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RESEARCH ARTICLE

A psychotherapeutic baby clinic in a hostel for homeless families: Practice and evaluation

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ABSTRACT

Objectives: A pilot baby clinic in a hostel for homeless families has been established to address the specific attachment and developmental needs of infants living in temporary accommodation. The aim of this study was to assess whether this clinic model was associated with more positive outcomes than mainstream community services in terms of infant development and parent-infant interactions.

Design: Parent-infant psychotherapy and health visiting services collaborated to develop a new model of baby clinic which reconfigured the traditional clinic to give priority to infants' affective experiences in a therapeutic group setting. Outcomes for parent-infant dyads in a homeless hostel where this service model was applied were compared with outcomes for parents and infants in hostels which did not have such a service.

Methods: Fifty-nine mother-baby dyads participated in evaluation, 30 in the intervention hostel group and 29 living in comparison hostels. Infant mental and motor development was assessed using the Bayley Scales of Infant Development. Interactions between the

parents and infants were video-recorded and coded on the Coding Interactive Behavior Scales.

Results: The indices of mental and motor development of infants in the intervention hostel were significantly improved over time in relation to infants in the comparison hostels. No significant differences were found in the quality of parent-infant interaction between the two groups over time.

Conclusions: The findings indicate that the service model may have positive benefits for infant development. The findings, study limitations, and clinical implications are discussed.

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Practitioner Points

- Parents and infants living in temporary accommodation represent a high-risk and hard-to-reach population.
- A new model of intervention which combines universal infant health services with a therapeutic parent-infant group may be an effective means of supporting the emotional needs of hard-to-reach parents and infants.

The complex difficulties experienced by families living in temporary accommodation place infants living in such circumstances at risk of multiple social, emotional and developmental problems. In the first quarter of 2009 there were 64,000 households living in temporary accommodation in England and three-quarters of these households included dependent children and/or a pregnant woman (Department for Communities and Local Government, 2009). Although the exact number is unclear, a substantial number of babies are born into families with a background of homelessness living in temporary hostel accommodation.

The reasons for becoming homeless, the characteristics of these populations, and the circumstances imposed by living in a hostel all contribute to the complex needs experienced by parents and infants in such situations.

The most common reasons for becoming homeless and seeking temporary accommodation include: loss of accommodation provided by relatives or friends (38%), domestic violence or broken relationships with partners (19%), and economic difficulty (6%) (Department for Communities and Local Government, 2009). These figures suggest that many families living in temporary accommodation have experienced disrupted family relationships, isolation, poverty, and violence. Children living in conditions of homelessness or temporary accommodation are often exposed to a number of related risk factors such as parental mental illness, lone parenting, parental substance misuse, and domestic violence (Anooshian, 2005; Bassuk, Buckner, Perloff, & Bassuk, 1998; Bassuk, Weinreb, Dawson, Perloff, & Buckner, 1997; Buckner, Bassuk, & Zima, 1993; McQuiston, Finnerty, Hirschowitz, & Susser, 2003; Vostanis, Grattan, Cumella, & Winchester, 1997; Zima, Wells, Benjamin, & Duan, 1996). Many repeatedly homeless parents have been exposed to violence and trauma in their past (Bassuk, Perloff, & Dawson, 2001), a factor often associated with parents' difficulties in the relationship with their children (Baradon, 2009). The cumulative effect of multiple socio-demographic and emotional difficulties places these children even more at risk (Gutman, Sameroff, & Cole, 2003).

Homelessness has been associated with a number of setbacks for school-aged children, including developmental delays, poor school attendance, and emotional and behavioural difficulties (Brooks, Ferguson, & Webb, 1998; Masten, Miliotis, Graham-Bermann, Ramirez, & Neemann, 1993; Tischler, Karim, Rustall, Gregory, & Vostanis, 2004; Vostanis

et al., 1997; Webb, Shankleman, Evans, & Brooks, 2001). The less optimal outcomes for these children continue over time, even after families move into permanent accommodation (Karim, Tischler, Gregory, & Vostanis, 2006; Vostanis, Grattan, & Cumella, 1998). There is limited research into the effects of homelessness on young infants. One study looked at the development of homeless infants aged between 4 months and 30 months (Garcia Coll, Buckner, Brooks, Weinreb, & Bassuk, 1998). The babies had generally poor developmental outcomes on the Bayley Scales of Infant Development and the Vineland Screener. This study showed a significant decline in the infants' general developmental functioning with age and may suggest a cumulative effect of an impoverished environment over time.

