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Abstract

The studies reported here aimed to test the proposal that mind-mindedness is a quality of personal relationships by assessing mind-mindedness in parent–child dyads where the relationship has not spanned the child’s life or where the relationship has been judged dysfunctional. Studies 1 and 2 investigated differences in mind-mindedness between adoptive parents (*n*s 89, 36) and biological parents from the general population (*n*s 54, 114). Both studies found lower mind-mindedness in adoptive compared with biological parents. Study 2’s results showed that this group difference was independent of parental mental health and could not fully be explained in terms of children’s behavioral difficulties. Study 3 investigated differences in mind-mindedness in foster carers (*n*=122), biological parents whose children were subject to a child protection plan (*n*=172), and a community sample of biological parents (*n*=128). The level of mind-mindedness in foster carers and parents who were involved with child protection services was identical and lower than that in the community sample; children’s behavioral difficulties could not account for the difference between the two groups of biological parents. In all three studies, non-biological carers’ tendency to describe their children with reference to pre-adoption or placement experiences was negatively related to mind-mindedness. These findings are in line with mind-mindedness being a relational construct.

Key words: mind-mindedness; adoption; fostering; behavioral difficulties; child protection

Mind-mindedness in Looked After Children

Mind-Mindedness in Parents of Looked After Children

Mind-mindedness (Meins, 1997) indexes caregivers' attunement to their children's mental and emotional states. In infancy, mind-mindedness is assessed from caregivers' tendency to comment in an appropriate manner on their infants' thoughts or feelings (Meins, Fernyhough, Fradley, & Tuckey, 2001; Meins et al., 2012) or from caregivers' meaningful interpretations of their infants' early non-word vocalizations (Meins, 1998). In children beyond infancy, mind-mindedness is assessed in terms of parents' tendency spontaneously to focus on mental characteristics when given an open-ended invitation to describe their child (Meins, Fernyhough, Russell, & Clark-Carter, 1998).

A growing body of research has shown that both the infant observational and preschool describe-your-child measures of mind-mindedness relate to various aspects of children's development, such as secure attachment (Laranjo, Bernier, & Meins, 2008; Lundy, 2003; Meins et al., 1998, 2001, 2012), and superior executive function (Bernier, Carlson, & Whipple, 2010) and mentalizing (Centifanti, Meins, & Fernyhough, 2016; Laranjo, Bernier, Meins, & Carlson, 2010, 2014; Lundy, 2013; Meins, Fernyhough, Arnott, Leekam, & de Rosnay, 2013; Meins et al., 1998) abilities. Research has also shown that mind-mindedness does not reduce to obvious social or personal factors relating to the parent or child. For example, both infant and preschool measures of mind-mindedness are unrelated to child characteristics such as gender (McMahon & Meins, 2012) and general cognitive ability (Meins et al., 1998, 2001), and to caregiver characteristics such as socioeconomic status (Meins et al., 1998, 2012; Meins, Centifanti, Fernyhough, & Fishburn, 2013) and psychological health (Meins et al., 2011; Walker, Wheatcroft, & Camic, 2012), although clinical levels of mental illness are associated with lower mind-mindedness (Pawlby et al., 2010; Schacht et al., in press).

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Rather than being determined by the characteristics of the individual parent or child, Meins, Fernyhough, and Harris-Waller (2014) argued that mind-mindedness is a quality of personal relationships. They based their argument on the results of a series of studies in which they compared levels of mind-mindedness in relation to different targets. While there was concordance in adults' mind-minded descriptions of individuals with whom they had a personal relationship (child and partner, partner and close friend), mind-minded descriptions of a significant other were unrelated to individuals' tendency to describe famous figures or inanimate objects in mind-minded ways. These findings have been replicated by Hill and McMahon (2016). Meins et al. (2014) thus argued that mind-mindedness is not trait-like; rather, it is a relational construct. Individuals are mind-minded about an individual because they have gained knowledge of that person's likes, dislikes, interests, and feelings through being in an intimate relationship with them.

