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Childhood disadvantage and adolescent socioemotional wellbeing as predictors of future parenting behaviour



H.M. McAnally^{a,*}, E. Iosua^a, J.L. Sligo^a, J. Belsky^b, E. Spry^{c,d}, P. Letcher^e, J. A. Macdonald^{c,d,e}, K.C. Thomson^{c,e,f}, C.A. Olsson^{c,d,e}, S. Williams^a, R. McGee^a, A. E. Bolton^a, R.J. Hancox^a

^a Department of Preventive and Social Medicine, University of Otago, Dunedin, 9016, New Zealand

^b Robert M. and Natalie Reid Dorn Professor, Department of Human Ecology, University of California, One Shields Avenue, 1331 Hart Hall, Davis, CA, 95616, USA

^c Deakin University, Centre for Social and Early Emotional Development, School of Psychology, Faculty of Health, Geelong, Australia

^d Murdoch Children's Research Institute, Royal Children's Hospital, Melbourne, Australia

e The University of Melbourne, Department of Paediatrics, Faculty of Medicine, Dentistry and Health Sciences, The Royal Children's Hospital

ABSTRACT

Campus, Parkville, Victoria, Australia

^f University of British Columbia, Human Early Learning Partnership, School of Population and Public Health, Vancouver, British Columbia, Canada

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Keywords: Introduction: In extending work on early life antecedents of parenting, we investigate associations Childhood disadvantage between childhood family history of disadvantage, adolescent socioemotional wellbeing, and age Adolescence at first parenthood and subsequent parenting behaviour. Wellbeing Methods: Parent-child interactions were recorded when participants in the longitudinal Dunedin Mental health Multidisciplinary Health and Development Study (New Zealand) had a three-year-old child. Data Parenting behaviour were available for 358 mothers and 321 fathers, aged between 17.7 and 41.5 at the time of their child's birth. Associations between parenting and antecedent data on socioeconomic disadvantage, adolescent wellbeing and mental health, as well as current adult mental health and age at parenting, were tested for using structural equation modelling. Results: Family disadvantage in childhood and lower adolescent wellbeing was associated with less positive future parenting, but only adult (not adolescent) anxiety/depression symptoms were directly associated with parenting behaviour. Childhood family disadvantage was associated with further disadvantage across the life course that included less positive parenting of the next generation. In contrast, socioemotional wellbeing during adolescence and later age of onset of parenting were associated with more positive parenting. Conclusions: Reducing childhood disadvantage and improving socioemotional wellbeing during childhood and adolescence is likely to have intergenerational benefits through better parenting of the next generation.

1. Introduction

Research that takes a life-course perspective to consider adolescent wellbeing and mental health (the combination of which we

* Corresponding author. *E-mail address*: helena.mcanally@otago.ac.nz (H.M. McAnally).

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refer to as socioemotional wellbeing) in relation to later parenting behaviour is rare. Previous research has focused overwhelmingly on preconception risk factors of negative parenting. It has been long acknowledged that socioeconomic disadvantage adversely affects children (McLoyd, 1998) and that these effects may have intergenerational impacts (Conger et al., 2012; Evans, Chen, Miller, & Seeman, 2012). Childhood disadvantage also affects health and wellbeing later in life, and predicts poorer outcomes later in the life course, over and above concurrent disadvantage (Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Evans et al., 2012; Melchior, Moffitt, Milne, Poulton, & Caspi, 2007; Poulton et al., 2002). Furthermore, childhood disadvantage is associated with poorer adult wellbeing, as measured by coping style, social participation, coherence, and prosociality (Olsson, McGee, Nada-Raja, & Williams, 2012), which may result from the multifactorial nature of the adversity associated with disadvantage (Duncan et al., 1998; Evans et al., 2012; Melchior et al., 2007). A life-course approach to human development recognises the long-term processes that link adulthood to antecedent experience and acknowledges that these processes, while not deterministic, may be multigenerational (Wallack & Thornburg, 2016). Thus, consideration of how childhood influences later parenting is important.

There is also evidence that poorer parenting and poorer mental health are related. Research also indicates there is some continuity of poor mental health from adolescence to parenthood (Thomson et al., 2020). However, the relationship parenting and mental health is likely to be bidirectional, at least in some cases, as parenting can be associated with stressors that may worsen mental health (Nelson, Kushlev, & Lyubomirsky, 2014) and poorer mental health can result in less optimal parenting (Galbally & Lewis, 2017). Given there may be continuities in mental health across the life-course, adolescent mental health may affect later parenting outcomes and assessing adolescent mental health may provide some indication of the direction of the effect.