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Conventional community-based health and social services have been deemed to be inadequate in addressing the complex and persisting mental health needs of many children and caregivers living in temporary accommodation (Vostanis et al., 1998). Most notably, referrals of these families to community services such as play groups, baby massage and psychological services frequently fail (NESS, 2008). While some progress has been made in developing interventions to address the mental health needs of school-aged children living in temporary accommodation (e.g. Gerwitz, 2007), there is a clear lack of evidence-based interventions which focus specifically on homeless young infants and their parents. In light of recent advances in our understanding of the importance of early relationships in the first years of life and the benefits of investing in disadvantaged infants (Center on the Developing Child at Harvard University, 2010; Heckman, 2005), strategies to improve outcomes for homeless infants are sorely needed.

Planning services to reach the emotional needs of parents and infants living in hostel accommodation

While numerous attachment based, evaluated and evidenced-based programmes have been developed to address the needs of high-risk infants and their parents (Baradon, Fonagy, Bland, Lenard, & Slead, 2008; Cohen et al., 1999; Cooper, Hoffman, Powell, & Marvin, 2005; McDonough, 2000; Puckering, McIntosh, Hickey, & Longford, 2010; Suchman, Legow, Decoste, & Castiglioni, 2008), families living in homeless hostels bring a particular set of needs which makes it very difficult for them to engage in such specialist parenting or psychological services. Contributory factors include language difficulties, cultural issues, and the fear of stigmatisation and child protection proceedings. This increases the potential social exclusion and isolation of these families. Some programme evaluations explicitly exclude some of the most vulnerable families, such as those who have a history of service non-attendance (Hoffman, Marvin, Cooper, & Powell, 2006), or who don't speak the local language fluently (Cassidy, Woodhouse, Sherman, Stupica, & Lejuez, 2011; Suchman, Decoste, McMahon, Rounsaville, & Mayes, 2011).

With these limitations in mind, an innovative baby clinic at the hostel was developed to bring infant mental health services to some of the most hard to reach families. The reconfigured clinic was facilitated by a multidisciplinary team, comprised of the specialist health visitor, parent-infant psychotherapist and other health service baby clinic staff. The clinic was held in a large communal room of the hostel. Like conventional baby clinics, the health visitor provided a full range of medical care including weighing, immunisations, discussion of concerns and practical advice. These are the ordinary, concrete activities of the baby clinic and have no stigma attached. This aspect of the model is important for

reaching out to the homeless population who often present their problems through physical symptoms (Sawtell, 2002). In addition to health visiting care, the infant-parent relationship and the babies' emotional needs were brought to the fore within a group format. The parent infant psychotherapist and clinic team encouraged parents to stay at the clinic to play there with their babies and to connect up with other families.

Similarities and differences with other early intervention programmes

The reconfigured baby clinic model was informed by a number of established psychoanalytic and attachment focused interventions which aim to strengthen early parent-infant relationships in high-risk populations (Baradon et al., 2005; Lieberman, Silverman, &

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Pawl, 2000; Olds, Sadler, & Kitzman, 2007; Pawl & Lieberman, 1997; Sadler, Slade, & Mayes, 2006). The central tenet of the service is to build upon and strengthen parental sensitivity to the infant (Cicchetti, Rogosch, & Toth, 2006) and parental reflective functioning (Sadler et al., 2006; Slade, Grienberger, Bernbach, Levy, & Locker, 2005). The hostel intervention differs, however, from most established evidence-based early intervention programmes in that it is provided through the medium of universal, non-stigmatising health services which are delivered on site to the families. The drop-in, on-site nature of the hostel clinic makes the service accessible and acceptable to many who would not otherwise make use of such services. Peers within the group enable those from different language and cultural backgrounds to feel at ease within the multicultural setting.

Many of the interventions made by the psychotherapist and team rely on modelling reflectiveness, responsiveness and play through non-verbal communications, ensuring that the intervention is relevant to all parents and infants regardless of cultural or language background.

Aims

The present study provides an evaluation of the outcomes of the new baby clinic model in terms of the infants' development and the quality of parent-infant interaction. The hypotheses were that (1) the infants in the intervention hostel would have improved developmental outcomes over time in comparison to infants living in hostels where this service was not offered, and (2) that the improvements in developmental outcomes would be mediated by improved parent-infant interactions.

