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BRIEF COMMUNICATION

Mother–infant interaction in post-partum women with schizophrenia and affective disorders

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ABSTRACT

Background. Psychiatric mother and baby units are increasingly asked to assess parenting in people with severe mental illness, particularly schizophrenia, but little research evidence exists on which to base assessments.

Method. Mother–infant interaction was assessed in 26 women who had recovered from the acute phase of severe post-partum mental disorder, a validated rating scale based on direct observation was used.

Results. Women with schizophrenia showed greater interaction deficits than those with affective disorders, being more remote, insensitive, intrusive and self-absorbed. The 4-month-old infants of women with schizophrenia were more avoidant, and the overall quality of mother–infant interaction in schizophrenia was poorer.

Conclusion. The long-term significance of these preliminary findings is not known but they raise concerns about the parenting capacity of women with schizophrenia and suggest the need for an intervention to improve parenting skills in this group.

INTRODUCTION

The capacity of mothers with severe mental illness to care for their infant children is a subject of current concern to mental health and social services, and psychiatric mother and baby units are now asked to assess parenting skills in mothers recovering from acute post-partum psychiatric disorders or in newly delivered mothers suffering from chronic psychiatric disorders. There is, however, little research evidence on how maternal competence should be assessed and most units rely on ward observations of mother–infant interaction and practical parenting skills (Appleby & Dickens, 1993).

Particular concerns arise over the parenting skills of women with schizophrenia because of the impact of the illness on social interaction and emotional responsiveness. In a recent study of severe mental illness on a mother and baby unit, a diagnosis of schizophrenia and ratings of mother–infant interaction made by nurses during the second week of admission were the best indicators of outcome. Most of the women with schizophrenia were separated from their infants at discharge, or discharged under formal supervision (Hipwell & Kumar, 1996).

Previous observation studies of interaction in schizophrenia have produced conflicting results. Cohler *et al*. (1970) described psychotic mothers on an in-patient unit, particularly those with schizophrenia, as being more likely to perceive their infants as passive and to misinterpret their cues, e.g. to interpret smiling as grimacing. Garmezy *et al*. (1974) reported schizophrenic mothers to touch and play less with their 4-month-old infants. Schachter *et al*. (1977) however, observed schizophrenic mothers to be more responsive and affectionate, and to play

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more with their 14-month-old infants than other mothers, although subjects were aware of this study hypothesis and may have been more motivated as a result.

McNeil *et al*. (1983) described less social contact between schizophrenic mothers and their infants compared with healthy mothers at 6 months, and more anxious attachment and less fear of strangers at 1 year (Nashlund *et al*. 1984). The schizophrenic mothers were more tense and had a higher frequency of vocal discrepancy in a feeding and play situation. This contrasted with the findings of Sameroff *et al*. (1982) who reported no difference in attachment security in the children of schizophrenic mothers compared with mothers with non-psychotic depression or personality disorder, or normal controls.

In the above studies, few subjects were in the immediate post-partum period, though in clinical practice this is when concerns over parenting capacity often arise. Several did not use standardized methods to assess interaction. The present study is based on an observation method that has been used in a study of mother–infant interaction in women with non-psychotic depression (Murray *et al*. 1996). The aim of the study was to compare interaction in post-partum women with schizophrenia and affective disorders following recovery from acute post-partum illness. The specific hypothesis was that greater interaction deficits would be found in maternal schizophrenia.

METHOD

Subjects

The subjects of the study were women admitted to the psychiatric mother and baby unit at the University Hospital of South Manchester between December 1993 and January 1995 and who satisfied the following criteria: baby aged around 4 months at the time of discharge from hospital (the rating scales were designed for babies of this age); planned discharge following clinical recovery (in order that assessments were made at the time of highest level of functioning); and ability to speak English.

Assessment

Subjects were asked to make a short videotape of themselves at play with their infant. The technique of recording is one previously described by Murray (1988). The infant is placed in a chair positioned in front of the mother to allow face-to-face interaction. A mirror is positioned beside the infant, at an angle, so that a camera placed beside the mother records a simultaneous image of the baby, the mother's face in profile, and the mother's full-face reflection. This technique allows for ratings to be made of maternal behaviour, infant behaviour and interaction. The mother is asked to play with the baby for 5 min and is allowed to use a toy. The tapes are subsequently rated according to the Global Rating Scales of Mother–Infant Interaction (Murray, 1988), which consist of the following dimensions:

(*a*) *Mother*

warm/positive – cold/hostile;
accepting – rejecting;
responsive – unresponsive;
non-demanding – demanding;
sensitive – insensitive;
non-intrusive behaviour – intrusive behaviour;
non-intrusive speech – intrusive speech;
non-remote – remote;
non-silent – silent;
happy – sad;
non-flaccid – flaccid;
absorbed in infant – self-absorbed;
relaxed – tense.