However, it is less widely recognised that personal resources in adolescence, such as socioemotional wellbeing, may have implications for subsequent development and may help young people to meet the demands of adulthood, including parenting their own children (Schulenberg, Bryant, & O'Malley, 2004). In addition to the findings for childhood disadvantage already noted, previous research from the Dunedin Multidisciplinary Health and Development Study (Dunedin Study) has found that attachment to parents, peers, and community formed a significant part of a construct of adolescent wellbeing (Olsson et al., 2012), but mental health problems in adolescence did not (Olsson et al., 2012). This is possibly due to wellbeing and mental ill health being distinct, inversely correlated, domains of measurement (Fergusson et al., 2015; Huppert, 2009; O'Connor et al., 2012). Huppert (2009), notes that the presence of negative affect is not an indicator of an absence of wellbeing and that wellbeing includes being able to manage negative emotionality but also moves beyond a dichotomy of positive versus negative emotions to include emotions such as interest and engagement as well non-emotional factors such as having positive interpersonal relationships. This conception of wellbeing does not exclude the possibility that adolescents could have poor mental health but still experience wellbeing in other domains of their lives.

Thus, although adolescents may often experience challenges to their mental health, they also have opportunities to thrive as they negotiate new roles in terms of attachments to others, a sense of autonomy or coherence, and involvement in work, education and community life (Feehan, McGee, Williams, & Nada-Raja, 1995; Olsson et al., 2012; Twenge, Cooper, Joiner, Duffy, & Binau, 2019). Clearly, both positive and negative life course factors during childhood and adolescence can influence development in ways that plausibly impact on subsequent parenting. Given that adolescence is recognised as a crucial developmental period (Viner et al., 2015), assessing childhood disadvantage and socioemotional wellbeing (both wellbeing and absence of mental health disorder) in adolescence and understanding how these may impact later parenting is important as adolescence may be a period during which interventions to improve positive outcomes have multigenerational effects. Alternatively, adolescent development may impact on those who transition into parenting closer to adolescence, and have less impact on those who parent later in life.

Some demographic characteristics have been linked to later parenting. For example, worse socio-economic status is associated with earlier age at first birth (van Roode, Sharples, Dickson, & Paul, 2017). Gender may also moderate life course influences on parenting. The parenting experienced by members of the Dunedin Study between ages 3 and 15 years forecast their own later warm-sensitive parenting by mothers, though not by fathers (Belsky, Hancox, Sligo, & Poulton, 2012; Belsky, Jaffee, Sligo, Woodward, & Silva, 2005). A number of studies also provide evidence of multi-generational continuities in both positive and harsh parenting, some of which are enhanced or offset by the personal resources, life experiences, or opportunities of the parent (Conger et al., 2012; Schofield, Conger, & Conger, 2017; Schofield, Conger, & Neppl, 2014). However, most life-course research, has focused on mothers and babies, particularly in high risk samples, and the role of fathers and their socioemotional wellbeing during adolescence has received little attention. Thus, it seems appropriate to consider life course experiences of both mothers and fathers when attempting to illuminate the determinants of parenting (Belsky, 1984).

The present work draws on three generations of prospective data from the Dunedin Study to map intergenerational pathways from parental histories of disadvantage in childhood, to socioemotional wellbeing in adolescence, to the quality of parenting provided to the next generation while accounting for the age of parents. Specific aims are threefold: (1) to examine the extent to which early childhood socioeconomic disadvantage is related to parenting of the next generation; (2) to examine the importance of adolescent socioemotional wellbeing (both greater wellbeing and mental health) on future parenting behaviour, and (3) to investigate whether pathways to positive parenting are similar for women and men. The adolescent wellbeing measure we will use has been used in previous work (Olsson et al., 2012) and assessing its contribution to parenting will provide a further test of the impact of adolescent wellbeing on later life-course outcomes. This research also represents an extension of work on the contributors to parenting behaviours because childhood socioeconomic disadvantage and adolescent socioemotional wellbeing have not been studied together prospectively in relation to parenting.

2. Methods

The Dunedin Study is a longitudinal investigation of an unselected birth cohort of people born between April 1, 1972 and March 31, 1973. Study participants were first enrolled at age 3 years (91% of those eligible; 51.6% male), and then subsequently re-assessed at ages 5, 7, 9, 11, 13, 15, 18, 21, 26, 32, 38, and 45. Follow-up rates in this cohort are consistently high: participation was over 90% for each assessment used in the current research. The cohort was representative of the population of the South Island of New Zealand and are primarily of New Zealand European ancestry (Poulton, Moffitt, & Silva, 2015).

The Parenting Study was initiated in 1994 to assess the parenting behaviours and attitudes of the Dunedin Study members (Generation 2 [G2]) with their first preschool-aged child/stepchild (Generation 3 [G3]) during a home visit (Belsky et al., 2005). Study members reported on their status as parents both during assessments (at ages 18, 21, 26, 32, 38, 45) and also as part of the tracing protocols the Dunedin Study has in place. To be eligible, Dunedin study members needed to have a parenting role with their child, but did not necessarily need to live in the same house. Ninety-eight percent of those eligible to participate in the study have done so, although not all of the original G2 cohort have had children or have children old enough to participate in the Parenting Study (the G3 child must be at least 3 years old to participate). At the time of analysis, 702 participants had participated in the parenting study and 12 eligible participants had refused to participate. Twenty-three participants (3.3%) who took part in the parenting study did not have observational parenting data, either because they declined to have their parenting behaviour videotaped (see below) or because their child was too old for the video tasks (>60 months) at the time of assessment.