Methods

Description of the baby clinic model

The clinic was set out to be conducive to face-to-face interactions with babies, with low seating around mats on the floor. Parents and babies were welcomed by a member of the team and encouraged to sit and play by the mats. Discussions with the health visitor and other team members took place wherever the family was situated to maintain minimal disruption to the parent, infant and group. The baby was included in conversations, which is vital for the babies' development as well as helping parents to recognise and enjoy their capacities for communication. Through this informal setting it was possible to observe parents and babies in action and, rather than just talking about problems, to see how they unfolded in the present and offer appropriate help.

The baby clinic model strengthened and supported the role of each member of its multi-disciplinary team. Families gained access to infant feeding peer supporters, many of whom came from the communities represented in the hostel and had recently fed their own babies. The worker weighing babies participated by ensuring that babies were treated sensitively whilst weighing. A volunteer for toddler play helped to foster age appropriate activities with older siblings and enabled the rest of the team to focus on babies. The parent-infant psychotherapist focused upon emotional experiences and their influence upon symptoms and behaviour. The health visitor took ultimate responsibility for her cases, many of whom were under child protection, but could draw upon the team in her risk assessments. Each session concluded with team discussions about the parents and babies, which included observations of how they placed themselves in the group setting, their responses and their use of toys. In this forum, staff members

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shared perceptions and planned interventions, contributing to building and sustaining a system which thinks about parents and infants in a mentalising way (Fonagy, Gergely, Jurist, & Target, 2002). Continuity of the majority of staff was important, as well as a preparedness to work together and respect each others' roles.

The application of principles and techniques from parent-infant psychotherapy

The parent infant psychotherapist took a lead in building a therapeutic group culture which offered a reflective stance towards the inner worlds of parents and babies (Fonagy & Target, 1997). The group was regarded as an attachment setting through which parents and babies could develop a sense of belonging and build relationships (James, 2002). It was advertised as 'drop in' to give control to these parents, many of whom feel trapped in their lives, so they could regulate their involvement. At the same time the group was reinforced as a welcoming and consistent setting, where individuals were noticed and thought about. This also provided models for the reliable, secure relationships that are the foundations of good-enough infant care (Winnicott, 1960).

Priority was given to relating with infants non-verbally, using mirrored rhythms, mouth gaze and body movements. Attuned interactions were modelled and positive contributions from all participants were encouraged and reinforced (Gergely & Watson, 1996). For infants living in these circumstances, where their parents' minds are pre-occupied and sometimes traumatised, the significance of knowing they have captured the gaze of another could not be underestimated (Paul & Salo, 2007). Such experiences boosted their confidence to continue seeking out responsive care and adaptive patterns of relating.

Sometimes the parent infant psychotherapist would intervene more intensely with a particularly worrying parent and baby, to help bring them closer to each other (Hopkins, 1992). She would scaffold their experiences through offering her own body, such as by sitting alongside to help them connect to each other through supportive holding and looking. She would use an infant-centred tone and voice and look into the infant's face, whilst articulating what it may feel like to be together at that moment. This naming of affects is emotionally regulating, helping parents and babies to feel understood and as well

as enabling parents to recognise their babies as separate, with their own developing sense of self (Lyons-Ruth, 1999).

Information gleaned about parents' own childhoods and histories tended to be used implicitly rather than explored in depth. Referrals to other services for more intensive help were sometimes done gradually and sensitively, but most parents and infants were helped within the context of the group. The theories underpinning this model of intervention and clinical examples have been described in more detail elsewhere (Baradon et al., 2005; James & Newbery, 2010; James & Woodhead, 2007).

Design of the evaluation

Parents and infants were recruited by the researcher from one intervention hostel and four comparison hostels. Families were eligible to take part in the study if they had a child aged 18 months or younger. Information sheets were provided in English, Bengali and Somali as these were the languages most frequently spoken in the hostels. Assessments were conducted by the researcher and took place in the families' rooms in the hostels shortly after they agreed to participate in the study (baseline) and again 3 months later.

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The researcher met with families to discuss the study and obtain informed consent prior to the assessments.

In the intervention hostel, the baby clinic as described above was run on a weekly basis. Families in the comparison hostels had access to universal baby clinics and other services within the community but did not have the multi-disciplinary and specialised clinic within the hostel in which they lived.