(*b*) *Infant*

attentive to mother – avoidant;
active communication – non-active communication;
positive vocalizations – silent;
engaged with environment – silent;
lively – inert;
happy – distressed;
non-fretful – fretful.

(*c*) *Interaction*

smooth/easy – difficult;
fun – serious;
mutually satisfying – unsatisfying;
much engagement – no engagement;
excited engagement – no engagement.

Each dimension is scored on a five-point scale, a score of 5 being optimal. The method has been used in a large study of women with post-natal depression in which differences were

found between those with and those without depression (Murray *et al*. 1996). The authors have been trained in its use.

The tapes were made at a time when the subjects were about to be discharged from hospital. In the case of women admitted with acute illness, this followed clinical recovery, and usually a successfully period of 1 week at home on leave. In all women, including those with chronic illness, the tapes were made at the time of highest level of functioning during their in-patient stay. In this way, assessments were intended to represent mother–infant interaction at the time when subjects likely to be assuming parenting responsibilities at home. All tapes were rated by the same psychiatrist (D. R.) and a sample of four (15%) randomly selected tapes were also rated indpendently by an experienced rater (Professor Lynne Murray, Winnicott Research Unit, University of Reading) who was blind to diagnosis.

Demographic data, diagnosis based on Research Diagnostic Criteria (Spitzer *et al*. 1978), duration of illness since first onset, social class, parity and educational status were also noted. The sample was divided into women with schizophrenia and women with other disorders. The latter group had illnesses that were primarily affective, or consisted of behavioural disturbance associated with affective symptoms. Scores on the Global Rating Scales of Mother–Infant Interaction were compared between the two groups, given as mean scores and 95% confidence intervals. Reliability of the ratings was assessed by Spearman's correlation coefficients.

RESULTS

Forty-eight women were admitted to the mother and baby unit during the 14-month study period. Of these, 16 were excluded from the study: eight remained on the unit for less than 1 week and their discharge did not follow clinical recovery (e.g. self-discharge), five babies were too old for the assessment method, one woman remained too ill for assessment throughout her admission, one did not speak English, and one was discharged without her infant. Of the 32 eligible subjects, one was excluded because clinical recovery had already occurred at the time of admission and mental state information from the referrer was insufficient to make a Research Diagnostic Criteria diagnosis. Five refused to be videotaped. Twenty-six women (81% of eligible cases) were, therefore, included in the study. This figure includes a woman with twins for whom separate assessments were made for her interaction with each child.

Eight women satisfied Research Diagnostic Criteria for schizophrenia. There were 18 women in the affective disorder group; this included six cases of major depressive disorder, six bipolar disorder, and six with features of minor depressive disorder observed during this admission and previous episodes of minor depressive disorder, who were primarily behaviourally disturbed.

The two groups did not differ in parity, educational attainment or social class; most (17) were from social class V. The schizophrenic group was significantly older (mean age 31·5 years compared with 25·7 years; $P = 0{\cdot}009$) and had a greater mean duration of illness (9·7 years compared with 4·3 years; $P = 0{\cdot}02$). All the infants were healthy, 13 were male and 13 female.

Reliability

There was good agreement between the two independent raters. For the maternal items, identical ratings were obtained on 39% of cross-rated items; 89% were scored within one point of each other; the intra-class correlation was 0·73 ($P < 0{\cdot}001$). For infant items, identical ratings were made on 57% of cross-rated items; in 89% ratings were within one point of each other; the intra-class correlation was 0·62 ($P < 0{\cdot}001$). For the interaction items, identical ratings were made on 60% of cross-rated items; 100% of ratings were within one point of each other; the intra-class correlation was 0·77 ($P < 0{\cdot}001$). Overall, identical ratings were made on 48% of cross-rated items; 91% of ratings were within one point of each other; the overall intra-class correlation was 0·73 ($P < 0{\cdot}001$).