Further evidence for mind-mindedness being a relational construct comes from links between mind-mindedness and the quality of the relationship in question. As mentioned above, parental mind-mindedness is associated with secure parent-child attachment (Laranjo, et al., 2008; Lundy, 2003; Meins et al., 1998, 2001, 2012). Moreover, when parents' psychological wellbeing is defined in relational terms, such as perceived stress in relation to parenting, associations with mind-mindedness emerge in community samples. For example, parents' mind-minded descriptions of their children are negatively related to concurrent levels of reported parenting stress (McMahon & Meins, 2012; Walker et al., 2012), and Demers, Bernier, Tarabulsky, and Provost (2010) reported that parenting stress in the first year of life was an independent predictor of parents' later tendency to describe their children in positive mind-minded ways. McMahon and Meins argued that mothers who are more mind-minded are better able to understand their children's behavior and therefore less likely to

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perceive their children as irritating and irrational; they thus perceive parenting as being less stressful.

The studies reported here tested the proposal that mind-mindedness is a relational construct by investigating levels of mind-mindedness in different types of parent–child relationship. Studies 1 and 2 focused on comparing mind-mindedness in adoptive and biological parents, and Study 3 involved foster carers and biological parents whose children were subject to child protection plans. There are a number of reasons to propose that mind-mindedness will be lower in relation to adoptive and foster caregiver–child relationships than in biological parent–child relationships. First, parenting in adoptive and foster families will have been non-continuous. Not having experienced caring for the child from birth may make caregivers feel less knowledgeable about the child or make them represent the child in terms of their pre-placement experiences rather than their own mental and emotional characteristics. Participating families were residents of the United Kingdom (UK), where it is commonplace for adoptions to occur well after the child’s birth; the average age of adoption is 3 years 3 months (Department for Education UK, 2015) and children are typically adopted from the care system. Before the final adoption order is granted, the child will spend periods of time living with the adoptive parents before returning to care in preparation for the child taking up permanent residence in the adoptive family. Care is likely to be even less continuous in foster families, where placement instability is common (Sinclair, Wilson, & Gibbs, 2005).

Second, adoptive children report lower levels of closeness with both mothers and fathers compared with biological children (Loehlin, Horn, & Ernst, 2010). Rueter, Keyes, Iacono, and McGue (2009) investigated differences in relationship quality between adoptive and biological dyads using self-report and independent observer methods; some of the

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parents in this study had both adopted and biological children, enabling comparisons to be made between the parent's relationship with each child. They found that adoptive families reported more conflict compared with their biological counterparts, and families with adopted and biological children reported more conflict in the relationship with the adopted than with the biological child. Parents rated the adopted children's behavior as being less warm and more conflictual than that of biological children. More recently, Walkner and Rueter (2014) found that adoptees and adoptive parents reported higher levels of relationship conflict, and adoptees were observed to be more conflictual than their biological counterparts. Adoptees and adoptive parents also reported lower levels of closeness than did biological parents and children. Foster carers are likely to have been responsible for the child's care for shorter periods of time compared with adoptive parents, with an expectation that the placement is not permanent. Short-term foster care may last up to a few years, with the main goal being reunification of the child with their birth parents (Colton & Williams, 2006).

If mind-mindedness is a relational construct, the more problematic and transient nature of relationships in adoptive and foster families would lead one to hypothesize that mind-mindedness will be lower in adoptive parents and foster carers compared with their biological counterparts. We also explored whether the age at which the child was adopted or the length of the adoption related to parents' mind-mindedness. It may be that mind-mindedness will be higher in adoptive parents whose children were adopted at a younger age or who have been adopted for longer because they will have had more opportunities to learn about their children's thoughts and feelings. Conversely, given that all adoptive parents will have encountered the same experience of having to adapt to a new child, age at adoption and length of adoption may not relate to mind-mindedness. Indeed, one could argue that parents who are at relatively early stages of the adoption process will be more attuned to what their

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child may be thinking or feeling, and more concerned with learning about their child's likes, dislikes, and interests than parents whose children were adopted several years ago.