Recruitment

The intervention hostel was selected following discussions between the psychotherapist and the health visitor regarding the feasibility of such a group running alongside the usual baby clinic. Other hostels for families within the same north London borough were approached by the researcher, with the assistance of the health visitor. All hostels approached agreed to be included in the research and acted as the control sites. All the hostels were located in similar urban areas with similar statutory service provision, controlling for the effects of broader community level differences.

In the intervention hostel, a researcher attended the group periodically to introduce the study to parents. All parents who attended the group were given an information sheet detailing the purpose of the project and were invited to participate. Due to the drop-in nature of the group, it was not possible to carry out the first assessments before the family had attended the group. The researcher did, however, recruit new families as early as possible after they began attending the group. In the comparison hostels, the hostel managers facilitated recruitment by advertising the information sheet and introducing the researcher to families.

Ethical Approval

Ethical approval for the study was obtained from Camden and Islington Community Local Research Ethics Committee in 2005.

Measures

Demographic details were collected from participants by the researcher at the baseline assessment. The participants were asked for their date of birth, family composition, ethnic origin and level of education obtained and to report their child's gender, date of birth, and ethnic origin. At the baseline and three-month follow up assessments, the following measures were used:

Bayley Scales of Infant Development (BSID)

The BSID (Bayley, 1993) were used to assess the current developmental functioning of the infants in three domains: cognitive, motor and behaviour development. The mental and motor scales are composed of a set of age appropriate tasks which are administered by a fully trained assessor. They yield standardized index scores with a mean of 100 (standard deviation 15). The mental scale measures the infant's cognitive capacities such as sensory/perceptual acuity, discrimination and response; the acquisition of object constancy; memory, learning and problem solving; and vocalization and the development of verbal communication. The motor scale measures the infants' acquisition of physical developmental milestones in terms of the degree of body control, large

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muscle coordination, fine motor skills of the hands and fingers, and movement. The BSID have been shown to have good test-retest reliability (0.83 and 0.77 for the mental and motor scales respectively; Bayley, 1993). They have good concurrent validity with other measures of physical and cognitive functioning (Provost, Crowe, & McClain, 2000; Voigt et al., 2003) and the mental scale is predictive of later cognitive functioning (Voigt et al., 2003).

Coding Interactive Behavior (CIB)

Following the completion of the Bayley Scales, the researcher took a 10 minute video recording of the parent and infant. Parents were asked to 'be with their child as they would normally be'. Three research psychologists who were not involved in data collection and were trained on the CIB scales coded the interaction videos. Reliability on the CIB requires formal teaching based on the CIB manual (Feldman, 1998) and videos provided by the author. Coders require at least 80% reliability with the original coder to complete training and become reliable. The raters were blind to treatment condition and time point and care was taken ensure no clues identifying location of recording were included in recordings. The CIB scales focus on a range of interactive behaviours relating to the parent (e.g. parental acknowledging), the child (e.g. child positive affect) and the dyad as a whole (e.g. adaptation-regulation). Each item is rated on a five-point scale for frequency and intensity. The items are summed into 6 subscales: parent sensitivity, parent intrusiveness, child involvement, child withdrawal, dyadic reciprocity, and dyadic negative states.

The CIB is sensitive to risk factors, such as maternal cocaine use (Mayes et al., 1997), delivery pain (Ferber & Feldman, 2005), infant prematurity (Keren, Feldman, Eidelman,

Sirota, & Lester, 2003), and referral to infant mental health clinics (Keren, Feldman, & Tyano, 2001), as well as resilience factors such as marital satisfaction and father involvement (Feldman, 2000) and the effects of breast milk (Feldman & Eidelman, 2003). The CIB has demonstrated sensitivity to change in studies of Kangaroo Care (Feldman, Eidelman, Sirota, & Weller, 2002) and massage therapy (Ferber et al., 2005) for preterm infants.

