Current topic**Maternal depression and impact on children's development**

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The association between mental disorder in parents and abnormalities in their children's development is well established. It is strongest when parents have a personality disorder, or a chronic or recurrent depression, or emotional disturbance, and possibly somewhat less if they have schizophrenia.¹ In the community depressive disorders are widespread with prevalence for non-bipolar depression in women ranging from 4–9%.² Prevalence rises to 25% among mothers in urban populations with children of school age³ and to 40% among metropolitan working class mothers with young children.^{4 5} Puerperal psychoses and postnatal depression may be of particular importance because of the possible effect on the early development of the relationship between mother and child. Puerperal psychoses are rare⁶ but the onset of neurotic depression is particularly common in the three months after delivery; a new episode occurring in 10–15% of women.⁷ It may also occur more often in the first trimester of pregnancy.⁷

If maternal depression does have an important adverse effect on children's development, it is a major health issue. There are, however, reasons to think that the association between maternal depression and various indices of disturbed development in children are not a straightforward consequence of the child's exposure to depressive symptoms.

Strength of the association between maternal depression and child psychiatric disorder

When a mother is depressed, the rates of psychiatric disturbance in the children are commonly reported as between 30 and 50% whatever the age of the child.^{8–11} In at least one study much lower rates (12% according to the mother) have been recorded,¹² but in all cases, rates of disorder in the children of depressed mothers are usually two or three times those found among normal control mothers.

Assessing the association is complicated not only

by the age of the child at evaluation, but by what measures are used, the criteria for diagnoses in the parents and children, the timing of the onset of the parental disorder,¹³ and the source of information about the child—for example, depressed mothers may over report a child's symptoms.^{12 14} The term depression also covers a wide variety of other disorders. The Yale Family Study of Major Depressive Disorders distinguished types of parental depression according to their association with different types of anxiety disorder and found rates of child disturbance varying from 15–42% according to parental diagnosis.¹⁰ Parental diagnoses were lifetime diagnoses, but child diagnoses were current, and in the study parents were both male and female 'primary unipolar depressives'. Beardslee *et al*, were unable to separate rates of disorder in the children of parents with bipolar as opposed to unipolar disorders because of the methodological differences between studies, and because of the young age of some parents reported as 'unipolar' who might have developed a bipolar illness later in life.⁸ The only study clearly distinguishing between the two types of depression found higher rates of psychiatric disorder in the offspring of parents with unipolar depression compared with those with bipolar depression.¹⁵ The annual incidence of unipolar depression, however, is about 500 times that of bipolar depression so that bipolar depression has considerably less impact on children from a public health point of view.²

The nature of the association between maternal depression and child psychiatric disorder**GENETIC CONTRIBUTIONS**

Studies distinguishing different types of depression may be concerned with elucidating genetic influences from one generation to another and these could provide one explanation for the association between maternal depression and psychiatric disturbance in children. When offspring of adults with different types of adult mental disorder are com-

pared, however, the child's disorder does not usually match that of the parent in a systematic way and this argument has been used against a genetic mechanism.¹ Recent interest in depressive disorders in children¹⁶ has led to increasing awareness that the importance of depressive symptoms in children may have been overlooked¹⁷ and depressive symptoms often continue from childhood to adult life.¹⁸ There may therefore be more similarity in depressive symptomatology between adults and children than has previously been reported. Two recent studies of major depressive disorders support this view, although one included bipolar depression and the other did not.^{10 19} The finding does not necessarily indicate a genetic basis for the similarity and indeed dissimilarity does not preclude such a basis because signs of a disorder in childhood could differ from those in adult life. For disturbances in childhood, however, relevant genetic studies are lacking, so it is not possible to do more than speculate about the way in which genetic and environmental influences interact. Although a genetic factor has been shown in the aetiology of most of the major psychiatric illnesses of adults, it is possibly less important for the broad range of affective disorders seen in the community,¹⁹ even though such disorders may be no less severe than those seen in psychiatric hospital.²⁰