The three studies reported here also explored non-biological parents' descriptions of their children in greater detail to investigate whether the mind-mindedness coding scheme developed for biological parents was suitable for coding descriptions of adopted and foster children. For example, non-biological parents may describe their children in terms of their experiences before becoming a member of their family, and so the existing coding scheme may need to be adapted to account for such descriptions. If descriptions that refer to pre-placement experiences are found to occur with reasonable frequency, they might be informative about the ways in which non-biological parents represent their children. Tending to represent the child in terms of the reasons they were taken into care may make parents less likely to describe their children with respect to their current individual mental and emotional attributes. If this is the case, these descriptions relating to the child's placement would be negatively correlated with mind-minded descriptions.

The third study reported here tested the proposal that mind-mindedness is a relational construct by investigating mind-mindedness in biological families where the relationship between parent and child is known to be problematic. We decided to focus on families where there was an objective assessment of difficulties in the parent-child relationship rather than rely on parental report of the quality of the relationship. There are likely to be strong social desirability biases in parents reporting on the quality of the relationship, perhaps particularly in cases where parenting has been identified as being poor. To avoid this problem, we assessed mind-mindedness in parents whose children were subject to a child protection plan. In the UK, if concerns about a child's welfare are reported, the local authority is compelled to investigate and make a judgement on whether the child is at risk of significant harm (neglect

or abuse). Cases where risk of significant harm is identified result in the children being subject to a child protection plan. Such children are allowed to live with their parents unless it is deemed too unsafe for them to do so. Parent–child relationships in families where the child is subject to child protection procedures have therefore been judged to be dysfunctional. We thus hypothesized that such parents would be lower in mind-mindedness compared with their biological counterparts whose children were not at risk of abuse or neglect.

In summary, the main aim of the studies reported here was to investigate mind-mindedness in biological and non-biological families. If Meins et al.'s (2014) argument that mind-mindedness is a relational construct holds, lower levels of mind-mindedness will be observed in (a) adoptive parents and foster carers in comparison with biological parents, and (b) dysfunctional biological parent–child relationships than in typical biological parent–child relationships.

Study 1

Method

Participants

Participants were adoptive parents ($n = 89$, 8 fathers), biological parents ($n = 54$, 6 fathers) and their children (adopted children, 41 girls, 31 boys, 17 declined to answer; biological children, 29 girls, 22 boys, 3 declined to answer). Mean child age at placement for adoption was 40 months (range 3 days to 108 months), and all children had been with the adoptive family for a minimum of 6 months ($M = 71$ months, range 6 to 187 months). The sample of biological families had children who had never been taken into care or been subject to a child protection plan.

The groups of adoptive and biological parents were broadly comparable in terms of occupational status as assessed using the Office for National Statistics National Standard

Occupational Classification 2010 Index, which codes occupations on a 1 to 10 scale, with higher scores indicating less professional occupations. In the adoptive group, 39% of parents were in managerial or professional occupations and 24% were not in employment; in the biological group, 31% of parents were in managerial or professional occupations and 31% were not in employment. The project was approved by the relevant university ethics committees.

Materials and Methods

Both adoptive parents and biological parents completed the describe-your-child measure online. Meins et al. (2014) reported no differences in mind-mindedness between online questionnaire and face-to-face interview administration. A link to the online questionnaire was circulated to adoptive parents via several channels: advertisements on a host adoption agency's social media pages, direct approach to participants by the adoption agency via email, a national adoption charity message board, and word of mouth between adopters. Biological parents were recruited via a link on a national online parenting forum. When participants in both groups clicked on the link, they arrived at a participant information screen which gave details of the study and requested consent for participation. All parents were informed that they provided information anonymously, that they could withdraw from the study at any point, and that their data would be destroyed upon withdrawal. All parents were asked to provide demographic information on their age, gender, and occupation, and their children's age and gender. Adoptive parents completed questions detailing their children's age at adoption, the length of the adoption, and the reasons the child was placed for adoption (if known). This was then followed by completion of the mind-mindedness measure.

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Mind-mindedness. After completing the demographic questions, parents were instructed: “Think of your child. Please use the space below to tell us a little about him or her. There are no right or wrong answers; you can describe your child any way you wish”.