Data analysis

Demographic characteristics from the two samples were compared using t-tests for normally distributed data, chi-squared test for categorical data and Kendal's S-statistic for data in ordinal categories. Data from the Bayley tests were compared using a 2x2 repeated measures analysis of variance to compare mean development quotients for the two groups (PIP-hostel vs. comparison) across the two times of testing (baseline vs. 3-months follow-up). The repeated measures variable was treated as a multivariate indicator providing a slightly more conservative solution to the problem of correlated measurement in the repeated measures variable (Tabachnick & Fidell, 2006). Separate analyses were performed for each of the Bayley scales predicting a significant interaction between group and time factors. Where significant interactions were found, tests of simple effects were performed to identify the significance of changes within each of the groups and the size of the difference between the groups at each time point. As there was a suggestion of differences between the groups in terms of age of mothers and children and mother's education, all analyses were repeated with child's and mother's age and advanced educational qualification (NVQ or higher education) as covariates. As

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none of the covariates were significant and did not alter the pattern of results these are not reported in the paper but are available from the authors on request. There are 6 scales to the CIB and these were included together in a single multivariate repeated effects model with the multivariate group x time interaction effect as the test of the study hypothesis linking the PIP hostel intervention to change of mother – infant interaction patterns. If the omnibus interaction was significant the separate scales could be independently explored in terms of the amount of contribution they made to the interaction.

Results

Participants

A total of fifty-nine mother-baby pairs participated in evaluation; 30 in the intervention (PIP) hostel and 29 in comparison hostels. There were two families in the intervention hostel and six families in the comparison hostels who were invited to participate and declined. No information about these non-participating families was collected. In the sample, the mothers' mean age was 25 years in the PIP hostel group and 27 years in the comparison group. The child mean age was 7.5 months in the PIP hostel and 9 months in the comparison group. The sample demographics are presented in Table 1.

The two samples were compared to test the quality of match between the experimental and the comparison sample. There was no significant difference in the race distribution of the two groups ($\chi^2=0.2$, $df=2$, n.s.). The differences in mothers' ($t=1.4$, $df=57$, n.s.) and children's' age ($t=1.77$, $df=57$, $p<0.10$) were not statistically significant but the children in the comparison group were slightly older. There was also

[Table 1: Description of the sample]

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a trend for the mothers in the intervention hostel to be better educated ($S=-146$, $df=2$, $p<0.07$).

Clinic attendance

For the intervention group, families attended the drop-in clinic a mean of 10 times from the first attendance until the follow-up interview (s.d. = 5.5 sessions), with most of the families attending almost every week. The range of attendance was between 2 and 21 sessions in a 3-6 month time frame.

Infant Mental and Motor Development

The mean mental and motor developmental index scores at baseline and follow-up are shown in Table 2. A multivariate solution to repeated measures analysis of variance was employed to test the difference in the size of baseline to follow-up change between the two groups. There was a significant interaction effect between Time (baseline vs. follow-up) and Group (PIP vs. Comparison Hostel) for the mean Mental Index scores (Wilks' $\lambda=0.86$, $F_{1,46}=7.8$, $p<.008$). Tests of simple effects were performed to establish significant change. The increase in Mental Index scores was significant in the PIP-Hostel group ($t(24)=2.1$, $p<.04$, $d=.876$). Over the same period there was a decrease in the Mental Index scores in the comparison group. The negative change did not, however, reach statistical significance ($t(22)=1.75$, $p<.10$). The average Mental Index scores of infants in the PIP-Hostel and comparison groups were not significantly different at baseline ($t(46)=1.27$, $p>.20$) but at

follow-up the average PIP-hostel infant's Mental Index score was significantly higher ($t(46)=1.97, p<.05, d=.56$).

Table 2 also displays Motor Index scores on the Bayley. For the Motor Index scores the Time by Group interaction was highly significant (Wilks' $\lambda=.71, F_{1,46}=13.65, p<.001$). The tests of simple effects showed that the pre-post increase in Motor Index scores was highly significant in the PIP-Hostel group ($t(24)=4.9, p<.0001, d=2.04$). Over the same period there was almost no change in the Motor Index scores in the comparison group ($t(22)=-.63, n.s.$). As with Mental Index, the average Motor Index scores of infants in the PIP-Hostel and comparison groups were not significantly different at baseline ($t(46)=-.49, n.s.$) but at follow-up the average PIP-hostel infant's MI score was

[Table 2: Mental and Motor Index scores on the Bayley Scales of Infant Development]

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slightly above the standardized mean score and significantly higher than the comparison group infants ($t(46)=3.19, p<.004, d=.89$).

In summary, the infants in the intervention group showed a 9.7% improvement in their mental development index scores and an 11.8% increase in their motor development scores over the three month study period. This is in contrast to the comparison group infants who showed a 6.2% decrease in their mental development scores and a 2.0 % decrease in their motor development scores.

