

Original contribution

Childhood adversities and depression: II. Parental loss, rearing, and symptom profile of antenatal depression

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Summary

Among a total of 1,329 pregnant women, neither early loss experience by death or by separation before the age of 16 was related to any of the three depressive symptom constellations derived from Zung's Self-rating Depression Scale – Dysphoric Mood, Cognitive Disturbance, and Poor Concentration. Paternal and maternal low care and overprotection scores of the Parental Bonding Instrument, a measure of perceived rearing, had main effects on the Cognitive Disturbance and Poor Concentration scores, with significant interaction of the two predictors; Dysphoric Mood was also linked to maternal overprotection. These findings suggest that perceived parenting is a predictor of two specific symptom constellations of antenatal depression.

Keywords: Rearing; early parental loss; depression; pregnancy.

Parental loss either by death or by long-term separation is one of early human environmental factors which have attracted many researchers and clinicians to explore any association with the adult onset of depression (for review Lloyd, 1980; Tennant et al., 1980). This was echoed by Bowlby's monographs (Bowlby, 1977, 1988) giving a psychoanalytic perspective on this issue. However, researchers have not yet reached a consensus view (e.g. Zahner and Murphy, 1989). A long temporal interval between the time of parental loss and that of the onset of depression makes it unlikely that adult depression is a "reaction" to childhood parental loss. While major negative life events which precede the onset of depression are termed "precipitating factors", early experiences which are associated with later onset of depression are termed "predisposing factors" (Lloyd, 1980). It is assumed that the latter do not cause depression directly, but make indivi-

duals vulnerable to the effects of later exposure to adversity.

The next question, which arises, is what mediates the effects of early parental loss on the later onset of depression. A possible mediator is poor parenting during childhood. There have been many reports on the link between perceived parental behaviour and depression in adulthood (Brewin et al., 1993; Eisemann et al., 1984; Paykel, 1982, Perris et al., 1985, 1986). Using the Parental Bonding Instrument (PBI; Parker et al., 1979a), Parker and his co-workers (Parker, 1983a, 1983b; Parker et al., 1982) reported that it was patients with neurotic depression, but not those with psychotic depression, who had viewed their parents as less caring and more overprotective. To examine the mediating role of perceived rearing, Oakley-Brown et al. (1995), studying a community population, found that the contribution of the early loss experience was no longer significant when controlled for poor perceived parenting, measured by the PBI. Harris et al. (1986) defined "lack of care" by parents or surrogate parents as parental indifference and low parental control; they found that the effect of early loss of mother on adult depression among a female community population was mediated by the lack of care.

However, past investigations may not have been free from flaws. For example, Oakley-Brown et al. (1995) administered the PBI to measure subjects' perceived rearing during childhood. It is very likely that those individuals who had lost a parent at a very early stage of life would leave PBI items blank, so

that they would be treated as missing cases and excluded from further analysis. The interaction of the perceived rearing from a parent and the loss experience of the same parent can be examined only when the loss occurred sufficiently late for the subject to remember the parent. To avoid this bias, Harris et al. (1986) devised a semi-structured interview to assess the parenting behaviour of surrogate parents. Thus, perceived parenting in the study of Harris et al. (1986) tapped what had happened *after* the loss of a biological parent. This procedure, though, may distort the results, because those children who had been institutionalised (thus having no surrogate parents) were rated nil in terms of parental care. Also, Harris et al. (1986) did not examine perceived care by the father (or surrogate father) and by the mother (or surrogate mother) separately. Therefore, it may be warranted to investigate the effects of and interaction between the perceived rearing by a parent and the loss experience of the *other* parent. We adopted this method in the present study.