For both adoptive and biological parents, descriptions were divided into discrete attributes that were coded into exhaustive and exclusive categories according to criteria in the mind-mindedness coding manual (Meins & Fernyhough, 2015): (a) mental, referring to the child’s mental life, including emotions, personality, intelligence, knowledge, and intellectual activities (e.g., ‘loving’, ‘anxious’, ‘clever’, ‘knows what she wants’, ‘very good at science’, ‘loves reading’); (b) behavioral, including activities and interactions with others (e.g., ‘friendly’, ‘outgoing’, ‘gets on well with people’); (c) physical, including age, birth order, and appearance; or (d) general, including non-specific value judgements (e.g., ‘nice’, ‘lovely’, ‘challenging’) and descriptions that did not fit into the other three categories.

Higher scores for mental descriptions indicate higher levels of mind-mindedness. Since no specific hypotheses were made with regard to the other individual types of description, behavioral, physical, and general scores were summed to create a non-mental description category. Scores for mental and non-mental descriptions were expressed as a percentage of the total number of descriptions.

Adoptive parents’ descriptions of their children were then recoded to investigate whether the coding scheme needed to be adapted for adoptive parents. Of the 89 adoptive parents, 41 included at least one comment relating to the reason for their child being adopted or pre-adoption experiences (e.g., ‘taken into care age 18 months’, ‘five foster care placements before us’, ‘in care for too long before adoption plan made’, ‘did not deserve the treatment that he had’, ‘birth family wanted to keep him’). A *Placement* category was

therefore created for these descriptions. Note that in the original coding scheme, such descriptions were coded in the general category.

All transcripts were coded by a researcher who was blind to all other data, and a randomly selected 25% of transcripts was coded by a second, blind coder (note that it was impossible for coders to be blind to adoption status in cases where parents mentioned adoption-related experiences in their child descriptions); inter-rater reliability: $\kappa = 0.86$.

Results

Descriptive Statistics and Preliminary Analyses

Child age was unrelated to the proportion of mental characteristics in parents' descriptions, $r(268) = -.01, p = .878$, and although parent age was negatively correlated with the proportion of mental characteristics, $r(266) = -.14, p = .022$, the effect was small. Parental occupation was negatively correlated with the proportion of mental characteristics, $r(266) = -.17, p = .006$, indicating that parents who had more professional occupations were more likely to describe their children with reference to mental characteristics, but once again, the effect was small.

As shown in Table 1, adoptive parents were older and had more professional occupations than biological parents, and adoptive children were older than their biological counterparts.

Are Adopted Parents Less Mind-Minded than Biological Parents?

Relations between adoption status and parents' mental and non-mental descriptions of their children (see Table 1) were investigated using MANCOVA. Scores for mental versus non-mental child descriptions were entered as dependent variables, adoption status (adoptive, biological) was entered as a fixed factor, and parent age, parental occupation, and child age were added as covariates. There was a main effect of adoption status, $F(1, 134) = 6.97, p =$

.001, $\eta^2 = .060$: biological parents scored more highly than adoptive parents for mental descriptions, $F(1, 134) = 7.52, p = .007, \eta^2 = .059$, and adoptive parents scored more highly than biological parents for non-mental descriptions, $F(1, 134) = 8.77, p = .004, \eta^2 = .068$.

Child Descriptions in the Adoptive Group

Table 2 shows the descriptive statistics for the different types of child description adoptive parents used. Placement description scores were non-normally distributed; non-parametric Spearman's ρ correlations are therefore reported.

Adoptive parents' scores for placement descriptions were negatively correlated with those for mental descriptions, $\rho(87) = -.50, p < .001$, but placement description scores were unrelated to non-mental description scores (sum of behavioral, physical, general excluding placement descriptions), $\rho(87) = -.13, p = .234$.

Relations between Adoptive Parents' Mind-Mindedness, Children's Age at Placement, and Length of Adoption

Correlational analyses investigated relations between children's age at placement and length of adoption and the scores for parents' descriptions of their children. Only 8 of the 89 adopted children had been adopted for less than a year (ranging between 6 and 10 months). Mental description scores were unrelated to length of adoption, $r(87) = .05, p = .497$, and children's age at placement, $r(87) = .14, p = .211$. Placement description scores were positively correlated with children's age at placement, $\rho(87) = .22, p = .039$, but were unrelated to length of adoption, $\rho(87) = -.15, p = .159$.