Parent-Infant Interaction

Brief episodes of play interaction between mother and infant were rated by three expert and reliable coders using the CIB coding system. Ten videos were rated by all coders, and the inter-rater reliability of each subscale was: Parent Sensitivity ($\alpha = 0.936$), Parent Intrusiveness ($\alpha = 0.927$), Child Involvement ($\alpha = 0.957$), Child Withdrawal ($\alpha = 0.861$), Dyadic Reciprocity ($\alpha = 0.947$) and Dyadic Negative States ($\alpha = 0.932$).

As a number of parents declined to be video-recorded, data are only available for a subsample of 12 mother-baby pairs from the PIP hostel group and 14 from the comparison group. The families who declined to be video-recorded did not differ significantly from those who agreed in terms of maternal or infant age, infant gender, maternal education, or Bayley mental and motor scores at baseline and follow-up.

The distribution of the CIB codes permitted these scales to be subjected to the general linear model analyses described above for the Bayley Scales. The means and standard deviations are reported in Table 3. The multivariate ANOVA yielded non-significant

[Table 3: Coding Interactive Behaviour Scale ratings]

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effects for both group and time factors (Wilks' $\lambda = .77$, $F_{6,19} = 0.51$, n.s. and Wilks' $\lambda = .83$, $F_{6,19} = 0.69$, n.s. respectively). The multivariate time x group interaction for the 6 scales combined was not significant (Wilks' $\lambda = .86$, $F_{6,19} = 0.39$, n.s.). Testing for significant

interactions with univariate repeated measures ANOVAs yielded no significant interactions for any of the scales.

Discussion

The findings of this research corroborate reports in other studies which suggest that the conditions of homelessness and living in temporary accommodation may have an adverse impact on children's development (Garcia Coll et al., 1998; Lyons-Ruth, Connell, Grunebaum, & Botein, 1990; Rafferty & Shinn, 1991). The infants in this study were at the lower end of the normal range, almost one standard deviation below the mean, in both their mental and motor development at baseline. About half of the infants in both groups were already experiencing some mental and/or motor developmental delay at baseline. As the mental and motor development of the infants in the comparison hostels started to decline from baseline to the three month follow-up, our results concur with previous research showing a deterioration in developmental outcomes over time (Garcia Coll et al., 1998).

The results showed an unequivocal improvement in the cognitive and motor development of the infants in the intervention hostel relative to those in the control hostels over time. The differential outcomes between the infants in the two groups could not be accounted for by any differences in baseline demographic characteristics. Given that the children had been living in the hostel prior to baseline assessments, the differences that emerged appear to be associated with the introduction of the programme. This improvement is an important finding since studies have shown a link between Bayley Scales outcomes in

infancy, especially on the mental scale, and later cognitive functioning in the preschool years (Crowe, Deitz, & Bennett, 1987; King & Seegmiller, 1973). There appears to be a complex interplay between early developmental status and social risk in predicting later outcomes. Socio-economically at-risk infants with delayed mental and motor Bayley Scales scores at 8 months of age are seven times more likely to have IQ scores below 80 at age 4 years than those from less socially deprived backgrounds who had similar early delays (Willerman, Broman, & Fiedler, 1970).

There are several mechanisms by which these environmental changes can have an impact on infant development. One possible explanation relates to improvements in parents' emotional well-being. Molnar and Rubin (1991) have suggested that the effects of homelessness on children's development and psychological wellbeing may be mediated by parental distress and its effects on parental behaviour. Many parents living in temporary accommodation experience heightened levels of depression and anxiety (Karim et al, 2006) and the deleterious impact of parental depression and anxiety on infant development has been well documented (e.g. Murray, 1992). The supportive peer and professional network that is made available through the intervention may improve parental confidence and reduce a feeling of isolation, thus providing the infant with a parent who feels better able to support their emotional needs.

The intervention may also make a difference at the level of the parent-infant relationship. A primary aim of the clinic is to foster a hostel environment which facilitates good quality emotional interactions between parent-infant dyads. The group is set up to encourage face-to-face interactions with the infants and caregivers are encouraged

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to observe and respond to the infants' communications and attachment cues. There is evidence to support the view that the quality of early parent-infant interactions is predictive of developmental outcomes for children, particularly in high-risk samples (e.g. Sroufe, 2005). We hypothesised that improvements in infant development in the intervention hostel would be mediated by improvements in the quality of parent-infant interactions on the CIB, but our results did not support this. The conclusions that can be made from these findings are, however, curtailed by the small number of families who agreed to be videotaped in interaction with their infants. Other studies have shown significant associations between mothers' behaviour towards their infants and infant development as measured by the Bayley (Lyons-Ruth, Zoll, Connell, & Grunebaum, 1986). The improved Bayley outcomes seen here may be representative of improvements in broader domains which were not measured in this study. For example, an evaluation of an effective early intervention for socially at-risk infants showed significant improvements in Bayley Mental Index scores along with other important improvements in the parent-infant relationship, such as attachment security (Lyons-Ruth et al., 1990).

