Patterns of maternal responding in postpartum mothers with schizophrenia

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**Abstract**

Little is known about how schizophrenia might affect how a mother responds to her infant, such as whether responding is reduced or impaired. The aim was to identify, from brief videotaped interactions, whether the responses of mothers with schizophrenia were fewer, less positive, more negative, and more ‘abnormal’ than mothers with affective disorder, and whether their infants (mean age: 15 weeks) lacked activity or initiation to which mothers could respond. Mothers with schizophrenia (\(N = 14\)) were as responsive as mothers with affective disorder (\(N = 31\)), but they showed markedly low positive responsiveness. Only the schizophrenia group exhibited non-responses as a result of being psychologically withdrawn from the interaction, and abnormal behaviors. Inconsistent to our hypothesis, infants in both groups showed similar levels of activity, initiative and negativity. The findings highlight the need for further research to examine the contribution of maternal response impairments to the developmental vulnerability of this genetically high-risk group.

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Sensitive mother–infant interaction is known to play a role in supporting infant development, and in particular, poor maternal responsiveness has negative implications for the child’s early cognitive and emotional functioning. The infant, who is highly dependent on his/her mother’s care, learns through being the recipient of responsive caregiving, about the relation between self and others, and between self and other objects. Poor maternal responsiveness has consistently been shown to predict infant emotion regulation (Davidov & Grusec, 2006), cognitive functioning (Bornstein & Tamis-Lamonda, 1997), secure attachment formation (Ainsworth, Blehar, Waters, & Wall, 1978) and temperament (Kochanska, Aksan, & Carlson, 2005). Research in postpartum depression highlights a mediating effect of suboptimal responsiveness on infant cognitive development (Black et al., 2007; Milgrom, Westley, & Gemmill, 2004; Murray, Hipwell, Hooper, Stein, & Cooper, 1996).

The children of mothers with schizophrenia are a particularly high-risk group (Wan, Abel & Green, 2008), and is one that is understudied from a developmental perspective. Several studies suggest that the quality of the parent–child relationship interacts with genetic factors to determine their developmental and clinical trajectories (Parnas, Tausdale, & Schulsinger, 1985; Schiffman et al., 2002; Wahlberg et al., 2004). Therefore, working with mothers with schizophrenia may present an opportunity for early positive intervention. Of the few studies on mother–infant interaction in mothers with schizophrenia, most show marked deficits in their responsiveness compared with mothers with depression or affective disorder (Goodman & Brumley, 1990; McNeil, Näslund, Persson-Blennow, & Kajl, 1985; Riordan, Appleby, & Faragher, 1999; Wan et al., 2007).

Traditionally, such studies were interested primarily in the early neurocognitive markers of schizophrenia (Niemi, Suvisaari, Tuulio-Henriksson, & Lönnqvist, 2003) and thus employed global rating measures, which typically evaluate maternal respon-
siveness as a single dimensional score. The findings from a longitudinal study of a low-income sample suggested that maternal responsiveness is a mediator of developmental risk in mothers with mental disorder (Goodman & Brumley, 1990). That is, mothers with schizophrenia showed poorer global maternal responsiveness than depressed and control mothers, and such poorer responsiveness predicted childhood social and cognitive functioning rather than maternal diagnosis per se.

However, no previous empirical studies, to our knowledge, have described the specific response patterns that mothers with schizophrenia may tend to exhibit. Poor maternal responsiveness may refer to a lack of behavioral response, but may also refer to insensitive responses, each having different implications for infant development. For example, rather than lacking responsiveness, postpartum depressed mothers tend to be more negatively responsive and less positively responsive towards their infants (Murray et al., 1996; Stanley, Murray, & Stein, 2004), and it is low positive responsiveness that has been shown to predict later cognitive ability (Stanley et al., 2004). Several factors are likely to affect the capacity of mothers with schizophrenia to respond to their infant at all and in a positive way: more severe disorder characterised by affective blunting; preoccupation with positive symptoms (e.g. hallucinations) and with their own needs; difficulties with developing an emotional attachment to their infant; and the side effects of medication. The lack of infant-focused speech found in another study, involving most of the current sample, may suggest poor responsiveness to the infant’s needs (Wan, Penketh, Salmon, & Abel, 2008). However, positive symptoms, such as delusions, and social cognitive impairments, such as emotion recognition or attributional errors, may result in incongruent or 'abnormal' maternal responses (e.g. Chandra, Bhargavaraman, Raghunandan, & Shaligram, 2006).