In this sample, only two children were placed for adoption very soon after birth (at 3 and 5 days), hence this group could not be compared with those adopted later in development. For information, the mean mental description score for the two parents who

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had adopted at birth was 0.47 ($SD = 0.04$), compared with 0.26 ($SD = 0.19$) for parents ($n = 29$) who had adopted children aged between 3 and 24 months, and 0.38 ($SD = 0.24$) for parents ($n = 58$) who had adopted children over age 2.

Discussion

Compared with their biological counterparts, adoptive parents were less likely to describe their children with reference to mental characteristics and more likely to describe them in non-mentalistic terms. Given that adoptive relationships are characterized by lower levels of reported closeness (Loehlin et al., 2010; Rueter et al., 2009; Walkner & Rueter, 2014), this group difference is consistent with the proposal that mind-mindedness is a quality of personal relationships (Meins et al., 2014). Mind-mindedness was unrelated to length of adoption or the age at which the children were adopted, but all children had been adopted for at least 6 months (with only 8 children having been adopted for between 6 and 12 months) and only 2 were adopted shortly after birth.

Study 1 demonstrated that the scheme developed for coding biological parents' descriptions of their children needed to be adapted for adoptive parents. A new category was added to index adoptive parents' tendency to mention pre-adoption experiences, such as the reason for the child being taken into care or relationships with biological relatives or foster carers; almost half of the adoptive parents mentioned such experiences in describing their children. Moreover, parents' tendency to include this type of comment was negatively related specifically to their tendency to describe their children in mind-minded ways, showing that a focus on pre-adoption experiences was associated with parents being less willing or able to describe their children in terms of their mental qualities.

However, before drawing strong conclusions about adoptive parents being less mind-minded than their biological counterparts, it is necessary to consider alternative factors that

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might explain the observed group difference. For example, adoptive and biological families may differ from one another in ways other than their adoption status, and such differences may explain why adoptive parents were found to be less mind-minded than biological parents in Study 1. Although the incidence of post-adoption depression is similar to that of postnatal depression (Foli, South, Lim, & Hebdon, 2012; O'Hara & Swain, 1996; Vesga-Lopez et al., 2008), research has suggested that adoptive parents face unique obstacles to parenthood in comparison to biological parents: difficulties with infertility (Daniluk & Hurtig-Mitchell, 2003), fear and anxiety associated with new responsibilities and lack of social support (McKay & Ross, 2010), and unrealistic expectations for their children and of themselves as new parents (Foli, 2010; Foli et al., 2012). Study 2 assessed parents' depression and anxiety and their representations of children and childrearing to explore whether differences in these factors between adoption and biological parents could explain the observed group difference in mind-mindedness.

Differences also exist between adoptive and biological families with respect to the child's behavior. Adopted children exhibit higher levels of behavioral difficulties compared with biological children (Cohen, Coyne, & Duvall, 1993; Juffer & van IJzendoorn, 2005; Lansford et al., 2001; Wierzbicki, 1993). If the child's behavior is seen as difficult and challenging, this may impede parents' ability to take the child's perspective and represent their children with reference to their internal states. Thus, in Study 2, parents reported on their children's behavior in order to investigate whether differences in mind-mindedness between adoptive and biological parents remained once children's behavior was controlled.

In summary, Study 2 attempted to replicate Study 1's finding that adoptive parents' mind-mindedness was lower than that of their biological counterparts. In addition, Study 2 assessed parents' views about children and childrearing, parental mental health, and

children's reported behavioral difficulties to investigate whether these factors might account for differences in mind-mindedness between adoptive and biological parents. Finally, Study 2 attempted to replicate Study 1's finding that describing adopted children with reference to their pre-adoption experiences is negatively related to describing them in mind-minded ways.

Study 2

Method

Participants

Participants were adoptive parents ($n = 36$, 4 fathers), biological parents ($n = 114$, 12 fathers), and their children (adopted children, 12 girls, 24 boys; biological children, 61 girls, 53 boys) living in the UK. Mean child age at placement for adoption was 41.65 months ($SD = 34.90$ months, range 10 days to 165 months, 1 parent refused to answer), and all children had been with the adoptive family for a minimum of 5 months ($M = 64.26$ months, $SD = 43.18$ months, range 5 to 194 months, 2 parents refused to answer). The sample of biological families had children who had never been taken into care or been subject to a child protection plan.