A further explanation for the findings is that the intervention may have contributed to an environment in the hostel in which the parents' ability to understand their infants' states of mind was enhanced. Parental reflective functioning, or mentalising, has been linked with better quality parent-infant relationships, relational and developmental outcomes (Grienenberger, Kelly, & Slade, 2005; Slade, 2005; Slade et al., 2005). Where parents

have had painful or traumatic experiences themselves, their capacity to consider the thoughts and feelings of others may become limited or distorted (Fonagy, Steele, Moran, Steele, & Higgitt, 1991). As described, many families living in temporary accommodation have experienced broken relationships, family breakdown, or, especially in the case of refugee families, dislocation, violence or loss. These are all factors which may impede the parent's capacity to reflect on the thoughts, feelings and intentions of others (Schechter et al., 2005; Schechter et al., 2008). An important characteristic of the clinic model is the strong focus on the baby as an individual with their own thoughts and feelings. In a non-stigmatising atmosphere, the team aim to continuously draw attention to the infants' states of mind. As one mother commented: *"I've seen (the health visitor) and the other people in theretalk to (my baby). First I used to think she doesn't understand what you're saying...then I've copied them and she does. She responded to me."* (James & Newbery, 2010, p.96). Over time and through a dynamic group process, the parents may become more adept at taking an inquisitive stance in relation to their infants' thoughts and feelings. Affective and emotional interactions in which the parent is able to mentalize enable the mother and the child to harmonize their emotional state with each other through a process of affective attunement (Stern, 1985).

The group setting links resident families, staff, and volunteers and provides a rich environment for building a system that is attuned to thinking about the baby. We suggest that this enables an infant-focused atmosphere to permeate the hostel, during the clinic times and beyond it. The surprising effectiveness of the treatment might lie in the group format of the intervention. It is not simply the professionals' intervention with each of the families that may bring about positive change, but the families' influence on each other may amplify this effect. The potency of mentalisation-based treatments has been found to

be greatly enhanced by the inclusion of group-based interventions (Bateman & Fonagy, 2004). The linking of mothers with their babies and with other mothers may resonate with the broader based attachment system of the extended/communal family which is lost to so many homeless parents. The therapist and clinic team work together to provide a holding atmosphere for each other, staff and families. There is decreased

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anxiety in the network as child protection cases are helped more safely within the team and are not the sole responsibility and source of concern for the health visitor. The benefits of the clinic intervention may be brought about through a complex interplay of all of these individual, dyadic and systemic factors.

Limitations

There are a number of confounding factors in this study, some of which may explain the observed effects. The two outcome measures used, the BSID and the CIB, are objective observer rated assessments which could be used with all the families, regardless of language and cultural background. A limitation of the BSID is that it may be subject to variability, depending on the state of the child at the time of the assessment. The overall developmental scores may be confounded by these factors, but they do not account for any differences between the two groups as these issues were the same for both intervention and control groups. The data on the second outcome measure, the CIB, is limited as many mothers in both groups refused to give permission to be video-recorded. This is unsurprising given the vulnerability of the participants in this study, but it does limit

the conclusions that can be drawn about the effect of the intervention on the quality of parent-infant interactions. Where parents did consent to being videotaped, their concerns about potential child care proceedings may have influenced their behaviour during the observation period. Furthermore, brief video-recorded interactions may limit the external validity of the measure as the ten-minute samples may have been insufficient to capture the overall quality of parent-infant relationship. A further limitation is that a quasi-experimental design was used and the researcher who conducted the assessments was not blind to treatment group. Further studies with larger samples, with a broader range of outcome measurements, with a randomised design, and in other settings will provide more substantive data on the efficacy of this specialist baby clinic model and its applicability to other contexts.