Each assessment phase of the main Dunedin Study and the Parenting sub-study were approved by the appropriate ethics committees at the time. Participants (G2), and in earlier phases, their parents (Generation 1 [G1]), provided signed informed consent for all assessments.

2.2. Measures

We constructed first and second order latent variables from previously validated items for adolescent predictors (Olsson et al.,

Table 1

Descriptive values for all variables in Model 1.

Variable	Ν	Mean	STD Dev.	Range	
				Min	Max
G2 Age at G3 child's birth	679	30.02	5.54	17.7	41.5
G1 SES at G2's birth	626	3.53	1.37	1	6
G1 SES when G2 was 3	596	3.77	1.62	1	6
G1 SES when G2 was 5	546	3.39	1.30	1	6
G1 SES when G2 was 9	573	3.21	1.28	1	6
G2 Anxiety age 15	634	8.73	5.89	0	43
G2 Anxiety age 18	629	10.23	9.21	0	49
G2 Depression age 15	650	3.35	6.53	0	48
G2 Depression age 18	629	6.32	10.22	0	55
G2 Culture/Youth Groups age 15	649	0.43	0.73	0	5
G2 Culture/Youth Groups age 18	623	0.28	0.59	0	3
G2 Sport age 18	623	0.84	1.22	0	11
G2 Self-rated Strengths age 15	648	14.75	3.94	4	22
Parent (G1) Rated Strengths (of G2) age 15	643	27.87	6.13	0	36
G2 Self-rated Strengths age 18	633	14.32	3.79	1	22
Parent (G1) Rated Strengths (of G2) age 18	579	32.83	6.69	1	44
G2 Parent Attachment (to G1), age 15	648	41.70	5.58	14	48
G2 Peer Attachment age 15	641	44.00	5.92	22	52
G2 Confidant age 15	648	0.81	0.39	0	1
G2 School Attachment age 15	631	2.53	0.73	0	3
G2 Satisfaction with Life age 18	628	3.27	0.55	1	4
G2 Satisfaction with Time age 18	629	3.36	0.57	1	4
G2 Satisfaction with People age 18	628	3.41	0.53	2	4
G2 Satisfaction with Future age 18	626	3.19	0.60	1	4
Average Ratings of G2 Parent Behaviour towards their G3	Child across Three T	asks			
Sensitivity	679	4.71	1.54	1	7
Intrusiveness	679	1.80	0.88	1	6
Detachment	679	1.85	1.12	1	6.67
Cognitive Stimulation	679	3.38	1.20	1	7
Positive Regard	679	4.30	1.63	1	7
Negative Regard	679	1.16	0.57	1	7
G2 Parent Ratings of their Mental Health at the time of the G2 Parenting Assessment					
Anxiety	676	0.08	0.13	0	1
Depression	677	0.19	0.19	0	1

2012) and for parenting outcomes as detailed below. Means, standard deviations, and ranges for all variables are presented in Table 1; higher scores indicate greater presence of each construct.

2.3. Childhood socioeconomic disadvantage

Disadvantage experienced by the G2 cohort up until age 9 years was indicated by parental occupation at G2's birth and when G2 was aged 3, 5 and 9. Parents' occupations were given a code from 1 (professional) to 6 (unskilled labourer) based on the education and income level associated with that occupation in New Zealand (Elley & Irving, 1976). Parental (G1) occupation was recorded at each of the four time points and when two parental codes were available, the highest score (score closest to one) was used. Higher scores on this measure equate to more socioeconomic disadvantage.

3. Adolescent socioemotional wellbeing

3.1. Wellbeing

Adolescent wellbeing in the G2 study members was indicated by four latent variable constructs. 1) *Quality of social attachments* measured at age 15, as indicated by attachment to a) parents and b) friends assessed with a shortened version of the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987; Nada-Raja, McGee, & Stanton, 1992); c) attachment to school assessed by a visual analogue scale of five concentric circles where adolescents were asked to imagine the circles represented everything taking place at their school and then rate "how far from the centre of things" they are (Elliott & Voss, 1974); and d) participants were also asked about having someone to talk to if they "had a problem or felt upset about something" (yes/no response). 2) *Participation in clubs and groups* at age 15 and 18 years: participants were asked "Do you belong to any organized clubs or groups or activities outside school – e.g. scouts, gym, soccer, cricket, music or ballet?" Responses were recorded verbatim (McGee, Williams, Howden-Chapman, Martin, & Kawachi, 2006) and classified as either participation in cultural and youth groups (ages 15 and 18), or participation in sporting groups (age 18). 3) *Self-perceived competencies* were assessed at age 15 and 18 years by the Strengths scale completed by the adolescent participant (22 items) and a parent/significant other (18 items) (Williams & McGee, 1991). These scales were developed from Dunedin Study data collected during childhood and adolescence and included yes/no answers to items like being "confident" and "good with pets and animals". 4) *Life satisfaction* at age 18 as indicated by a) satisfaction for life as a whole; b) satisfaction with activities engaged with in spare time; c) getting on with people and d) satisfaction with the future, each scored on a 4-point Likert scale ranging from 1 "very unhappy" to 4 = "very happy".