Materials and Methods

All parents completed the describe-your-child measure online. The procedure for recruiting adoptive and birth parents was identical to that described in Study 1. Parents first provided demographic and adoption-related information as described in Study 1 and then went on to complete further measures in the order described below.

Mind-mindedness. Data were collected and coded as described in Study 1. All transcripts were coded by a researcher who was blind to all other data, and a randomly selected 25% of transcripts was coded by a second, blind coder (note that it was impossible

for coders to be blind to adoption status in cases where parents mentioned adoption-related experiences in their child descriptions); inter-rater reliability: $\kappa = 0.90$.

Parents' Views on Children and Childrearing. Parents completed the Concepts of Development Questionnaire (CODQ; Sameroff & Feil, 1985), which assesses parental attitudes and values towards the behavior/development of children. The questionnaire includes 20 items, tapping two different levels of parental thinking. Ten items represent the *categorical* level, whereby parents view themselves and their child as separate entities, and child development as resulting from the child's character, independent of the dyadic relationship and parental actions (e.g., "an easy baby will grow up to be a good child"). The remaining 10 items represent the *perspectivist/compensating* level, whereby parents view child development as a result of transactional processes, or individual experiences within a specific context, which may also be related to age and development (e.g. "the mischief that 2-year-olds get into is part of a passing stage they'll grow out of").

Participants were required to rate their level of agreement with each statement on a 4-point scale (strongly agree to strongly disagree). CODQ Total scores are calculated by adding together the summed amount of agreement for perspective/compensating items and the summed amount of disagreement to the categorical items (potential range 20–70).

Parental Mental Health. Parental mental health was assessed using the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983), a self-report measure used to assess mood and anxiety symptoms. There are 14 items, 7 describing symptoms of anxiety, and 7 describing symptoms of depression. Participants were asked to rate how much they had been affected by each particular symptom/how frequently they had experienced it in the last month, on a 4-point scale (0–3). For both the depression and anxiety scales, potential scores range from 0 to 21; higher scores indicate more frequent/severe symptoms. The HADS has

good discriminant validity, internal consistency, and concurrent validity (Bjelland, Dahl, Tangen Haug & Neckelmann, 2002). Depression and anxiety scores were positively correlated, $r(148) = .59, p < .001$.

Children's Behavioral Difficulties. Parents reported on their children's behavioral difficulties by completing the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The SDQ is a screening questionnaire for a range of behavioral difficulties, suitable for use with children aged between 3 and 16 years. There are 25 items, rated on a 3-point scale, yielding scores of behavioral difficulties in four main areas: (a) emotional symptoms, (b) conduct problems, (c) hyperactivity/inattentiveness, and (d) peer problems. The four subscales can be summed to give a Total Difficulties score, ranging from 0 to 40. Higher scores indicate greater behavioral difficulties, with scores between 14 and 16 indicating borderline clinical difficulties, and scores of 17 and above indicating clinical level difficulties.

It has been shown that children with higher total difficulties scores have greater rates of psychopathology, as judged by the prevalence of a clinical disorder (Goodman & Goodman, 2009). Reliability, validity, internal consistency, test-retest reliability after 4- to 6-months, and inter-rater agreement for the SDQ are satisfactory (Goodman, 2001). The SDQ has been deemed an appropriate screening tool for detection of emotional, behavioral, and concentration problems among looked after children (Goodman, Ford, Corbin, & Meltzer, 2004).

Results

Descriptive Statistics and Preliminary Analyses

Child age was unrelated to mental description scores, $r(148) = .06, ps = .496$. Parent age was negatively correlated with mental description scores, $r(148) = -.19, p = .017$. Parental education was unrelated to mental description scores, $r(148) = .12, p = .138$.

Reported child behavioral difficulties were positive correlated with parental anxiety, $r(148) = .59, p < .001$, and depression, $r(148) = .42, p < .001$. Parents' CODQ scores were unrelated to children's behavioral difficulties and parental anxiety and depression ($r_s < .10, p_s > .227$).