The infant’s contribution to the behavioral exchange is often missing from global measures of maternal sensitivity. Yet a lack of infant behavior or initiative, or a preponderance of negative behaviors, would present little opportunity for the mother to respond positively during play. Infants of mothers with schizophrenia have been reported to be more inert and less interested in the mother and the environment (Riordan et al., 1999; Wan et al., 2007). Possible explanations include neurodevelopmental deficits, which have often been found in such ‘high-risk’ infants (Blennow & McNeil, 1991; Fish & Kendler, 2005; Niemi, Suvisaari, Haukka, & Lonnqvist, 2005), and a maladaptive interaction history which may lead an avoidant pattern of attachment (e.g. Naslund, Persson-Blennow, McNeil, Kajj, & Malmquist-Larsson, 1984).

We adopted a dyadic approach, analysing sequential pairs of infant behavior and maternal responses in postpartum mothers with schizophrenia during a brief play interaction, compared with mothers with affective disorders during a contemporaneous admission to the same unit. The aim was to compare the presence and quality of responses among mothers with schizophrenia with mothers with affective disorders, and to examine the frequency of their infants’ behaviors. We hypothesised that, compared with mother–infant dyads in the affective disorders group, (1) mothers with schizophrenia would show a higher proportion of non-respondiveness generally and non-respondiveness due to psychological withdrawal from the interaction, or (2) their responses would be less positive, more negative and more abnormal, and (3) their infants would show fewer behaviors, fewer initiated behaviors and more negative behaviors during play interaction.

1. Methods

1.1. Sample

The sample consisted of 45 mothers who were jointly admitted to a psychiatric mother and baby unit (MBU) in Manchester, England between May 1996 and August 2000: schizophrenia (n = 14); affective disorder (n = 31); and their infants (20 male, 25 female). The MBU is a specialist inpatient facility that allows the mother access to psychiatric care while remaining with their infant to encourage adjustment to parenthood and infant bonding (Wan, Moulton, & Abel, 2008). Mothers are referred from a large geographical area covering much of the north of England. A national audit of MBUs revealed that most mothers continued to care for their infant following discharge (with 25% of infants of mothers with schizophrenia, and 6% of infants of mothers with affective disorder being placed under care or adopted) (Abel, Webb, Salmon, Wan, & Appleby, 2005).

Diagnostic information based on criteria set by the International Statistical Classification of Diseases Tenth Revision (ICD-10) was obtained retrospectively from the consultant psychiatrist. Only mothers with a primary diagnosis of schizophrenia, unipolar depressive disorder, or bipolar disorder were formally analysed as the sample sizes of other clinical groups were too small. The participants were English-speaking mothers jointly admitted with their physically healthy infant, and, although many mothers had active positive symptoms, they included only those judged by clinical staff to be well enough to participate and to provide informed consent.