3.2. Adolescent anxiety and depression

Adolescent mental health was indicated by measures of anxiety and depression symptoms at ages 15 and 18 years in G2 Study members. At 15 years, the Diagnostic Interview Schedule for Children (Costello, Edelbrock, Kalas, Kessler, & Klaric, 1982) was conducted to assess symptoms over the past year according to DSM-III criteria (McGee et al., 1990). At age 18 years, the interview was made up of items from the "Diagnostic Interview Schedule" (version 111- R) with questions rephrased to give one-year prevalence estimates (Feehan, McGee, Nada-Raja, & Williams, 1994). Some minor changes to questions were also made to take account of idiom differences between New Zealand and the United States (Feehan et al., 1994).

3.3. Positive parenting

Parenting data were obtained as close as possible to the third birthday of the first child or step-child (G3) of Dunedin Study members (G2) during a home visit. The average age of the assessed G3 children was 39 months (SD 4.8; range 32–60 months). Their Dunedin Study member parent (G2) was aged between 21.5 and 44.7 years at the time they were assessed (mean age 32.9 years; SD 5.5; mean age at the time of the G3 child's birth was 29.7; SD 5.5; range 17.7–41.5).

Parent-child interactions were filmed in three semi-structured situations lasting a total of 45 min (National Institute of Child Health and Human Development Early Child Care Research Network, 1999). Parents participated alone with their children. Participants were also asked to ensure that other people were absent from the area. The first, "free play", involved setting out a standard and varied set of age-appropriate toys on the floor in a quiet area of the home for the parent and child to use in play. Parents were instructed to engage the child as they might if they he had free time on their hands. The second, "competing-task" situation involved the parent completing a questionnaire and concurrently not permitting the child to engage a second set of clearly visible and attractive toys which are within easy reach; the child was given only a single soft toy to play with. Finally, the parent and child were asked to complete the seven activities using the toys from the competing-task activity. These tasks include building tasks and puzzles. The parent was requested to provide whatever assistance was needed to complete the tasks without doing them for the child.

Film of the three situations was independently coded using 7-point scales (National Institute of Child Health and Human Development Early Child Care Research Network, 1999). Six of these scales were used to evaluate parental behaviour: sensitive responsiveness, intrusiveness, detachment, stimulation of cognitive development, positive regard for the child, and negative regard for the child. For each rating, scores across the tasks were averaged and the six averaged ratings were used to construct the latent variable of positive parenting behaviour.

3.4. Concurrent parent anxiety and depression symptoms (self-reported)

Before the home visit, parents completed a version of the Malaise Inventory and the depression measures used earlier in the Dunedin Study (McGee, Williams, Kashani, & Silva, 1983; McGee, Williams, & Silva, 1986; Rutter, Tizard, & Whitmore, 1970), which was used to construct a self-reported measure of depression and anxiety symptoms that were concurrent with the observation of parenting. Participants responded yes (1) or no (0) to the presence of symptoms and the mean score across all items was used to create a continuous measure with higher scores indicating more symptoms.

3.5. Statistical analyses

Structural equation modelling (SEM) was used to evaluate associations between childhood disadvantage, adolescent mental health, adolescent wellbeing (i.e., life course variables), and subsequent positive parenting. Individual measurement models were first constructed for childhood family disadvantage, quality of social attachments, participation in organised clubs and groups, strengths, life satisfaction, adolescent mental health, concurrent mental health, parenting behaviour (i.e., all first-order latent variables) and adolescent wellbeing (i.e., a second-order latent variable). These measurement models identified associations between the latent variables and their indicator measures, and were partially based on previous findings (Olsson et al., 2012).

Once satisfactory measurement models were identified, the resulting latent variables were assembled into a structural model testing the relative contribution of their pathways to the parenting outcome. The SEM was also tested with and without a measure of parents' age at the birth of their child, which was included as a latent variable in the model by assuming that its reliability was 1.

SEM was performed in Mplus (Muthén & Muthén, 1998–2007). As can be seen in Table 1, rates of missingness for individual items were low, however Mplus uses all data available to estimate the model, using full information maximum likelihood. Each parameter is estimated directly without estimating missing data values for each individual in a prior analytic step (Muthén, 1999); thus all cases with valid outcome data (G2 parenting of G3) were included in the model. The fit of the model was assessed using the Comparative Fit Index (CFI), the Tucker Lewis Index (TLI) and the Root Mean Square Error of Approximation (RMSEA) goodness-of-fit measures

Table 2

Standardised parameter estimates for model 1 first and second order latent variables.