A second research question of this paper is whether there are differential effects of low care and overprotection respectively on the onset of adult depression. Parker (1983a) claimed that "affectionless control" (i.e. low care *and* overprotection) was over-represented among patients with depression. Although a series of studies by Parker and co-workers (Parker, 1979; Parker et al., 1987; Parker and Hadzi-Pavlovic, 1992) strongly suggested that this category of anomalous parenting would result in adult depression, the proportional main effects and the interaction of care and overprotection still remain to be investigated.

A third question posed in this paper is whether there is a specific link of early experiences with different symptom profiles of depression, rather than with the diagnosis of depression; depression is not a homogeneous condition from the symptomatic perspective. Factor analyses of depression rating scales constantly show that three or more factors may emerge (Faravelli et al., 1986; Hamilton, 1959, 1967; Louks et al., 1989; Paykel, 1971). Using a Japanese university student population, Sakamoto et al. (1998) extracted three factors from Zung's (1965) Self-rating Depression Scale (SDS); Sugawara et al. (1998) also found three factors of SDS scales among Japanese pregnant women population. Little has been studied as to whether specific symptom clusters are linked to childhood adversity. Excessive dependence on total score of depression scales is

undesirable (Newman et al., 1991; Tennen et al., 1995), because various profiles of heterogeneous symptoms are contained in the single dimension of "severity".

As pointed out by Harris et al. (1986), further complications stem from the much longer causal period hypothesised for the impact of early parental loss than those periods required for the impact of major life events. Such investigation should identify the lifetime rather than point-prevalence of depression, which is obtainable only by direct interview. However, a direct interview is time consuming so that the number collected in the sample will be limited. An alternative may be to use a self-rating questionnaire such as the SDS to assess point symptomatology among individuals who are known to be at a higher risk of depression onset. We selected pregnant women in this study because we had previously shown that pregnant women are at higher risk of developing depression (Kitamura et al., 1996).

We (Kitamura et al., 1998) have reported elsewhere that the dysphoric mood observed during early pregnancy was predicted by unwanted pregnancy, pre-menstrual irritability, public self-consciousness, and maternal overprotection, whereas cognitive disturbance during early pregnancy was predicted by unwanted pregnancy, low husband care scores, low annual income, low private self-consciousness, and smoking habit together with low maternal and paternal care and maternal overprotection. Early loss experiences were studied, but were not identified as significant predictors. In this study, however, all the predictor variables were entered into the regression equation, excluding those subjects with missing PBI data due to unavailability of parents. Neither did we examine the interaction of PBI scores with the severity of depression. These methodological flaws will be amended in the present reanalysis of the same data set.

Method

This is part of a larger study (Kitamura et al., 1993, 1996, 1998). The subjects and method have been described in a companion paper (Kitamura et al., 1998). Briefly, a total of 1,329 consecutive women who attended an antenatal clinic in the obstetric department of a general hospital in Kawasaki, Japan, were invited to participate in a questionnaire survey. Their mean age (SD) was 28.0 (4.3) years with a range between 16 and 42 years; 635 (47.8%) of them were expecting their first baby. They were administered a set of questionnaires, which included:

- a) the Self-rating Depression Scale (SDS; Zung, 1965),
- b) items tapping early loss experiences, and
- c) the Parental Bonding Instrument (PBI; Parker et al., 1979a).

The SDS was developed to measure the severity of depression and has been widely used in clinical and epidemiological studies. It consists of 20 items with a 4-point scale. The original SDS assigned scores of 1 to 4 to responses, but we changed the scoring method to 0 to 3, so that the lowest possible SDS score would be 0 (Kitamura et al., 1994). A factor analysis of the SDS scores among the present sample of women revealed three factors – dysphoric mood, cognitive disturbance, and poor concentration (Sugawara et al., 1998). The scores of these subscales were calculated by adding the scores of the items having high loadings on each factor.

Early loss experience was defined, following Brown et al. (1977), as either death or separation from either parent for 12 months or longer before the age of 16.