1.2. Procedure

During inpatient admission, mother–infant dyads were videotaped in a four-minute play interaction by a nurse known to them. The mother, facing her seated baby, was instructed to engage in free play with the use of a toy if she so wished, as she would do at home. A mirror placed beside the baby, at an angle, enabled a camcorder (placed on a tripod next to the mother) to record a simultaneous image of the infant, the mother’s face in profile and the mother’s full-face reflection. The nurse remained outside the room during the videotaped episode. Brief sociodemographic and clinical information were obtained retrospectively.
Table 1
Definitions for coding maternal responses

<table>
<thead>
<tr>
<th>Responses</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Affirmation (positive identification or empathising with infant); mirroring (reflection back to infant of a direct or cross-modal equivalence of own expressive form); or greeting of infant reengagement.</td>
</tr>
<tr>
<td>Negative</td>
<td>Denial of infant behavior (rejection of the infant’s behavior or emotional state e.g. in a hostile or critical manner); substitution of infant affect (substitution of a different emotion from that used by the infant without acknowledging the infants’ expression); exaggeration of infant behavior (response to some aspect of infant behavior to an excessive degree); or a perseveration of inappropriate behavior (continuation of ineffective behavior that initially received positive feedback).</td>
</tr>
<tr>
<td>Abnormal</td>
<td>Incongruent, inappropriate behavior in the context of the infant’s preceding behavior, which may have a ‘bizarre’ quality (e.g. mother show fear when infant turns to her).</td>
</tr>
<tr>
<td>Non-responses</td>
<td>Definitions</td>
</tr>
<tr>
<td>No response</td>
<td>No verbal or behavioral acknowledgement of the infant’s behavior as a signal; no change in behavior from that preceding the event.</td>
</tr>
<tr>
<td>Psychological withdrawal</td>
<td>Despite being in view of the infant, there is disengagement and mental distance from the interaction, such as taking the position of an observer.</td>
</tr>
<tr>
<td>Behavioral withdrawal</td>
<td>There is a momentary or prolonged inability to see the infant’s behavior, usually caused by being visually distracted from play or the infant.</td>
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</table>

1.3. Coding of data

Infant behaviors and maternal responses were identified and coded using a modified version of Stanley et al.’s (2004) classification system, originally developed to assess maternal responsiveness in a community sample of depressed mothers. Videotapes were coded by a trained independent coder, blind to maternal information, by viewing each clip several times. Each of the following discrete infant ‘events’ was identified: (1) positive behaviors: smile, excitement, positive and neutral vocalisation; (2) negative behaviors: cry/fret, grimace, frown, pout, negative vocalisation; (3) neutral/ambiguous behaviors: return of gaze to mother’s face, grab/chew, active mouth (lip/tongue movement not associated with sound production), raised eyebrow; and (4) reflex behaviors: yawn, sneeze, vomit, etc. Each infant behavioral event was also coded as either self-initiated (the infant behavior did not appear to result intentionally or otherwise from any aspect of the mother’s activity) or in response to the mother.

Each maternal behavioral and/or verbal response observed within approximately two seconds following each infant event was coded for response (Table 1). As well as a pure ‘no-response’ code, non-responses could alternatively be coded as resulting from being psychologically withdrawn or behaviorally withdrawn from the interaction, resulting in maternal unavailability to respond to the infant (Table 1). Since we did not expect many responses to code as abnormal in a brief interactive episode of this kind, we also coded instances of abnormal behavior (any incongruent, inappropriate behavior out of context, which may have a ‘bizarre’ quality) that were not a response but could be equally distressing for an infant.

The measures of interest were: (1) the total number of infant behaviors; (2) the number of each behavioral type (positive, negative, neutral/ambiguous and reflexes); (3) the proportion that were initiated by the infant; (4) the proportion of these predefined infant behaviors that were followed by (i) an affirmative maternal behavior; (ii) a negative maternal behavior; (iii) no maternal response; (iv) no maternal response due to psychological or behavioral remoteness; and (iv) an ‘abnormal’ maternal response; and (5) the number of ‘abnormal’ maternal behaviors.