Latent Variable	Observed Variables (Age in years)	Estimate	S.E.
First order			
SES	G1 SES at G2's birth	0.79	0.02
	G1 SES when G2 was 3	0.41	0.04
	G1 SES when G2 was 5	0.88	0.02
	G1 SES when G2 was 9	0.89	0.02
Anxiety & depression	G2 Diagnosed Anxiety (15)	0.48	0.04
	G2 Diagnosed Depression (15)	0.42	0.03
	G2 Diagnosed Anxiety (18)	0.74	0.03
	G2 Diagnosed Depression (18)	0.64	0.04
Social participation	G2 Culture/Youth Groups (15)	0.38	0.06
	G2 Culture/Youth Groups (18)	0.50	0.07
	G2 Sport (18)	0.45	0.06
Strengths	G2 Self-rated Strengths (15)	0.55	0.04
5	G1 Parent Rated Strengths (15)	0.55	0.04
	G2 Self-rated Strengths (18)	0.47	0.04
	G1 Parent Rated Strengths (18)	0.45	0.04
Social Attachments	G2 Parent Attachment (15)	0.67	0.04
	G2 Peer Attachment (15)	0.46	0.04
	G2 Confidant (15)	0.47	0.06
	G2 School Attachment (15)	0.59	0.05
Life Satisfaction	G2 Satisfaction with Life (18)	0.81	0.04
	G2 Satisfaction with Time (18)	0.71	0.04
	G2 Satisfaction with People (18)	0.56	0.04
	G2 Satisfaction with Future (18)	0.46	0.05
G2 Parenting of G3	G2 Sensitivity	0.80	0.02
0	G2 Intrusiveness	-0.58	0.03
	G2 Detachment	-0.75	0.02
	G2 Cognitive Stimulation	0.68	0.03
	G2 Positive Regard of G3	0.78	0.02
	G2 Negative Regard of G3	-0.50	0.02
G2 Self-reported Anxiety/Depression	Mean of Malaise Scale Anxiety items	0.83	0.04
	Mean of Malaise Scale Depression items	0.74	0.04
Second Order	•		
G2 Wellbeing	Strengths	0.89	0.05
č	Attachment	0.86	0.05
	Life Satisfaction	0.65	0.04
	Clubs/Sport	0.64	0.08

All estimates p < 0.001.

(Muthén & Muthén, 1998–2007). Direct (unmediated) effects are presented as standardised coefficients where a coefficient corresponds to the proportion of a standard deviation change in a dependent (outcome) variable per one standard deviation change in the independent (predictor) variable. The model indirect command in Mplus provides an estimate of indirect effects and the p-values associated with these indirect effects. The final model was also run separately for mothers and fathers, but these subsamples were not large enough to carry out formal tests for differences between the models for fathers and mothers.

For all first- and second-order latent variables in the model, the standardised parameter estimates (or loadings), which show the correlation between the observed indicator variable and the latent variable, are reported in Table 2. In each of the measurement models, all indicator variables were significantly associated with the respective latent variable (p < 0.001). The childhood disadvantage and adolescent anxiety/depression loadings were moderate to large (range 0.39–0.75), while the wellbeing, parenting, and concurrent mental health loadings were large to strong (range 0.50–0.90).

Tabachnick and Fidell (2007) note that when assessing goodness of fit statistics for SEM models, a non-significant chi square statistic (ie., the data is not significantly different from the theorised model) is desired. However the chi square statistic is dependent on sample size and so in models with large samples (over 400 cases) other fit indices are more appropriate. The Comparative Fit Index (CFI) returns values of between 0 and 1 with values of 0.95 and higher indicative of good fit, and similarly, the Tucker-Lewis Index (TLI) fit indices should be above 0.95 (these are not normed so may be above 1) while Root Mean Square Error of Approximation (RMSEA) indices that are between 0.08 and 0.05 are indicative of close to good fit (Cangur & Ercan, 2015; Tabachnick & Fidell, 2007).

4. Results

Parenting data were available for 679 participants (358 (52.7%) mothers and 321 fathers: Table 1). Fig. 1 presents the model of the associations between childhood socioeconomic disadvantage, adolescent wellbeing and anxiety/depression, age at child's birth, concurrent anxiety/depression symptoms and positive parenting. The model estimates of fit were: CFI = 0.861, TLI = 0.892 and RMSEA = 0.065, which represent a less than ideal fit of the data to the theorised model The measurement loadings for the latent variables are presented in Table 2.

4.1. Pathways from childhood socioeconomic disadvantage

The total effect (direct plus indirect effects) of G2 childhood socioeconomic disadvantage on later parenting of G3 was -0.27, p < 0.001. There was a direct association (-0.18) between greater childhood disadvantage and less positive parenting (see Table 3). Childhood disadvantage also had a direct effect on age of parenting (-0.18), with those experiencing more disadvantage becoming parents at younger ages. There were indirect pathways from disadvantage to parenting via parents' age (-0.04, 95% CI -0.06 to -0.02, p = 0.001; the product of the pathways between disadvantage, parent's age, and parenting), and via adolescent anxiety/depression and parents' age (-0.007, 95 CI -0.01 to -0.001, p = 0.039). Consistent with these findings, childhood disadvantage was inversely associated with adolescent wellbeing (-0.27), resulting in a small indirect effect of childhood disadvantage on parenting (-0.07, 95%



Fig. 1. Life course predictors of parenting behaviour for 679 (358 (52.7%) women) parents. Goodness of fit statistics for the model are CFI = 0.858, TFI = 0.890 and RMSEA = 0.065

*** $p \le 0.001$, **p = 0.01, * $p \le 0.05$; p < 0.001 for all measurement model loadings. Dotted lines indicate pathways that are not statistically significant.