The PBI is a self-report retrospective measure of how the child viewed the parent's attitudes towards her. The PBI's two subscales – care and overprotection – were derived from a factor analysis (Parker et al., 1979a). The total number of the PBI items was 25 in its original format, but these were reduced to the 16 with the highest factor loadings in Parker et al. (1979a) study. They were 8 care and 8 overprotection items. Women were allocated into either the lowest quartile of the care score (paternal care score <13, maternal care score <16) or the remaining "optimal" group; similarly, they were allocated into either the highest quartile of the overprotective score (paternal overprotection >8, maternal overprotection >8) or the remaining "optimal" group.

Usable SDS results were returned by 1,200 women. Among them, complete paternal care data were obtained for 955 women; paternal overprotection data for 958 women; maternal care data for 989 women; and maternal overprotection data for 1,000 women.

Since the loss of one parent may lead to lack of data on the PBI scores of the parent, we examined the effects of the experience of the mother's loss and the father's perceived rearing on the three depressive symptom constellation scores only among those women with an intact father (i.e. never lost before the age of 16) and vice versa. For each analysis, the type I error was controlled for by the Bonferroni method by setting α at 0.004 (0.05 divided by 3 (depressive symptom constellations) and by 4 (two loss experiences and two rearing patterns)). Then, analysis of variance (ANOVA) was performed for each symptom constellation score by predictor variables identified as significant through bivariate analyses. Statistical analyses were carried out by using the SPSS-X programme (SPSS Inc., 1980).

Results

As expected, the attribution rate of report of the perceived rearing by a parent was lower among those women who had experienced loss (either death or separation) of the parents. Thus, the complete paternal care score was obtained from 59.7% [83/139] and 82.2% [872/1,061] of those who had experienced loss of father and those who had not ($\chi^2(2) = 36.8$, $p < 0.001$). The complete paternal overprotection score was obtained from 60.4% [84/139] and 82.4% [874/1,061] of those who had experienced loss of father and those who had not ($\chi^2(2) = 35.4$, $p < 0.001$). The complete maternal care score was obtained from

70.3% [45/64] and 83.1% [944/1,136] of those who had experienced loss of mother and those who had not ($\chi^2(2) = 6.0$, $p = 0.015$). The complete maternal overprotection score was obtained from 71.9% [46/64] and 84.0% [954/1,136] of those who had experienced loss of mother and those who had not ($\chi^2(2) = 5.5$, $p = 0.019$).

Among the women with an intact father, the dysphoric mood score was slightly (but not significantly) higher among the high paternal overprotection scorers, while the cognitive disturbance and poor concentration scores were significantly higher among the low paternal care scorers as well as among the high paternal overprotection scorers (Table 1).

Similar associations were found among the women with an intact mother. Dysphoric mood was significantly associated with maternal overprotection, whereas the cognitive disturbance and poor concentration scores were significantly associated with both maternal low care and overprotection (Table 2).

No maternal or paternal loss experiences of any kind were linked to the three symptom scores among first-trimester pregnancy women.

The above bivariate analyses revealed that the dysphoric mood score was linked only to maternal overprotection, while the cognitive disturbance and poor concentration scores were linked to both paternal and maternal low care as well as overprotection. Therefore, we subsequently carried out ANOVA for the cognitive disturbance and poor concentration scores by the PBI categories. Among women without loss of father, both maternal care and maternal overprotection had main effects on the cognitive disturbance score and the poor concentration score. Significant interaction between the two PBI categories was found only for the poor concentration score (Table 3). Among the women without loss of mother, both paternal care and paternal overprotection had main effects on the two symptom scores. The interaction of the two PBI categories was not identified (Table 3; Fig. 1).