To assess inter-rater reliability, a random sample of 29% of video clips was independently rated by the first author. Reasonable to high agreement was demonstrated on infant behavior counts using single measures intraclass correlation (ICC; two-way mixed effects model using an absolute agreement definition): negative behavior: \( r = 0.74 \) (\( p < 0.001 \)); positive behavior: \( r = 0.73 \) (\( p < 0.001 \)); neutral behavior: \( r = 0.42 \) (\( p = 0.02 \)); reflex behavior: \( r = 0.60 \) (\( p = 0.02 \)). Inter-rater agreement was more difficult to achieve on maternal response rates, mostly resulting from a difficulty distinguishing between negative and no responses: positive: \( r = 0.62 \) (\( p = 0.01 \)); negative: \( r = 0.55 \) (\( p = 0.07 \)); non-responses: \( r = 0.40 \) (\( p = 0.06 \)).

1.4. Statistical analysis

Independent samples t-tests were performed to compare the behaviors and responsiveness of mother–infant dyads in the schizophrenia group with those in the affective disorder group. The affective disorder groups were combined for analysis, because: (i) our primary interest was in the responsiveness of mothers with schizophrenia; the other dyads served as a comparison inpatient group; (ii) to enhance power in this relatively small sample; and (iii) despite differences in symptomatology, previous studies found that the two affective disorder groups showed similar interactive deficits (Wan et al., 2007), clinical outcomes and clinician-rated parenting risk at MBU discharge (Abel et al., 2005), which differed from those of mothers with schizophrenia.
2. Results

2.1. Sample characteristics

Maternal age ranged from 18 to 41 years (mean = 28 years) and infant age ranged from 4 to 60 weeks (mean = 15 weeks). Most infants \((n = 35)\) were less than 20 weeks old, and mothers had been admitted for a mean of 5.98 weeks (range 1–35 weeks) at the time of participation. Twenty-one mothers were primiparous (48%; 1 missing), 34 were married or cohabiting (76%; 1 missing) and 41 were Caucasian (91%). No statistical differences were found between the three clinical groups in maternal or infant age, or duration of current admission, but a significant effect was found for total duration of illness (Table 2). Bonferroni post-hoc tests showed that overall between-group difference was accounted for by the difference between the schizophrenia and depressive illness groups. The length of hospitalisation at the time of observation varied most among mothers with depression, although a slightly lower proportion of mothers with schizophrenia \((n = 4; 29\%)\) participated within 4 weeks of admission compared with mothers with affective disorder \((n = 14; 55\%)\). Mothers with schizophrenia tended to be non-Caucasian, to have a longer total duration of current admission and to have a psychiatric history, which was also longer.

2.2. Infant behaviors and maternal responsiveness

In the whole sample, infants showed a mean of 37.11 (S.D. = 19.89) behaviors within the interaction, with approximately half being neutral (mean = 18.42, S.D. = 9.18). Of all the infant behaviors observed, more received a positive (mean = 28.78, S.D. = 16.85) than a negative response (mean = 12.74, S.D. = 14.40), though most received no response (58.48%). ‘Abnormal’ responses and ‘abnormal’ behaviors were highly infrequent, so were combined for subsequent analysis (mean = 0.10). \(t\)-Tests showed that no infant behavior or maternal response varied as a function of infant gender.

2.3. Responsiveness by schizophrenia status

Maternal non-response rates were similar in both clinical groups (Table 3). Since non-response rarely resulted from psychological or behavioral withdrawal, we examined the number of mothers exhibiting any instance of withdrawn non-

Table 2
Sample characteristics across maternal diagnosis

<table>
<thead>
<tr>
<th>Means (S.D.)</th>
<th>Schizophrenia, (n = 14)</th>
<th>Bipolar disorder, (n = 8)</th>
<th>Depression, (n = 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age</td>
<td>28.36 (6.22)</td>
<td>28.38 (4.37)</td>
<td>27.61 (4.33)</td>
</tr>
<tr>
<td>Infant age at assessment</td>
<td>15.43 (13.42)</td>
<td>8.75 (4.59)</td>
<td>17.48 (8.47)</td>
</tr>
<tr>
<td>Admission length at assessment</td>
<td>6.64 (2.56)</td>
<td>4.38 (2.14)</td>
<td>6.13 (8.06)</td>
</tr>
<tr>
<td>Total admission length</td>
<td>14.86 (6.11)</td>
<td>11.50 (6.53)</td>
<td>9.43 (3.79)</td>
</tr>
<tr>
<td>Pre-admission illness*</td>
<td>6.20 (5.01; 4 missing)</td>
<td>3.83 (7.22; 2 missing)</td>
<td>1.95 (4.02; 1 missing)</td>
</tr>
</tbody>
</table>