Table 3

Standardised parameter estimates for model 1 direct effects and correlations.

Latent Variables ($n = 679$ observations)	Estimate	S.E	р
Direct Effects			
G1 SES to G2 Wellbeing	-0.27	0.05	< 0.001
G1 SES to G2 Teen Anxiety/Depression	0.15	0.05	0.002
G1 SES to G2 Parenting	-0.18	0.05	< 0.001
G1 SES to G2 Self-Reported Anxiety/depression	0.09	0.05	0.052
G1 SES to G2 Age of Parenting	-0.18	0.04	< 0.001
G2 Wellbeing to G2 Parenting of G3	0.26	0.07	< 0.001
G2 Wellbeing to G2 Self-reported Anxiety/Depression	-0.18	0.07	0.005
G2 Wellbeing to G2 Age of Parenting	-0.02	0.06	0.712
G2 Teen Anxiety/Depression to G2 Parenting of G3	0.10	0.07	0.121
G2 Teen Anxiety/Depression to G2 Self-Reported Anxiety/Depression	0.29	0.06	< 0.001
G2 Teen Anxiety/Depression to G2 Age of Parenting	-0.20	0.06	< 0.001
G2 Age of Parenting to G2 Parenting of G3	0.22	0.04	< 0.001
G2 Age of Parenting to G2 Self-reported Anxiety/Depression	-0.06	0.04	0.185
Correlations			
G2 Wellbeing with G2 Teen Anxiety/Depression	-0.49	0.05	< 0.001
G2 Parenting of G3 with G2 Self-Reported Anxiety/Depression	-0.10	0.05	0.048

Notes: Model 1 consists of 32 dependent variables and 10 latent continuous variables with 96 missing data patterns. Goodness for fit statistics for the model are CFI = 0.858 and TLI = 0.890, RMSEA = 0.065.

CI -0.11 to -0.03, p = 0.002).

Aside from parenting, childhood disadvantage was associated with more adolescent anxiety/depression symptoms but only marginally associated with more self-rated adult symptoms of anxiety/depression (Fig. 1, Table 3). There was a further indirect effect of disadvantage on adult anxiety and depression symptoms (0.04, 95% CI 0.01 to 0.08, p = 0.007; the product of the pathways between disadvantage, adolescent, and, concurrent anxiety/depression). Childhood socioeconomic disadvantage was also indirectly associated with self-reported anxiety/depression in adulthood via wellbeing (0.05, 95% CI 0.01 to 0.09, p = 0.014).

5. Pathways from adolescent socioemotional wellbeing

5.1. Wellbeing

Higher adolescent wellbeing (G2) was correlated with lower adolescent anxiety/depression and these latent variables had different intergenerational relationships with subsequent parenting of G3 (Fig. 1, Table 3). Higher wellbeing in adolescence was directly associated with more positive parenting. Higher wellbeing in adolescence was also associated with fewer anxiety and depression symptoms at the time of parenting. There were no significant indirect pathways.

Table 4

Standardised Parameter Estimates for Models 1a (women only) and 1b (men only) Direct Effects and Correlations*.

	Model 1a: Women (n = 358) Model 1b: Men (n =			= 321)		
Latent Variables	Estimate	S.E	р	Estimate	S.E	р
Direct Effects						
G1 SES to G2 Wellbeing	-0.30	0.07	< 0.001	-0.28	0.07	< 0.001
G1 SES to G2 Teen Anxiety/Depression	0.09	0.07	0.153	0.23	0.07	0.001
G1 SES to G2 Parenting of G3	-0.18	0.07	0.011	-0.16	0.07	0.024
G1 SES to G2 Self-Reported Anxiety/Depression	0.07	0.07	0.325	0.13	0.07	0.074
G1 SES to G2 Age of Parenting	-0.24	0.06	< 0.001	-0.13	0.07	0.058
G2 Wellbeing to G2 Parenting of G3	0.27	0.11	0.015	0.22	0.09	0.011
G2 Wellbeing to G2 Self-reported Anxiety/Depression	-0.16	0.10	0.132	-0.27	0.09	0.002
G2 Wellbeing to G2 Age of Parenting	-0.03	0.10	0.755	0.06	0.09	0.531
G2 Teen Anxiety/Depression to G2 Parenting of G3	0.09	0.10	0.357	0.09	0.11	0.364
G2 Teen Anxiety/Depression to G2 Self-Reported Anxiety/Depression	0.29	0.10	0.005	0.24	0.07	0.001
G2 Teen Anxiety/Depression to G2 Age of Parenting	-0.29	0.09	0.002	0.03	0.09	0.747
G2 Age of Parenting to G2 Parenting of G3	0.22	0.06	< 0.001	0.21	0.06	< 0.001
G2 Age of Parenting to G2 Self-Reported Anxiety/Depression	-0.01	0.06	0.886	-0.11	0.06	0.073
Correlations						
G2 Wellbeing with G2 Teen Anxiety/Depression	-0.59	0.06	< 0.001	-0.45	0.07	< 0.001
G2 Parenting of G3 with G2 Self-Reported Anxiety/Depression	-0.12	0.06	0.048	-0.07	0.08	0.384

* Standardised parameter estimates for latent variables not included, but materially unchanged from the Model using the full sample.