As shown in Table 3, adoptive parents were older and more highly educated than their biological counterparts, but there was no difference in age between adoptive and biological children. Compared with biological parents, adoptive parents reported higher levels of behavioral difficulties in their children, but there were no group differences in parents' mental health and CODQ scores (see Table 3).

Relations between Mind-Mindedness and Parents' Views about Children, Parental Mental Health, and Child Behavioral Difficulties

Mental description scores were negatively correlated with HADS anxiety, $r(148) = -.18, p = .032$, and children's reported behavioral difficulties, $r(148) = .18, p = .031$, and the negative correlation with HADS depression approached significance, $r(148) = -.15, p = .071$. Parents' CODQ scores were unrelated to mental and description scores, $r(148) = .08, p = .312$.

Are Adopted Parents Less Mind-Minded than Biological Parents?

Replicating the results of Study 1, with parent age and education entered as covariates, there was a main effect of adoption status $F(1, 146) = 6.19, p = .014, \eta^2 = .042$; biological parents scored more highly than adoptive parents for mental descriptions, $F(1, 146) = 4.72, p = .032$, and adoptive parents scored more highly than biological parents for non-mental descriptions, $F(1, 146) = 4.75, p = .031, \eta^2 = .033$.

The MANCOVA was then re-run, with parents' HADS depression and anxiety scores and children's behavioral difficulties scores added as additional covariates. Controlling for parental mental health, the main effect of adoption status was maintained: for mental

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description scores, $F(1, 144) = 5.46, p = .021$; for non-mental description scores, $F(1, 144) = 5.51, p = .020$. But when SDQ scores were additionally included, the main effect of adoption status was reduced to trend level: for mental description scores, $F(1, 143) = 3.83, p = .052$; for non-mental description scores, $F(1, 143) = 3.79, p = .054$.

Child Descriptions in the Adoptive Group

In the adoptive group, 13 (36%) parents included at least one placement description. Placement description scores were non-normally distributed; non-parametric Spearman's ρ correlations are reported. Replicating the results of Study 1, adoptive parents' scores for placement descriptions were negatively correlated with those for mental descriptions, $\rho(34) = -.23, p = .004$, but placement description scores were unrelated to non-mental description scores, $\rho(34) = -.05, p = .559$.

Relations between Adoptive Parents' Mind-Mindedness, Children's Age at Placement, and Length of Adoption

Correlational analyses investigated relations between children's age at placement and length of adoption and parents' child description scores. Mental description scores were unrelated to length of adoption and to children's age at placement ($r_s < .09, p_s > .618$), as were placement scores ($r_s < .21, p_s > .247$). Only 1 child had been adopted shortly after birth (at 10 days); only 4 children had been adopted for less than 1 year (for 5 or 6 months).

Discussion

The main aim of Study 2 was to investigate whether the observed difference in mind-mindedness between adoptive and biological parents could be explained in terms of parents' views about children and child development, parental mental health, and children's behavioral difficulties. Study 2 replicated Study 1's finding that adoptive parents were less

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likely than their biological counterparts to describe their children in mind-minded ways. The group difference was maintained when parents' reported mental health was controlled, but the difference between adoptive and biological parents was reduced to a non-significant trend when children's behavioral difficulties were additionally controlled. Reported behavioral difficulties were higher in the adoptive group than in the biological groups, with adoptive parents on average reporting levels of difficulties in the borderline clinical range.

Mental descriptions were negatively correlated with behavioral difficulties. The fact that this correlation represented a small effect serves to explain why the difference in mind-mindedness between the adoptive and biological groups was maintained at trend level rather than being reduced to non-significance when behavioral difficulties were controlled. Finally, in the adoptive group, we replicated the finding of Study 1 that adoptive parents' descriptions of their children with reference to their pre-adoption and placement experiences were negatively related to describing the child in mind-minded ways. Study 2 also replicated the finding that mind-mindedness was unrelated to the length of the adoption and to the age at which the child was adopted.