Frequencies (% within diagnostic group)

<table>
<thead>
<tr>
<th>Pre-admission psychiatric history</th>
<th>Schizophrenia</th>
<th>Bipolar disorder</th>
<th>Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-admission psychiatric history</td>
<td>8 (73%; 3 missing)</td>
<td>2 (33%; 2 missing)</td>
<td>8 (35%)</td>
</tr>
<tr>
<td>Married/cohabiting</td>
<td>9 (69%; 1 missing)</td>
<td>5 (63%)</td>
<td>20 (87%)</td>
</tr>
<tr>
<td>Primiparity</td>
<td>7 (50%)</td>
<td>4 (57%; 1 missing)</td>
<td>10 (44%)</td>
</tr>
<tr>
<td>Caucasian</td>
<td>10 (67%)</td>
<td>8 (100%)</td>
<td>23 (100%)</td>
</tr>
<tr>
<td>Male infants</td>
<td>5 (36%)</td>
<td>3 (38%)</td>
<td>12 (52%)</td>
</tr>
</tbody>
</table>

Note. All means are expressed in number of weeks, except maternal age and pre-admission illness which are expressed in number of years.

\(F(2, 42) = 4.89; p = 0.01.\)

Table 3
Infant behaviors and maternal response by maternal clinical status

<table>
<thead>
<tr>
<th>Mean frequency (S.D.)</th>
<th>Schizophrenia, (n = 14)</th>
<th>Affective disorders, (n = 31)</th>
<th>t-Score</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>38.16 (16.42)</td>
<td>34.71 (21.46)</td>
<td>0.53</td>
<td>0.60</td>
</tr>
<tr>
<td>Negative</td>
<td>7.57 (6.66)</td>
<td>9.90 (14.25)</td>
<td>0.58</td>
<td>0.56</td>
</tr>
<tr>
<td>Positive</td>
<td>8.64 (10.67)</td>
<td>8.58 (8.09)</td>
<td>0.02</td>
<td>0.98</td>
</tr>
<tr>
<td>Neutral/ambiguous</td>
<td>17.93 (8.47)</td>
<td>18.45 (9.56)</td>
<td>0.18</td>
<td>0.86</td>
</tr>
<tr>
<td>Reflex</td>
<td>0.57 (1.16)</td>
<td>1.26 (3.47)</td>
<td>0.72</td>
<td>0.48</td>
</tr>
<tr>
<td>Maternal responses, mean rate* (S.D.)</td>
<td>20.08 (14.70)</td>
<td>32.72 (16.48)</td>
<td>2.46</td>
<td>0.02</td>
</tr>
<tr>
<td>Positive</td>
<td>16.97 (12.91)</td>
<td>10.83 (14.83)</td>
<td>1.34</td>
<td>0.19</td>
</tr>
<tr>
<td>No response</td>
<td>62.95 (15.90)</td>
<td>56.46 (16.18)</td>
<td>1.25</td>
<td>0.22</td>
</tr>
</tbody>
</table>

* Mean maternal responsiveness rate refers to the percentage of infant behaviors that was followed by a particular response or no response.
response. Three (21%) mothers with schizophrenia showed non-response due to psychological withdrawal compared with no mothers with affective disorder (Fisher exact test: \( p = 0.02 \). Nine (64%) mothers with schizophrenia and 15 (48%) mothers with affective disorder showed non-response due to behavioral withdrawal (Fisher exact test: \( p = 0.25 \)).