Discussion

As expected, women who had lost a parent either by death or long-term separation before age of 16 were significantly more likely to decline to answer the PBI. This finding cast doubt on the interpretation of past investigations (Oakley-Brown et al., 1995; Kitamura

Table 1. *Depressive symptom constellation scores by early maternal loss experiences and perceived paternal rearing among women without early paternal loss experiences*

Early experiences	Dysphoric mood	Cognitive disturbance	Poor concentration
Maternal death			
No (n = 1,041)	6.01 (1.72)	9.00 (2.24)	8.00 (2.14)
Yes (n = 20)	5.80 (1.32)	8.35 (2.98)	7.00 (2.38)
t	0.54	1.18	2.07
Maternal separation			
No (n = 1,053)	6.00 (1.71)	8.98 (2.24)	7.97 (2.14)
Yes (n = 8)	6.38 (2.07)	9.50 (2.93)	8.88 (2.59)
t	0.61	0.06	1.19
Paternal care			
Lowest quartile (n = 189)	6.15 (1.72)	9.62 (2.25)	8.48 (2.22)
Optimal (n = 683)	5.89 (1.62)	8.76 (2.32)	7.81 (2.04)
t	1.89	4.47*	3.90*
Parental overprotection			
Optimal (n = 569)	5.86 (1.66)	8.66 (2.33)	7.74 (2.08)
Highest quartile (n = 305)	6.15 (1.60)	9.50 (2.32)	8.34 (2.07)
t	2.49	5.09*	4.11*

SD in parentheses: *significant if $p < 0.004$.

Table 2. *Depressive symptom constellation scores by early paternal loss experiences and perceived maternal rearing among women without early maternal loss experiences*

Early experiences	Dysphoric mood	Cognitive disturbance	Poor concentration
Paternal death			
No (n = 1,079)	6.01 (1.72)	9.01 (2.42)	8.02 (2.14)
Yes (n = 57)	5.88 (1.56)	9.37 (2.24)	8.44 (2.03)
t	0.57	1.10	1.44
Paternal separation			
No (n = 1,090)	6.00 (1.71)	9.01 (2.40)	8.02 (2.13)
Yes (n = 46)	6.07 (1.61)	9.33 (2.68)	8.70 (2.12)
t	0.25	0.86	2.12
Maternal care			
Lowest quartile (n = 231)	6.16 (1.70)	9.61 (2.34)	8.43 (2.14)
Optimal (n = 713)	5.92 (1.62)	8.79 (2.36)	7.88 (2.08)
t	1.93	4.64*	3.48*
Maternal overprotection			
Optimal (n = 627)	5.86 (1.63)	8.75 (2.38)	7.87 (2.12)
Highest quartile (n = 327)	6.23 (1.70)	9.46 (2.30)	8.32 (2.02)
t	3.29*	4.45*	3.20*

SD in parentheses: *significant if $p < 0.004$.

et al., 1998) which entered both PBI scores and early loss experiences into a multivariate analyses simultaneously. To avoid a possible bias of this kind, we examined the effects and interaction of the loss experience of one parent and the perceived rearing by the other parent separately for the two combinations. Our study showed that loss experiences of a parent did not have effects on the severity of any of the

three depression symptom constellations, whereas the perceived parenting did so. Instability of the link between early parental loss and adult depression has often been pointed out (Harris et al., 1986; Zahner and Murphy, 1989). The effects of early parental loss may, if they exist, be indirect; they may be mediated by other factors or they may be confounded. For example, in a companion paper, we reported that