Notes: Models 1a and 1b consist of 32 dependent variables and 10 latent variables with 55 and 69 missing data patterns respectively. Goodness of fit statistics for Model 1a are CFI = 0.891 and TLI = 0.912, RMSEA = 0.060. Goodness of fit statistics for Model 1b are CFI = 0.880 and TLI = 0.903, RMSEA = 0.061.

5.2. Anxiety and depression

In contrast, adolescent anxiety/depression symptoms were not directly related to parenting; however, they were related to anxiety/ depression at the time of parenting. There was a statistically significant indirect pathway from higher adolescent anxiety/depression to less positive parenting via younger ages at which participants became parents (-0.0, 95% CI -0.08 to -0.02, p = 0.005). Furthermore, self-reported anxiety/depression was negatively correlated with concurrent parenting (-0.10, see Table 3).

5.3. Parents' age at child's birth

As younger parents become parents closer to their adolescence, we attempted to assess the impact of age that G2 became parents on the model. It was the case that older parents tended to show more positive parenting (see Fig. 1, Table 3). However, removing parents' age from the model made no material difference to the observed pattern of associations (see Supplementary Table 1 for first and second order associations in Model 2). Goodness of fit estimates for the model without age of parenting are CFI = 0.870 and TLI = 0.900; RMSEA = 0.064: the model fit without age at parenting is not materially different from the model that includes this variable.

5.4. Models for mothers and fathers

Fit indices were similar for separate mother and father models (CFI = 0.891 and TLI = 0.912, RMSEA = 0.060 for mothers; CFI = 0.880 and TLI = 0.903, RMSEA = 0.061 for fathers). The separate model findings (see Table 4) were similar to the main findings in the overall model except that when the model was restricted to mothers, no significant association between childhood disadvantage and teen anxiety/depression was present and teen wellbeing was not related to later anxiety and depression. In contrast, no association was present for teen anxiety/depression and age of parenting for fathers. As noted above, the two subsamples were not large enough to carry out formal tests for differences between the models for fathers and mothers. Further the lower sample sizes in the separate models means the models maybe under-powered, so these results should be interpreted cautiously.

6. Discussion

Using prospective intergenerational data, we were able to explore life-course pathways from disadvantage in childhood to socioemotional wellbeing in adolescence to the positive parenting provided to the next generation of children, thereby extending prior work on the antecedents of parenting. Our findings indicate that childhood disadvantage has an influence over the life course and is directly associated with lower adolescent wellbeing, poorer adolescent mental health, earlier parenting (confirming previous work with this cohort (van Roode et al., 2017)), and less positive parenting. The results further indicate that higher adolescent wellbeing is directly associated with more positive parenting of the next generation. Adolescent mental health however, is only, indirectly associated with parenting: poorer adolescent mental health was associated with parenting at a younger age and younger parents had less positive parenting. Concurrent self-rated mental health has a weak, negative association with observer ratings of positive parenting.

The presented model is best used as theory of life-course development with the outcome being parenting, which can be used to test future hypotheses. We offer our thoughts on potential interpretations of the findings below, with the intention of indicating future avenues of exploration. We suggest that our findings support a comprehensive approach to promoting positive parenting across the life course, one that should include investments in prevention of childhood disadvantage and the enhancement of the socioemotional wellbeing of young people long before they become parents.

The findings from this research may help us to understand the life course and intergenerational implications of childhood disadvantage. This is important at a structural level where the impact of socioeconomic childhood disadvantage has recently been acknowledged by some states (see New Zealand's Child Poverty Reduction Act 2018 for example ("Child Poverty Reduction Act," 2018)) but disadvantage should also be addressed at family and community level (McLanahan, Haskins, Rouse, & Sawhill, 2014; McLoyd, 1998).

Promoting wellbeing across the life-course may have intergenerational as well as long-term personal benefits (as found in Olsson et al., 2012). The construct of wellbeing used in the present research captures aspects of wellbeing that go beyond the experience of positive emotions to include connectivity and positive interpersonal relationships (Huppert, 2009). It is likely that stronger relationships with parents, peers and the community lead to more positive parenting, as these associations have also been found in previous work (Shaffer, Burt, Obradović, Herbers, & Masten, 2009; van IJzendoorn & Bakermans-Kranenburg, 1997). This and other research from this sample (Belsky et al., 2005, 2012) indicate that supporting positive parent-child relationships during the early childhood years and beyond might also reduce childhood disadvantage, and that these positive relationships could benefit the next generation. It is also likely that good social support in adolescence, as reflected by these relationships, fosters the development of social skills. Such skills may be further developed during adulthood, enhancing wellbeing and positive parenting behaviour.