EXPOSURE TO SYMPTOMS

How do the non-genetic influences operate? There may be a direct effect of maternal depressive symptoms, which is more pronounced if they involve the child.²¹ Maternal depression may have a specific influence on child development in this way. Several symptoms which commonly occur in depression, however, such as loss of appetite, irritability, crying, poor concentration, and lack of energy are not peculiar to depressive disorders. This is also true of suicidal ideation and behaviour. Expressions of worthlessness, hopelessness, and loss of pleasure are perhaps more specific to depression but they are seen at least sporadically in people who are not depressed. What may be important is not whether a parent is depressed but how they express it. This is what the child experiences and it may be more associated with the personality characteristics of the parent than the presence or absence of depression. Although there are a number of observational studies of depressed women and their children, they have not been concerned with this specific issue but rather have looked at whether there are characteristic changes in the quality of parental care.

CHANGES IN THE QUALITY OF PARENTAL CARE

It is useful to distinguish between exposure to symptoms and changes in parental care.²² A parent

may involve a child in a depressive delusion, in which case the child is exposed to the symptom in a way that also constitutes a change in the quality of care. Alternatively, the parent may be preoccupied with the delusion and thus be less responsive to the child. There is then no direct exposure to the symptom, but there is change in the quality of care; these changes are not peculiar to depression, although the former type may be.

Weissman *et al* list various impairments of maternal care resulting from depression which might show themselves at different stages of the child's development; in infancy, for example, the mother might show helplessness, overindulgence, or hostility, excessive concern, and inability to separate from the child and, in adolescence, impaired communication, friction or withdrawal, resentment, worry, guilt, envy, and competition.²³ It is obvious that these impairments, if they exist, cannot be specific to depression.

Observational studies are now beginning to map interactions between parents and children when the mother is depressed to establish whether there are characteristic changes in care among depressed mothers. These studies have predominantly focused on infants and children under 5 years (L Murray, personal communication).^{22 24-26}

The interactions of depressed mothers and their infants are characterised by the mothers being less active, decisive, and responsive^{25 27} with less well timed responsiveness (L Murray, personal communication), and lower levels of warm acceptance of the child.²⁸ The infants are more drowsy, less content, more distressed and fussy,²⁵ look at their mothers less and engage in more self directed activity (L Murray, personal communication).²⁴

In comparison with mothers who are not depressed, the depressed mothers of 2 year olds have less well timed responsiveness, express more negative attitudes, ignore the child's approaches more, and use more control talk or action. They also use less elaborate talk with their children—for example, explanations, suggestions, and questions.²² The 2 year old children are more sensitive to emotional distress, reacting with avoidance or 'exceptional compassion' (Radke-Yarrow *et al*, personal communication), and often comforting their unhappy parents.²² They approach their mothers verbally less often, but physically more often, and more frequently show signs of emotional or behavioural disturbance (M Radke-Yarrow *et al*, personal communication).²² The interactions of depressed mothers are more frequently punctuated by distress of the child, and the mother using controlling methods in the face of this.²² Children of depressed mothers need to make more intense demands to get

a response, and their mothers are then more often indecisive, finally capitulating: a pattern of child 'coercion-control'.²²

These studies have only compared children of depressed mothers with those of non-depressed mothers, however, so that the difference in interactions between parent and child cannot be said to be specific for depression; in one study there was a wide range of quality of interactions between parents and children, especially among the depressed group.²² Some depressed mothers were as sensitive and skilful as those in the control group—some more so. Similar observational methods were used in a study of children who failed to thrive and their parents. Differences in the quality of parental care in the group of depressed parents and those whose children failed to thrive overlapped in—for example, less well-meshed responsiveness, greater expressions of negative affect, and ineffective control (C Puckering, personal communication). Families of children who failed to thrive tended to be more chaotic and mealtimes were particularly so, with the mothers unconcerned or overinvolved.²⁸ There is clearly overlap in the nature of the interaction between parents and children with some families who abuse their children,²⁹ although in these the dysfunction in interaction is more evident in discipline and control. A prospective high risk study of women with histories of psychosis—schizophrenic, cycloid, or affective—found no deviant aspect of the interaction between mother and child which consistently characterised any given diagnostic group when the children were aged 1.²⁷ It must be emphasised that the results obtained by observational methods will depend largely on the focus of investigation and what behaviour patterns are recorded.