Conclusion

This study presents an evaluation of an innovative intervention that aims to reach a high risk population of parents and babies who have difficulty accessing community-based groups and specialist psychological services. The model brings parent-infant psychotherapy to at-risk infants through the ordinary services of a health visiting baby clinic, where a parent-infant psychotherapist joins a multi-disciplinary team. The results of this study showed a clear improvement in the cognitive and motor functioning of infants living in the intervention hostel relative to those living in hostels where the intervention was not provided. These encouragingly positive developmental outcomes may be linked with the changes that the group-based intervention was able to facilitate within the hostel setting, specifically in how each baby's social, emotional and attachment needs are observed, considered and responded to. These results may have important implications for the provision of frontline services to vulnerable families. Readily accessible group-

based interventions such as this may be a potent means of service delivery. This intervention model is relatively non-costly and applicable to other settings, and may be a valuable means of providing an effective service to some of society's most vulnerable infants.

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[Acknowledgements]

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Table 1. Description of the sample

	PIP Hostel	Comparison Hostel	Total
	N = 30	N = 29	N = 59
<i>Mother's ethnic group: N</i>			
White	10 (33.3%)	9 (31.0%)	19 (32.2%)
Black	11 (36.7%)	12 (41.4%)	23 (39.0%)
Asian	8 (26.7%)	7 (24.1%)	15 (25.4%)
Other	1 (3.3%)	1 (3.4%)	2 (3.4%)
<i>Mother's education: N</i>			
GCSE or less	11 (44%)	19 (70.4%)	30 (57.7%)
High School	4 (16%)	0 (0%)	4 (7.7%)
NVQ	5 (20%)	6 (22.2%)	11 (21.2%)
Higher Education	5 (20%)	2 (7.4%)	7 (13.5%)
<i>Infant gender: N</i>			
Male	17 (56.7%)	12 (41.4%)	29 (49.2%)
Female	13 (43.3%)	17 (58.6%)	30 (50.8%)
Mother's age: Mean (SD)	25.0 (5.2)	27.0 (5.5)	25.9 (5.4)
Infant's age (months): Mean (SD)	7.5 (3.9)	9.4 (4.7)	8.5 (4.4)
Corrected infant age: Mean (SD)	7.2 (3.9)	9.3 (4.6)	8.2 (4.4)

Table 2. Mental and Motor Index scores on the Bayley Scales of Infant Development

	PIP Hostel	Comparison Hostel	Total
	N = 30	N = 29	N = 59
	Mean (SD)	Mean (SD)	Mean (SD)
<i>Mental Index Scores</i>			
Baseline	91.1 (11.6)	95.7 (12.7)	93.3 (12.2)
Follow-up	97.5 (10.4)	90.9 (12.6)	94.3 (11.8)
Significance of change	p<.04 ^a	P<.10	
<i>Motor Index Scores</i>			
Baseline	91.4 (11.0)	93.1 (13.8)	92.2 (12.3)
Follow-up	102.5 (11.5)	91.5 (13.1)	97.2 (13.4)
Significance of change	p<.001 ^b	P<.5	

a. Change over time significant at the .05 level

b. Change over time significant at the .001 level

Table 3. Coding Interactive Behavior scale ratings

	PIP Hostel	Comparison Hostel	Total
	N = 12	N = 14	N = 26
	Mean (SD)	Mean (SD)	Mean (SD)
<i>Sensitivity</i>			
Baseline	30.0 (4.8)	28.8 (6.4)	30.1 (5.8)
Follow-up	31.8 (7.7)	29.5 (7.0)	30.4 (7.3)
<i>Intrusiveness</i>			
Baseline	4.3 (1.0)	4.9 (2.0)	4.7 (1.6)
Follow-up	4.7 (1.0)	4.7 (1.6)	4.7 (1.3)
<i>Involvement</i>			
Baseline	12.6 (3.9)	14.9 (4.2)	14.4 (4.0)
Follow-up	14.8 (3.9)	14.7 (4.1)	14.7 (3.9)
<i>Withdrawal</i>			
Baseline	3.6 (0.8)	3.4 (1.2)	3.2 (1.0)
Follow-up	4.1 (2.0)	3.4 (1.4)	3.7 (1.7)
<i>Dyadic reciprocity</i>			
Baseline	8.5 (2.9)	8.8 (2.8)	9.3 (2.8)
Follow-up	9.5 (2.6)	9.1 (3.1)	9.3 (2.9)
<i>Dyadic negativity:</i>			
Baseline	3.4 (1.4)	3.6 (1.9)	3.4 (1.6)
Follow-up	3.6 (1.8)	3.0 (1.5)	3.3 (1.6)