

Maternal Depression and the Emotional Development of the Child

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Ninety-two women and their first-born children took part in a longitudinal survey of maternal mental health. When the children were four years old, their mothers were interviewed by means of the Behavioural Screening Questionnaire, and the children's problems were rated by a psychiatrist, who was unaware of the mothers' psychiatric histories or of assessments of their current health. As expected, mothers who were concurrently depressed reported significantly more behavioural difficulties in their children. Marital disharmony during pregnancy and a history of paternal psychiatric problems were also associated with later childhood behavioural difficulties. Children who scored below average on the McCarthy scales of cognitive abilities were also reported by their mothers to have more behavioural problems, but the children's behavioural difficulties at four showed no clear links with post-natal depression.

While it is accepted that a child's emotional and intellectual development is strongly influenced by his/her early relationship with the parents, in particular the mother, the precise role played by parental psychiatric disturbance in the establishment and perpetuation of a child's abnormal behaviour is more uncertain. Earlier studies (see Rutter, 1966) assumed a direct relationship between parental and child disability, but more recently (Billing & Moos, 1983; Rutter & Quinton, 1984) it has been suggested that the link may be made through the disturbed family relationships consequent upon the parental psychiatric illness. Rutter (1985) cites four possible mechanisms underlying links between parental psychiatric disorder and childhood behaviour disturbance, viz. genetic, a direct environmental impact of parental mental illness, an indirect effect of parental mental disorder, and the ill effects on the children deriving from correlates of parental mental illness rather than from the disorder itself. In the last respect, he refers to the frequency with which mental disorder is associated with marital discord, which often antecedes the psychiatric condition. It is suggested that most evidence supports an indirect association, with something like marital discord mediating the link. Furthermore, there is little evidence to support the notion that there is a greater effect of family influences during the first year of a child's life than at other times.

Mothers of pre-school-aged children show a higher frequency of emotional disturbance (Brown & Harris, 1978; Richman, 1978), and there is a well recognised association between maternal depression and concurrent behavioural abnormalities in two- and three-year-old children (Richman *et al*, 1975;

Mills *et al*, 1985; Pound *et al*, 1985). Social disadvantage, the gender of the child, young siblings, marital discord, and parental personality disorder have all been suggested as significant factors in the link between maternal depression and childhood behavioural disorder (Rutter *et al*, 1975*a,b*; Cooper *et al*, 1977; Rutter & Quinton, 1984).

Despite an awareness that childbirth represents a period when women are at high risk for psychiatric disorder (Brockington & Kumar, 1982), there have been few studies of the long-term sequelae for the children of mothers who have experienced post-partum psychotic or neurotic depression. Weissman *et al* (1972) showed that about three-quarters of the children of depressed mothers were emotionally or behaviourally disturbed. Richman (1978) found an association between mild to marked depression in mothers and behavioural disturbance in their three-year-old children, and also noted that the disturbed behaviour and maternal depression tended to be concomitant. Some of these findings were confirmed by Ghodsian *et al* (1984). Uddenberg & Engleson (1978) showed an association between an abnormal post-natal maternal mental state and disturbed behaviour in children aged four and a half years, although both the mental state of the mothers and the behavioural disturbance of the children were idiosyncratically defined.

More recently, Ghodsian *et al* (1984) showed that child behavioural problems at 27 and 42 months tended to be related in an interactive way with concurrent maternal depression and depression at 14 months post-natally. Wrate *et al* (1985) found no relationship between a prolonged post-natal maternal depression and behavioural disturbance in three-year-old

children, although children whose mothers had brief post-natal depressive episodes showed more behavioural disturbance than those whose mothers had not been depressed.

It seems likely that even if maternal depression as such does not lead to behavioural disorder in three- or four-year-old children, it may exert an effect on parent-child interaction and attachment. A depressed mother is less likely to stimulate her child actively through play and conversation, to respond to a child's signals, or to teach the child specific skills, all of which are important influences on a child's early development (Herbert *et al.*, 1982; Livingood *et al.*, 1983; Mills *et al.*, 1985).

We report the results of a longitudinal study on the mental health and social circumstances of 119 first-time mothers, from early pregnancy to four years post-partum. The cognitive development of the children has been reported elsewhere (Cogill *et al.*, 1986). This report refers to measures of behavioural disturbance in the children.

Method

The four-year-old children were seen with their mothers, and behavioural and emotional disorders were assessed by means of the Behaviour Screening Questionnaire (BSQ; Richman & Graham, 1971), a structured interview of proven reliability and validity which is a sensitive determinant of child psychiatric disorder in whole population studies and in in-patients attending child psychiatric clinics. The mothers were interviewed by a child psychiatrist, who inquired about the child's eating, sleeping, soiling, habits, temper tantrums, dependency, worries, fear, activity, concentration, relationships with peers and siblings, and relative ease of management.