Fairly characteristic patterns of interaction will be found in some families who have specific defining characteristics, such as maternal depression. Extreme forms of such characteristics may be seen as pathognomonic but will be shown by only a proportion of families with that particular characteristic.

CORRELATED FACTORS, INCLUDING CHANGES IN FAMILY STRUCTURE OR FUNCTION

The demonstration that some depressed mothers behave differently with their children does not indicate that the differences are necessarily due to depression, and the finding that not all depressed mothers differ from non-depressed mothers suggests that the basis for the differences may originate somewhere other than in the mother's depressed mental state. The depressed mother's mental state may affect the severity of any deficiencies in parental care or even the pattern in susceptible

individuals. In their study of depressed mothers of 2 year olds, Cox *et al* found that depressed mothers differed from the control (non-depressed) mothers both in their backgrounds and in their current circumstances.²² Depressed mothers more often reported a poor relationship with their own mothers during childhood, and frequently played truant from school. They had given birth to their first child at a younger age than mothers in the non-depressed group. All these experiences are likely to reduce confidence and possibly competence in parental care. At the time of the study depressed mothers were more often living in threatening environmental circumstances, and having discordant relationships with their partners. In addition, their children had more problems in relationships with siblings, peers and the mother herself. Furthermore, the spouse more often had a psychiatric disorder. All these factors might have a bearing on the quality of the relationship between parent and child.

A recent study of an older group of children and their mothers showed that the mothers were appreciably more aversive to the children on days when they themselves experienced a high proportion of unpleasant contacts with adults.³⁰ Similar findings were reported in a study of mothers with preschool children, although in this study, the authors argued that the child's behaviour was the best single predictor of the mother's response, followed by maternal depression, and then 'mother coercive interaction with adults'.³¹

There are clearly many possible mechanisms. For example, mothers with poor experiences in early life may be prone to both depression and to poor parental care. Mothers subjected to a lot of stress may as a result be unpleasant to their children as well as depressed. Longitudinal studies are needed to clarify the various patterns.

FINDINGS FROM LONGITUDINAL STUDIES

In their follow up study comparing a group of children with disturbed behaviour and a random control group of children from the age of 3 to the age of 8, Richman *et al* found that maternal criticism and lack of warmth were better predictors of the onset or persistence of disturbed behaviour in the child than maternal depression and marital discord, although the two latter factors correlated with disturbance at the different ages when the children were studied—namely, 3, 4, and 8 years. Maternal depression when the child was 3, however, was the best predictor of later educational difficulties at the age of 8, independent of the child's intelligence quotient.⁵

In a report of a four year prospective study of children one of whose parents had attended a

psychiatric clinic, Rutter *et al* found that personality disorder in the parent and exposure of the child to high degrees of hostility were the best predictors of persistent psychiatric disorder in the child. Parental mental disorder was one of several adverse psychosocial factors which were associated with psychiatric disorder in the children in varying combinations, and which tended to aggregate. After allowing for the other factors, parental mental disorder was not associated with increased rates of child psychiatric disorder in the children. A recent evaluation of a group programme also reported behaviour disorders in children as being linked to the mother's outwardly directed irritability rather than her depression.³²

Further useful evidence about mechanisms comes from three longitudinal studies in which mothers were followed up from pregnancy or parturition until the children were 3 or 4 years old (NH Caplan *et al*, personal communication).^{9 33-35} In most instances the behavioural disturbance in the child was most strongly associated with concurrent depression. In a complex analysis, Ghodsian *et al* show that at the age of 42 months the child's psychiatric disturbance was not associated with maternal depression four months after birth, but was associated with maternal depression when the child was 14 months old.³⁴ Investigating the children when they were 3 years old, Wrate *et al* also found no link between psychiatric disturbance in the child and postnatal depression present three to five months after birth.³⁵ Mothers with shorter postnatal episodes, however, had children with more behavioural disturbances at the age of 3 (but most of them had had a subsequent depression sometimes following a further pregnancy). The third study (NH Caplan *et al*, personal communication) was of a group from a higher class than the previous two studies.³³ They found that maternal depression at some time in the first year after delivery was associated with the children having lower scores on the McCarthy scales of children's abilities at the age of 4. Lower scores were independently linked to marital conflict and a history of paternal psychiatric problems. Behavioural disturbances in the 4 year old children were associated with lower scores on the McCarthy scales. Such disturbances were linked more strongly with current as opposed to past depression, with a paternal history of psychiatric disorder, and current marital discord. Discord had usually been persistent from before the delivery.