Our measure of adolescent strengths is likely to reflect self-esteem. Previous research indicates that higher domain-specific selfesteem in adolescence is associated with more positive development in adulthood (von Soest, Wichstrøm, & Kvalem, 2016), as is higher satisfaction with life (Fergusson et al., 2015; Lyubomirsky, King, & Diener, 2005). Also consistent with our findings, other research has found that participation in extracurricular activities in adolescence is associated with more positive development in adulthood, such as continuing education, better mental health and more positive parenting (Conger et al., 2012; Dibben, Playford, & Mitchell, 2017; Zaff, Moore, Papillo, & Williams, 2003). Overall it seems that greater socioemotional wellbeing in adolescence is likely to lead to better socioemotional wellbeing in adulthood, as found in previous research (Olsson et al., 2012). Adult wellbeing, may in turn contribute to more positive parenting, but further work is required to test the findings of this research in regard to wellbeing. The present findings do, however, demonstrate the utility of adolescent wellbeing, as broadly conceptualised in the present work, for predicting outcomes in adulthood.

Interestingly, adolescent wellbeing was more strongly associated with parenting in this model than either adolescent mental health or self-rated mental health symptoms as a parent. The relationship between wellbeing and mental health symptoms indicates that these are separate (even if related) constructs, and the presence of adolescent mental health symptoms does not preclude the presence of wellbeing factors that are important for later outcomes like positive parenting. This research and other work (for example, Neppl, Conger, Scaramella, & Ontai, 2009; Schofield et al., 2017; Schofield et al., 2014; Shaffer et al., 2009) highlight some modifiable factors, such as social engagement, that could be the focus of interventions aiming to support future positive parenting. Improving adolescent mental health and wellbeing is not only important in its own right but also has the potential to directly enhance future parenting and thereby benefit the next generation of children.

A strength of the present research is that parenting behaviour was rated by trained raters blind to all other information about the parents and children. Importantly, this indicates that while parents with either of a history of depression and anxiety symptoms or current symptoms may face struggles with parenting, this is not necessarily observable when they are given the chance to interact with their child under genial conditions. Another strength of this research is the availability of prospective data on three generations. The Dunedin Study has a high follow-up rate across the cohorts' lifetime and almost all eligible parents were seen as part of the parenting study. This study examined, within one model, early disadvantage, adolescent wellbeing and mental health in the prediction of positive parenting in a representative sample of both mothers and fathers who had become parents by age 41. The model helps to illustrate the complex nature of the determinants of positive outcomes and provides ecological validity in a way that assessing these factors separately cannot.

This research also has some limitations. The complexity of the model means that the model fit is less than ideal and the current sample is not large enough to conduct formal tests of differences between mother and fathers. The model also lacks a measure of wellbeing in adulthood as this was not assessed as part of the parenting study. Other limitations include that parenting was only assessed on one occasion with their first child and a small proportion did not consent to provide video data of their parenting or had G3 children who were not eligible for the video tasks at the time of their assessment. There are also a small number of G3 children who are not yet old enough to participate in the Parenting Study – these children have parents who are older than the parents assessed in the current research. Thus, although the age range of participants in the present study spans over 20 years, we do not know if the findings are generalisable to very young teen parents or parents who have their first child in their mid-40s or later and note that the small group of participants without video data (n = 23) were more likely to be younger than older parents. However, the mean of age primiparous women in New Zealand was 30.5 years in 2018 (with men parenting on average 2 years later) (Statistics New Zealand, 2019), which is similar to the mean age in the present sample so we believe that our findings are valid within the context of the wider population.

Furthermore, although the cohort was representative of the community of its origin, it underrepresents the current ethnic diversity of New Zealand particularly Māori (tangata whenua or the indigenous people) and other New Zealand cultures. This research therefore requires replication across ethnicities and cultures. It is also worth noting that around 22% of the sample (aged 48 in 2020) have not yet become parents. Further research is required to assess whether adolescent mental health and wellbeing may have impacted on their decisions around parenthood. Lastly, it is probable that other factors, such as childhood socioemotional adjustment, wellbeing in adulthood, and family composition also play a role in the life course determinants of parenting. A larger sample is required to fully assess the range and influence of the multiple life course variables that potentially contribute to parenting behaviour. It may be that controlling for such variables would change the patterns of association observed in the current research.

Drawing on rich prospective intergenerational data spanning four decades, our findings point to a need for policies that support the growth and development of young people from childhood through adolescence and into parenthood. We show a notable association between childhood disadvantage and future parenting, highlighting the potential value of policy reforms that aim to reduce disadvantage and poverty. We further show that supporting socioemotional wellbeing in adolescence is likely to contribute to positive parenting. Current shifts in international policy that prioritise the wellbeing of populations as well as economic output are supported by this research, which shows that reducing family disadvantage and improving socioemotional wellbeing during childhood and adolescence is likely to have intergenerational benefits.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.adolescence.2020.12.005.

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