Of a consecutive series of 119 first-time mothers attending the obstetric clinic of a London teaching hospital, 99 women were investigated when their children were four years old. Seven of these mothers were unable or unwilling to participate in this part of the investigation. Only women who spoke adequate English, lived with a husband or partner, and who 'booked' obstetric care by the 14th week of pregnancy were included in the original survey; the methodology of assessment of the mothers is described elsewhere (Kumar & Robson, 1984). Each mother was clinically assessed at intervals by a psychiatrist using a standardised semistructured interview, and for the purposes of this study the children of women who were rated as 'cases' of depression at different stages of the study were compared with the rest of the sample, i.e. during the whole of pregnancy, up to three months post-partum, from delivery to 12 months post-partum, and at four years. Information was available from the original survey about the mothers' personal and family psychiatric history, and that of the fathers, their social class, and the mothers' educational achievements. The quality of the marital relationship was assessed during pregnancy and again when

the child was four years old. An operational definition of 'past psychiatric history' was employed, viz. a course of treatment from the family doctor or specialist for nervous or emotional problems. Obstetric and paediatric case notes were scrutinised and a score compiled reflecting the degree of risk to the neonate's health according to the method of Prechtl (1967); one set of case notes was not available and for this measure there were 91 subjects. Hypotheses about factors which might adversely affect the children's behaviour were formulated, and predictions were examined using χ^2 tests and parametric analyses.

Results

Predictions about individual associations with increased child behavioural problems were tested by comparing the children's BSQ scores as a function of selected variables, such as the presence or absence of maternal depression at particular times in the child's life, the child's gender, parents' social class, etc. (Table 1). Mothers who were clinically depressed at the time they were interviewed about their children, described significantly more behavioural and emotional problems in them. Maternal depression at other times in the child's life bore no significant relationship to increased child behavioural difficulties, although the presence of post-natal depression early on (0-3 months) tended to do so. Women whose marriages were characterised by disharmony and conflict, and those whose partners had previous psychiatric problems, also reported more problems in their children; our previous research (Kumar & Robson, 1984) had shown that post-natal depression was itself closely related to these factors, and we, therefore, also examined potential interactions between antecedent variables by means of multivariate analyses.

Neither log nor square-root transformation of the BSQ scores made any material difference to the results, and analyses of untransformed scores are therefore presented. The relatively small size of the sample also rendered it impractical to look for the influence of maternal depression at different times, for example by comparing the presence of maternal depression during a given period with the group of women who had no history of depression up to that time. Parametric comparisons of children's BSQ scores are not the usual method of analysis, because in clinical practice a threshold score of 10 is used as a clinically significant index of behavioural disturbance (Richman & Graham, 1971). The child psychiatrist had rated 14 of the 92 children as scoring 10 or more on the BSQ, and categorical subdivision into groups of children scoring 0-9, or over 10 enabled us to examine by means of χ^2 tests what factors were associated with clinically significant levels of behavioural disturbance in the children. Links were found with concurrent ($P < 0.02$) but not post-natal depression, with marital conflict during pregnancy ($P < 0.05$), and with a positive paternal psychiatric history ($P < 0.001$). These results were, therefore, entirely consistent with the univariate parametric analyses, and suggest that no new or additional antecedent influences are evident when one tests the upper end of severity of child behavioural disturbance.

TABLE I
Relation between children's behavioural disturbance and selected 'predictor' variables

'Predictor' variable	No. of subjects	Children's BSQ scores (s. e.)
<i>Maternal psychiatric disturbance</i>		
Past psychiatric history		
No	62	5.74 (0.39)
Yes	30	5.57 (0.66)
Depression in pregnancy		
Absent	73	5.58 (0.37)
Present	19	6.11 (0.78)
Post-natal depression (0-3 months)		
Absent	77	5.43 (0.34)
Present	15	7.00 (1.02)*
Post-natal depression (0-12 months)		
Absent	70	5.41 (0.36)
Present	22	6.55 (0.81)
Concurrent depression (at 4 years)		
Absent	84	5.44 (0.34)
Present	8	8.25 (1.31)**
<i>Other 'predictor' variables</i>		
Sex of child		
Girl	50	5.40 (0.42)
Boy	42	6.02 (0.55)
Social class		
1-3N	72	5.43 (0.38)
3M-5	20	6.60 (0.69)
Maternal education		
O levels	41	5.66 (0.46)
A levels	51	5.71 (0.48)
Precht Index		
0-6	68	5.65 (0.42)
7+	23	5.74 (0.53)
Marital conflict (pregnancy)		
Present	13	7.69 (1.26)
Absent	79	5.35 (0.32)**
Marital conflict (4 years)		
Present	19	6.84 (0.93)
Absent	73	5.38 (0.34)*
Husband's psychiatric history		
Present	10	8.30 (1.40)
Absent	82	5.37 (0.32)***

* $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$ (d.f. 1, 90).