Discussion

How are these findings to be interpreted?

Firstly it seems that early severe maternal post-

natal depression does not carry a seriously increased risk for later psychiatric problems in children, although episodes of depression during the first year of life may be important in the child's later cognitive and language development. Secondly, current child behavioural disturbance always correlates best with current maternal depression. Thirdly, there are many important factors which are associated with both psychiatric disorders in children and maternal depression.

The positive findings are best understood by considering the quality of the relationship that develops between the mother and child, bearing in mind that aspects of the relationship relevant to cognitive or language development may be different from those relevant to the development of psychiatric disorders in childhood. The features of the relationship relevant to personality development that might make an individual susceptible to depression as an adult may be different yet again.

What is suggested is that patterns of mutual responsiveness between mother and child that may be particularly relevant to the development of cognitive abilities, attention, and language develop in the first two years of life and that these are particularly at risk if there is maternal depression. There is support for this in the finding that poor mutual responsiveness between mother and child when the child is 2 years old is associated with poorer expressive language.³⁶ If the findings of Cogill *et al* are substantiated, the basis for this deficiency is established in the first year.³³ It must still be said, however, that it is not clear whether depression as such is responsible for the unsatisfactory mother and child relationship. The sample studied by Cox *et al* was followed up after six months when the children were about 3 years old.²² Looking at the pattern of correlations at and between the two different time points, mutual responsiveness between mother and child is more closely linked to the quality of the mother's marriage than to the severity of her depression. Depression and the quality of marriage influence each other.²² It therefore seems likely that the mother's mental state, the quality of her marriage and social supports, and her personality all contribute to the establishment of a relationship between parent and child that is deficient in responsiveness, and which in turn adversely affects language (and possibly cognitive) development. These deficiencies in language development then provide the basis for later educational failure.⁵

Other patterns of the relationship between mother and child occurring in association with maternal depression may be particularly relevant to the development and persistence of psychiatric disturbance in the child. Adverse patterns that may

be predisposed to by delayed cognitive and language development will become established when the child starts to be more mobile at or around 14 months, and may be especially likely to occur if a sibling is born about this time.³⁴ The pattern centres around child control: excessive use of controlling techniques, exposure to hostility, and a pattern of child coercion control in which the child increases the pressure until he or she gets what they want. This pattern will be more likely to develop if the mother is subject to stressful and unpleasant contacts with others²⁹ especially marital problems.²² Once the pattern has developed it will persist even when distress or depression have diminished.^{11 22} Maternal depression is closely linked with marital difficulty, and may exacerbate or intensify the maladaptive patterns of interaction between parent and child.^{19 37} It is doubtful, however, whether it is sufficient on its own as a cause, because so many depressed women do not develop such a pattern if there is no concurrent marital discord.

The types of disturbance in children that are due to exposure to hostility predominantly affect their conduct.¹⁹ It is therefore reasonable to consider that there may be modes of interaction between parent and child more specifically linked to maternal depressive mental states; these produce less immediate disturbance in the child but generate a vulnerability to emotional disorder in later childhood or adult life. Radke-Yarrow *et al* have described the variety of patterns of attachment in 2 year olds according to the mother's history of different types of depression.²⁶ In a follow up study of children aged between 1 and 6 years, Lewis *et al* found that patterns of attachment at one year were significantly related to later psychopathology for males but not females.³⁸ One possibility is that it is girls in particular who develop anxious attachment to their mothers which entails a role reversal, so that the child takes an undue or predominant part in ministering to the mother's emotional needs; in childhood this would not be construed as a psychiatric disorder. It has been suggested, however, that children subject to such role reversal may lack security in later life and be prone to depression and difficulties with relationships.³⁹

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