-2.35	2.03*** 1.51-2.74	1.85*** 1.36-2.50	1.46* 1.05-2.03
EPVT normal	1.00	1.00	1.00	1.00	1.00	1.00
Demographics (birth)						
Child mother ever a teenage mother		1.35 0.99-1.84				1.10 0.78-1.55
Child mother left school at minimum age		1.11 0.82-1.49				0.87 0.63-1.21
Child father left school at minimum age		1.68** 1.23-2.30				1.39 0.99-1.94
Child father in semi or unskilled manual job in 1970		1.47* 1.10-1.96				1.24 0.91-1.70
Psycho-Social Environment (age 5 and age 10)						
Mother depressed (8+ malaise)			2.07*** 1.53-2.78			1.70** 1.23-2.36
Teacher reports parents have little interest in child's education			4.62*** 3.11-6.87			3.23*** 2.11-4.94
Teacher reports 'cannot say' if parents have interest in child's education			1.65** 1.22-2.24			1.37 0.99-1.90
Parent did not read to child			1.34 0.99-1.81			1.22 0.89-1.69
Child's behaviour / self-esteem (age 5 and 10)						
Neurotic (Rutter)				1.78* 1.01-3.13		1.62 0.88-2.97
Antisocial (Rutter)				3.29*** 2.12-5.11		2.22** 1.33-3.71
Low self esteem				2.05*** 1.49-2.81		1.77** 1.25-2.51
Social Adaptation (age 16-34)						
Left education by 16					1.67*** 1.29-2.16	1.25 0.94-1.66
Teenage parent					3.03*** 2.08-4.42	2.15*** 1.41-3.28
Not a parent by 34					1.05 0.77-1.42	1.12 0.81-1.55
Lives with parents at age 34					3.34*** 1.87-5.99	3.69*** 1.98-6.88
Never lived with a partner by 34					1.05 0.68-1.61	0.99 0.63-1.56
Unemployed 1-12 months					1.59* 1.10-2.30	1.51* 1.02-2.22
Unemployed 13+ months					3.57*** 2.39-5.32	3.25*** 2.11-5.02

Statistical significance ***p<.001 **p<.01 *p<.05.

Table 3: Multiple logistic regression predicting poor adult mental health for MEN at age 34 (odds ratios and 95% Confidence Interval [controlling for biological risk])

	Model 1	Model 2	Model 3	Model 4	Model 5	Final Model
Receptive Language (age 5)						
EPVT poor	2.94*** 2.06-4.20	2.58*** 1.79-3.71	2.20*** 1.47-3.28	2.70*** 1.88-3.89	2.27*** 1.54-3.34	1.77** 1.15-2.72
EPVT normal	1.00	1.00	1.00	1.00	1.00	1.00
Demographics (birth)						
Child mother ever a teenage mother		1.20 0.85-1.70				1.16 0.78-1.73
Child mother left school at minimum age		1.12 0.81-1.54				1.04 0.73-1.49
Child father left school at minimum age		1.77** 1.24-2.51				1.26 0.85-1.86
Child father in semi or unskilled manual job in 1970		1.18 0.85-1.63				1.06 0.73-1.54
Psycho-Social Environment (age 5 and age 10)						
Mother depressed (8+ malaise)			1.54* 1.08-2.20			1.27 0.86-1.86
Teacher reports parents have little interest in child's education			2.90*** 1.68-5.01			2.22* 1.15-4.28
Teacher reports 'cannot say' if parents have interest in child's education			1.75*** 1.29-2.38			1.54* 1.11-2.14
Parent did not read to child			1.24 0.85-1.79			1.35 0.91-2.01
Child's behaviour / self-esteem (age 5 and 10)						
Neurotic (Rutter)				2.52** 1.33-4.77		1.95 0.93-4.08
Antisocial (Rutter)				1.89** 1.24-2.88		1.34 0.82-2.20
Low self esteem				1.72** 1.19-2.48		1.56* 1.03-2.34
Social Adaptation (age 16-34)						
Left education by 16					1.68*** 1.26-2.24	1.32 0.95-1.82
Teenage parent					1.05 0.45-2.45	0.95 0.38-2.40
Not a parent by 34					1.20 0.87-1.65	1.38 0.99-1.94
Lives with parents at age 34					3.41*** 2.32-5.01	3.05*** 2.03-4.58
Never lived with a partner by 34					1.20 0.83-1.75	1.17 0.80-1.72
Unemployed 1-12 months					1.72** 1.20-2.47	1.63* 1.11-2.38
Unemployed 13+ months					4.67*** 3.28-6.68	4.02*** 2.76-5.85

Statistical significance ***p<.001 **p<.01 *p<.05.