The schizophrenia group gave a significantly smaller proportion of affirmative responses than mothers with affective disorder (Table 3). Although the mean negative responsiveness was higher in the schizophrenia group, the effect was non-significant. Particularly large variation was found for negative responsiveness within the affective disorder group. As we expect negative responses to positive or neutral behaviors to be particularly maladaptive, a post-hoc analysis was conducted. Mothers with schizophrenia tended to respond negatively to neutral or positive behaviors (mean \( = 2.71 \) events; S.D. = 3.43) more than mothers with affective disorder (mean \( = 0.90 \) events; S.D. = 1.70) (\( t(16) = 1.88; \ p = 0.08 \). ‘Abnormal’ maternal responses/behaviors were infrequent and observed only in mothers with schizophrenia (n = 5; 35.7%) (Fisher exact test: \( p = 0.002 \)).

Infants in both groups showed a similar mean number of total, positive and negative behaviors (Table 3). Two thirds of infant behaviors were identified as self-initiated, with no difference observed between groups (schizophrenia: 67%; S.D. = 17.9; affective disorder: 68%; S.D. = 23.8; (43) = 0.05; \( p = \text{ns} \)). Number of infant-initiated behaviors was significantly negatively correlated with the proportion of infant behaviors which received no maternal response (\( r = -0.32; \ p = 0.03 \)), but the number of infant behaviors that were not self-initiated (i.e. were a response to the mother’s behavior) was not (\( r = -0.12; \ p = \text{ns} \)).

3. Discussion

This study extends on previous reports describing the tendency of mothers with schizophrenia to respond poorly to their infants (Goodman & Brumley, 1990; McNeil et al., 1985; Riordan et al., 1999; Wan et al., 2007) by demonstrating a markedly low rate of positive maternal responsiveness compared with another psychiatric inpatient group (mothers with affective disorder). On average, a fifth of infant behaviors received a positive response in the schizophrenia group, compared with a third in the affective disorder group. Mothers with affective disorder, who are likely to show low positive responsiveness, exhibited three times more positive responses than negative responses, while mothers with schizophrenia exhibited as many positive as negative responses. In infancy, being the recipient of well-timed, positive responses from the primary caregiver is likely to be important in the learning of contingent relationships in the physical environment. Stanley et al. (2004) demonstrated this in the poorer learning of temporal relationships in infants of postpartum depressed mothers who tended to lack positive responsiveness. In the current sample, the markedly low positive responsiveness of mothers with schizophrenia may reflect a history of social interactive deficit due to the chronicity of their disorder, or blunted emotional affect that is more resistant to treatment than positive symptoms. Although the cause is unclear, this reduced positive responsiveness is consistent with the cognitive delay that has been reported in children of mothers with schizophrenia, which may be limited to infancy (Goodman, 1987; Grunebaum, Weiss, Gallant, & Cohler, 1974; Niemi et al., 2005; Sameroff, Seifer, Zax, & Barocas, 1987).

Perhaps surprisingly, mothers with schizophrenia were only slightly less responsive overall to their infants than mothers with affective disorder, suggesting that, at least within a brief instructed play session, they were able to attend to their infant’s behaviors as well as can other clinical groups. By contrast, previous studies have observed unresponsiveness and remoteness in this group (e.g. Riordan et al., 1999; Wan et al., 2008). One explanation for this discrepancy is that the infants in our study became inactive when mothers became withdrawn, a situation which presents no infant behavior to which the mother might respond, resulting in a low maternal non-response rate. This is supported by our finding that the rate of maternal unresponsiveness was associated with a reduction in infant self-initiated behavior. Closer examination showed that, whereas almost half of mothers with affective disorder failed to respond on at least one occasion because they were visually distracted from their infant’s behavior, only mothers with schizophrenia missed infant behaviors as a result of being psychologically withdrawn. Thus, the reasons underlying non-responsiveness may tend to differ between groups.