Mother–infant interaction

Table 1 shows that the scores for schizophrenic mothers, their infants, and the interaction were generally lower, indicating a less positive style of interaction. Schizophrenic mothers were more remote, silent, verbally and behaviourally intrusive, self-absorbed, flaccid, insensitive and unresponsive, and less demanding. Their infants

Table 1. *Mean scores (and 95% confidence intervals) on the Global Rating Scales of mother–infant interaction in women with schizophrenia and affective disorders*

	Group A (affective group) $N = 18$	Group B (schizophrenic group) $N = 8$
Ratings for mother		
Warm/positive – cold/hostile	3·79 (3·44–4·14)	3·38 (2·86–3·90)
Accepting – rejecting	3·59 (3·11–4·02)	2·89 (2·03–3·90)
Responsive – unresponsive	3·47 (3·04–3·90)	2·36 (1·54–3·18)
Non-demanding – demanding	3·21 (2·72–3·70)	3·89 (3·65–4·14)
Sensitive – insensitive	3·42 (2·96–3·88)	2·25 (1·53–2·97)
Non-intrusive behaviour – intrusive behaviour	2·79 (2·41–3·17)	2·13 (1·89–2·38)
Non-intrusive speech – intrusive speech	3·53 (3·03–4·04)	2·63 (1·81–3·45)
Non-remote – remote	3·74 (3·26–4·20)	2·25 (1·36–3·14)
Non-silent – silent	3·89 (3·37–4·41)	2·5 (2·39–3·58)
Happy – sad	3·53 (3·12–3·94)	2·63 (1·52–3·74)
Non-flaccid – flaccid	4·21 (3·86–4·56)	2·5 (1·22–3·78)
Absorbed in infant – self-absorbed	3·68 (3·12–4·24)	2·38 (1·4–3·36)
Relaxed – tense	3·05 (2·59–3·51)	3·0 (2·48–3·52)
Ratings for infant		
Attentive to mother – avoidant	3·10 (2·58–3·62)	2·0 (1·17–2·83)
Active communication – no active communication	3·53 (3·12–3·91)	3·0 (2·56–3·74)
Positive vocalizations – silent	2·79 (2·21–3·36)	2·88 (1·74–4·02)
Engaged with environment – self absorbed	3·53 (3·07–3·99)	3·0 (2·36–3·64)
Lively – inert	3·42 (3·05–3·83)	2·88 (2·30–3·46)
Happy – distressed	3·47 (3·01–3·93)	3·5 (2·67–4·33)
Non-fretful – fretful	4·12 (3·66–4·58)	4·25 (3·29–5·21)
Ratings for interaction		
Smooth/easy – difficult	3·41 (2·91–3·91)	2·5 (1·39–3·61)
Fun – serious	3·35 (2·91–3·79)	2·37 (1·47–3·27)
Mutually satisfying – unsatisfying	3·23 (2·77–3·69)	1·86 (1·10–2·66)
Much engagement – no engagement	3·47 (2·99–3·95)	1·75 (1·03–2·47)
Excited engagement – no engagement	2·94 (2·45–3·43)	1·75 (0·94–2·56)

Significant differences indicated in italic.

were more avoidant. The overall interaction was less mutually satisfying and more serious, and engagement was reduced in quantity and less excited.

DISCUSSION

The study presents preliminary findings of significant differences in ratings of mother–infant interaction between women with schizophrenia and women with affective disorders. Some of the deficits in the mothers correspond to the impairment of social behaviour found in schizophrenia in general, though to our knowledge this is the first time that these deficits have been documented in a post-partum sample. More striking is the more avoidant behaviour of the 4-month-old infants of women with schizophrenia, and the deficits in interaction items which are intended to reflect infant as well as maternal behaviour.

A number of methodological limitations need to be emphasized. First, the sample size is small, reflecting the relative rarity of cases of this kind, even in a regional unit. Secondly, the Global Rating Scales were designed for use with less severely ill women with non-psychotic depressive illness, though we believe the main features of mother–infant interaction in schizophrenia are included. Thirdly, the point of clinical recovery is not easily defined; we have chosen the week preceding hospital discharge because it represents the maximum in-patient recovery and is a point at which women are about to adopt greater responsiblity for child care. However, clinical improvement may continue after discharge and the deficits we have described may similarly improve. Fourthly, the affective disorder group is diagnostically heterogeneous. Fifthly, the findings may not be applicable to all newly delivered mothers with a history of schizophrenia, as concerns about possible difficulties in parenting are likely to have influenced referrers in seeking admission to a mother and baby unit. Sixthly, there are no comparable data from a well population from which to judge how severe are the deficits in schizophrenia or whether interaction is impaired in affective disorders.

Despite these limitations, we have found potentially important deficits in the interaction style of women with schizophrenia in comparison to women with affective disorder; overall, these deficits present a coherent picture of maternal detachment and insensitivity and infant avoidance. There are several possible causes of these maternal deficits, including negative symptoms, drug treatments, pre-morbid personality, previous experience of parenting, initial separation from infant and social variables. A larger study is needed to examine predictor variables. The long-term significance of these findings is unknown, but the study

raises doubts about the parenting capacity of some women with schizophrenia and suggests the need for early intervention through training in parenting skills.

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