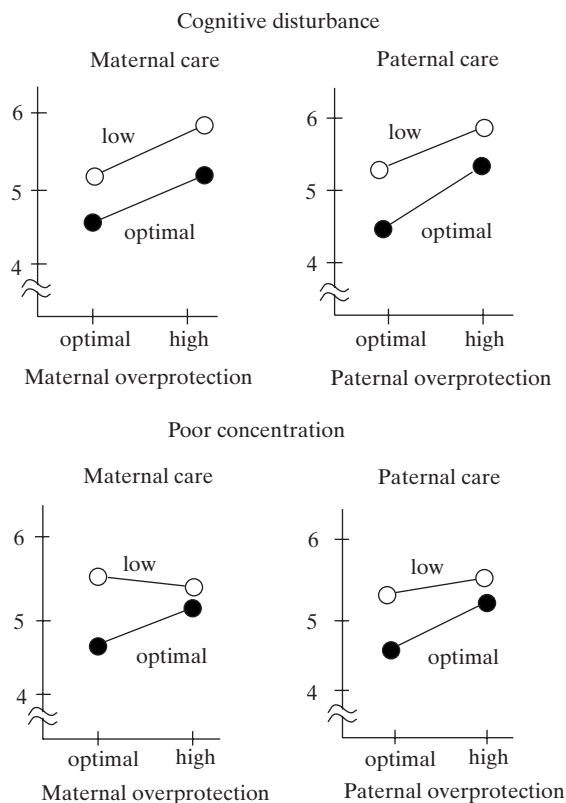


Fig. 1. Interaction of PBI scores on depressive symptom constellation scores

Table 3. Effects of PBI scores on depressive symptom constellation scores by ANOVA

PBI items	Cognitive disturbance	Poor concentration
	F	F
Main effects		
Maternal care (MC)	11.5**	6.5*
Maternal overprotection (MO)	9.5**	5.0*
2-way interaction		
MC × MO	0.0	4.6*
Main effects		
Paternal care (PC)	12.3***	7.9**
Paternal overprotection (PO)	19.7***	13.8***
2-way interaction		
PC × PC	0.5	1.5

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

women who had experienced either death of or separation from the father reported having received less care from the mother. On the other hand, the experience of loss of the mother did not show significant effects on the perceived rearing of the father

(Kitamura et al., 1998), confirming clinical observations (Wallerstein and Kelly, 1975). The situation of loss experience rather than loss per se may be a stronger determinant of the link with adult psychopathology (Breier et al., 1988; Tennant, 1988). For example, Colletta (1979) found that poor maternal parenting was linked to divorce only when the latter resulted in economic difficulty. Heatherington (1979) claimed that divorce was not a single event, but rather a sequence of experiences involving a transition in the lives of children. Unfortunately, we failed to investigate the detailed situations before and after the loss experience, in our questionnaire survey. Future research may be recommended to take into account the current psychological impact of a loss experience on the subject.

The present study suggested that perceived parenting would be a more potent predictor of depression severity than loss of a parent in childhood. Moreover, poor parenting predicted cognitive disturbance and poor concentration, but little, if any, dysphoric mood. Most previous investigations on the relationship between perceived parenting and depression have focused on depressive *illness*. Thus, the presence or absence of the diagnostic category of depression was examined in terms of its association with the profile of perceived parenting. To the best of our knowledge, this study is the first to examine the relationship between perceived parenting and the *symptomatic* profile of depression. It is surprising that dysphoric mood was found to be little associated with poor parenting styles, except for maternal overprotection, because dysphoric mood is essential in depressive symptoms. Using the same subjects, we (Kitamura et al., 1996) reported that the *cases* of depression were characterised by low care and overprotection by the parents, retrospectively reported by the subjects. Therefore, even if low care/overprotection by the parents during childhood is associated with vulnerability to developing depression, it is not strongly linked to increased severity of dysphoric mood. On the other hand, cognitive disturbance was strongly associated with low care and overprotection by both parents. The cognitive theory of depression suggests that cognitive dysfunction is an underlying and perhaps stable trait to start the onset of depression in the face of adversity. If our finding is replicated by further studies, it may be speculated that the link between poor parenting during childhood and depression in adulthood is mediated by enduring cognitive disturbance.