TABLE II
Stepwise multiple-regression analysis with children's BSQ scores as dependent variable

Independent variables	Variance accounted for	F	d.f.	P
Husband's psychiatric history	28.5%	7.98	1,90	<0.005
+ Marital conflict in pregnancy	35.5%	6.43	2,89	<0.002
+ Maternal depression when child aged 4	40.5%	5.75	3,88	<0.001

Stepwise multiple-regression analyses (SPSS, 1983) were then carried out in which the children's BSQ scores were taken as the dependent variable. Three of the factors listed in Table I were found to exert a significant effect, and together they accounted for 40.5% of the overall variance. These factors were a history of psychiatric problems in the husbands, marital conflict during pregnancy, and concurrent maternal depression (i.e. at four years) (Table II). Maternal depression at other times did not add significantly to the effect of these variables, nor did any of the other potentially relevant antecedent variables, such as child's gender, parent's social class, mother's educational attainment, or perinatal and obstetric hazard (Precht Index scores).

Discussion

These results point to an expected relationship between *concurrent* maternal depression and behavioural disorder in the child at age four, and they are consistent with the findings of others (c.f. Richman *et al*, 1975; Cox *et al*, 1987).

An association has previously been reported by us (Cogill *et al*, 1986) between maternal post-natal depression and poorer cognitive ability of the children at four. Moreover, mothers were more likely to report behavioural problems in children of poorer cognitive ability ($P < 0.05$), and there was an inverse correlation between the children's scores of cognitive ability and the psychiatrist's rating of behavioural disturbance ($r = 0.37$, d.f. 90, $P < 0.001$). However, these patterns and the patterns of associations between potential antecedent variables and later behavioural problems as reported here show some important differences, suggesting that while there may be some overlap, there may also be subtle differences in the ways that cognitive and behavioural problems in children are mediated. Thus there was a suggestion of a similar association between early post-natal depression and later behavioural problems in the children, but the multiple-regression analyses showed that the primary links were with factors which we had previously shown to antedate post-natal depression, viz. conflict in the marriage and reports by the mothers during pregnancy that their spouses had previously consulted for psychiatric difficulties (Kumar & Robson, 1984). Women who reported conflict in the marriage during pregnancy were also more likely to report similar conflict when the child was aged four ($\chi^2 = 6.15$, d.f.1., $P < 0.05$). The presence of maternal depression may reflect or cause greater marital problems, but either way one consequence of such a combined effect is a detrimental influence on the child's behaviour (Quinton & Rutter, 1985). The correlation between lower scores on psychological tests such as the McCarthy scales and higher ratings on behavioural problems in the children is not a new finding (e.g. Richman *et al*, 1982). It may be that children with relatively lower cognitive abilities are more difficult for their mothers to handle. Alternatively, a depressed mother may have problems in relating to her child, who consequently becomes 'difficult' and less amenable to stimulation, resulting in relatively lower cognitive ability.

Recent studies (Emery, 1982) have suggested that it is family discord (and hostility) which largely accounts for the relationship between parental psychiatric disorder and disturbance in the child. Our own results are consistent with this view. Maternal

depression *per se* may contribute to the occurrence of disturbed behaviour in the child, but other associated factors, which constitute an important part of the child's environment, appear to exert more powerful effects. One way of encapsulating the problem is to consider the possibility of a woman married to a vulnerable, disturbed spouse becoming depressed after childbirth. The two may well have been involved in marital conflict before the birth of the child, and this may continue or become exacerbated, resulting in disturbed behaviour in the child, particularly if he/she also shows signs of falling behind cognitively.

Considerable evidence attests to the high frequency of clinical depression in women following childbirth (Pitt, 1968; Weissman *et al*, 1972; Kumar & Robson, 1984) and if, as our study indicates, the association with family discord and paternal psychiatric illness contributes to deleterious effects on the emotional, behavioural, and cognitive development of the children, then the early detection and treatment of maternal depression is important, not only to relieve distress in the mothers and their spouses, but also, perhaps, to prevent disturbance in the children. Successful prevention is more likely to be achieved if fathers as well as mothers are included in the therapeutic work.

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