Three types of suboptimal response were almost unique to the schizophrenia group: negative responses to positive behaviors, psychologically withdrawn non-response, and ‘abnormal’ behavior. Although rates of negative responsiveness varied greatly among mothers with affective disorder, such negativity was restricted to response to negative behavior. By contrast, mothers with schizophrenia occasionally exhibited negative responses to non-negative (i.e. positive and neutral) infant behavior; therefore, her response is incongruent to the child’s behavior. Such unpredictable and potentially ‘frightening’ responses, including abnormal behaviors and psychological non-response, may be due to the presence of positive symptoms or social cognitive deficits common in schizophrenia. Despite the infrequency of such behaviors, that they were captured at all within a four-minute laboratory-based interaction is revealing, and may suggest that their infants are exposed to them more regularly in a naturalistic setting.

Previous studies have been unable to rule out the possibility that these infants may have innate interactive deficits that impact on a mother’s parenting confidence and behaviors. The present findings suggest that deficits in maternal responsiveness in the early postpartum period are not attributable to infant inertness, negativity or low initiation, despite the low positive responsiveness from the mother. However, although our measure involved fairly detailed counts of particular types of behavior, one limitation is that we did not measure the degree of negativity, positivity or activity, such that a subtle return of gaze to the mother effectively has equal weighting as an effortful attempt to grab an object. Sameroff et al. (1987) also reported that the behaviors of 4-month-old infants of mothers with schizophrenia did not differ from infants of mothers
with other mental disorder. By contrast, at discharge from an MBU, other studies have reported that these infants tend to be avoidant (Riordan et al., 1999; Wan et al., 2007) and inert (Wan et al., 2007). We may expect infant interactive deficits to develop later in infancy, with prolonged exposure to maternal interactive impairments and particularly with low positive responsiveness.

Due to the overall sample size, unequal N between clinical groups, and within-group variation in responsiveness, our results should be treated as preliminary. Observed maternal responsiveness in an MBU setting may not generalise to the home, but is likely to represent the capacity of these mothers to respond to their infants under relatively low stress conditions. The extent to which the sample is representative of mothers with psychiatric illness is unknown. Since women with more severe illness and poor social support are most likely to be admitted, the inpatient schizophrenia group may be more representative of women with schizophrenia in the community than the affective disorder group. The difference in maternal responsiveness between the two clinical groups may therefore be underestimated in our sample. The extent of poor responsiveness in mothers with schizophrenia may have been clearer if compared against a healthy control group, although the affective disorder group was intended as a comparison inpatient group with reasonably similar illness severity and hospitalisation. We did not make a detailed, standardised assessment of psychopathology. Future studies should attempt to map the mother’s symptoms to her capacity to respond to infants.

Despite the shortcomings, this is the first study that has examined specific response patterns in mothers with schizophrenia, and has found a very low proportion of positive responses even compared with an affective disorder group. In some of these mothers, we further found the presence of abnormal behavior, negative responding to positive infant behavior, and/or non-response resulting from psychological remoteness from their infant. Impairments of maternal response in mothers with schizophrenia potentially constitute an important mechanism through which developmental difficulties are transmitted to the next generation. Previous research has emphasised the importance of the early social environment for individuals at high genetic risk of schizophrenia (Wahlberg et al., 2004). Prospective longitudinal follow-up may determine whether the suboptimal response pattern that we have observed contributes to the childhood ‘risk markers’ that have been reported in schizophrenia high-risk studies, such as cognitive delay and temperamental passivity. Detailed community-based longitudinal studies may, however, be difficult to conduct due to low participation rates (Wan, Warburton, Appleby, & Abel, 2007).

Identification of which aspects of the maternal response have greatest negative impact on infants, and how they relate to the mother’s symptomatology, will be valuable in future studies and potentially for the development of targeted parenting intervention work.

Acknowledgment

The authors would like to thank Roger Webb for his helpful comments on the manuscript.

References