It is of interest to note that perceived poor parenting has been reported to be linked not only to depression but also to many other psychological phenomena such as anxiety disorder (Parker, 1981), earlier onset and relapse of schizophrenia (Parker et al., 1982), attempted suicide (Goldney, 1985) homosexuality (Parker, 1983b), conduct and oppositional disorders (Rey and Plapp, 1989), perceived low social support (Sarason et al., 1986) and poor marital adjustment (Kitamura et al., 1995). Therefore, poor parenting may precede a more general factor of poor mental health, rather than any specific disorder. More study may be warranted to explore the association of perceived parenting with personality traits (Furukawa, 1992). Poor self-esteem may be a candidate mediator because ample evidence shows that cold and autonomy denying attitudes of parents are associated with reduced self-esteem among children (Bartle et al., 1989; Conte et al., 1996; de Man, 1981; Felson and Zielinski, 1989; Forsman, 1989; Gecas and Schwalbe, 1986; Growe, 1980; Hoelter and Harpe, 1987; Isberg et al., 1989; Kawash et al., 1985; Litovsky and Dusek, 1985; Medinnus, 1965; Oppenshaw et al., 1984).

The link between low care and overprotection and the severity of poor concentration is difficult to explain. However, poor concentration explained only 33.0% of the total variance of the SDS scores and it was correlated with the cognitive dysfunction ($r = 0.24$) and dysphoric mood ($r = 0.27$) (Sugawara et al., 1998).

Comments on the relevance of the present findings on community interventions and preventions may deserve space. Because pharmacological interventions are not appropriate due to their potential risks to a foetus, psychological approaches should be given priority. Our study suggests potential areas of psychotherapeutic interventions. Cognitive behavioural therapy may deserve consideration because women with antenatal depression were characterised by cognitive disturbance whereas in-depth psychotherapy may be focused on early parent-child relationship because of the link between perceived poor parenting and depression. Clinical studies may be warranted to examine the effects of cognitive-behavioural and other types of psychotherapy on antenatal depression.

Costello et al. (1993) emphasised the importance of developmental view of mental disorders. Mental illnesses have precursors, a prodromal phase, onset, course, outcome, and an aftermath. Antenatal de-

pression seems to have precursors in the early stage of life. We must be aware that community intervention for children under poor parenting with or without an experience of parental loss has not only immediate implications but also possible long-term benefits (primary prevention). Social services for divorced women (and men) should include not only financial and occupational supports but also assessment of parenting of the responsible parent (Reder and Lucey, 1995). More social and psychological interventions should be provided for women who found difficulty in having affectionate bond with the child. Educators should be more sensitive to the need of care of children who perceive their parents less affectionate and overprotective. School psychologists may be consulted. Our study may also provide a better means to identify pregnant women who are at risk of or already suffer from antenatal depression (a prodromal phase and onset); early detention may be followed by shorter duration or less severity of the illness (secondary prevention). Community nursing services for pregnant women may be advised to pay special attention to mental state. Identification of women at risk may lead to mental health services to prevent further relapse (tertiary prevention).

Limitations of the present study should be noted here. Firstly, we dealt with the severity of three different symptom groups. Although these reflect different aspects of depressive disorder, they are not necessarily equivalent to the severity of depressive disorder exclusively. Other psychopathologies such as anxiety and personality disorders are likely to increase the scores of these symptom constellations. Our subjects may have included those within different diagnostic categories. Future study should examine the relationship between parenting styles and the severity of symptom constellations among those subjects diagnosed as suffering from depressive disorder.

Secondly, this study was cross-sectional and thus subject to the bias due to the current mental state of the subject. Some reports claim that the perceived parental attitudes were not biased by the current mental state, but little has been reported as to the specificity of symptom profiles on the reporting of the childhood experiences.

Thirdly, the subjects were limited to pregnant women; different findings may be obtained among men and women in different situations. Any generalisation should be cautious until more data are collected.

However, the present study indicates the possible mediation of cognitive disturbance between poor parenting during childhood and adult depression. To confirm this hypothesis, subjects who are currently free from depressive illness should be given the PBI and tests of cognitive sets, and then prospectively followed-up for some time to examine if these variables can predict the future onset of depressive disorder.

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