Studies 1 and 2 both assessed mind-mindedness in relation to the same types of parent-child relationship (biological versus adoptive). The aim of Study 3 was to establish whether lower levels of mind-mindedness generalized to other types of non-biological relationships by including different comparison groups: foster carers and parents whose children are subject to a child protection plan. Foster carers are likely to have been responsible for the child's care for shorter periods of time than adoptive parents, with an expectation that the placement is not permanent. Short-term foster care may last up to a few years, with the main goal being reunification of the child with their birth parents (Colton & Williams, 2006). However, if professionals deem this to be untenable or unachievable,

children are placed permanently in alternative family settings with adoptive parents, kinship carers, or long-term foster carers (Schofield, 2002; Child Welfare Information Gateway, 2015). In addition, it is typical for foster carers in the UK to be responsible for caring for a number of children at any one time, and placement instability is a common experience (Sinclair, Wilson, & Gibbs, 2005). For these reasons, we predicted that levels of mind-mindedness would be lower in foster carers than in a community sample of biological parents.

Second, neither Study 1 nor Study 2 had any measure of the quality of the biological parent–child relationships. Assessing how mind-mindedness varies across relationships that are known to differ in quality is the most obvious way to test the proposal that mind-mindedness is a relational construct. In order to investigate this issue, Study 3 included a sample of biological parents whose children were subject to a child protection plan as a result of the child having been judged to be at risk of harm. Consequently, parent–child relationships in these families are known to be dysfunctional and problematic, rather than loving and warm. Thus, we expected mind-mindedness in these parents to be lower compared with biological parents whose children had never been identified as at risk.

Study 3

Participants

Participants were 422 caregivers, falling into one of three groups: (a) foster carers and their children ($n = 122$, 64 boys, 58 girls) with a mean age of 85.02 months ($SD = 23.35$, range 32–117 months), (b) biological parents ($n = 172$, 66 mothers, 8 fathers, 18 family relatives), whose children are living at home and have never been in care, but are subject to a child protection plan (88 boys, 86 girls), with a mean age of 77.90 months ($SD = 20.21$, range 30–114 months), and (c) a community sample of biological parents, none of whom had ever

been involved with children protection services ($n = 128$, all mothers, 62 boys, 66 girls), whose mean age was 61.38 months ($SD = 1.06$, range 59–64 months). Children in the foster care and child protection groups were participating in a birth cohort study. Children in the community sample were part of a longitudinal study and the describe-your-child measure was administered at the age-5 phase; the age range in this sample is therefore smaller than that in samples (a) and (b). Community sample families came from wide-ranging social backgrounds, with 55 (43%) being classified as low socioeconomic status (parents with no post-16 education and no/menial/manual employment). Parent age in the biological parents whose children were subject to a child protection plan was $M = 32.26$ years, $SD = 6.32$, range 19–50, and parents in the community sample were $M = 33.18$ years, $SD = 5.43$, range 21–43. Ages were not available for the foster carers. The study was approved by the relevant university ethics committees.

Materials and Methods

All participants completed the describe-your-child measure as part of a face-to-face interview. Interviews began with an explanation of the purpose of the interview ('We want to find out how your child is getting on, so I'll mainly be asking about the child's health, development and general behaviour'). Informed consent was then obtained from the participant. All parents began by giving details of their child's date-of-birth, gender, ethnicity, and their relationship to the child. Foster carers gave details of the date their child was placed with them and the child's age when they were placed with them. Participants in all groups then completed the describe-your-child measure immediately following completion of demographic questions, as part of a longer interview focused on the child and family functioning. The foster carers and biological parents whose children were subject to a

child protection plan completed the interview in their homes; the community sample of parents completed the interview at the university's developmental laboratories.

Measures

Mind-Mindedness. For the foster carers and biological parents whose children were subject to a child protection plan, the interviewer entered the caregiver's reply verbatim into an Excel file. The community group's responses were audiotaped and responses were transcribed verbatim. The child descriptions from all three groups were coded for mind-mindedness by a trained researcher who was blind to all other data as described in Study 1. A second trained, blind researcher coded a randomly selected 25% of the descriptions; $\kappa = .96$.

Children's Behavioral Difficulties. After finishing the interview, parents from all groups reported on their children's behavioral difficulties by completing the SDQ (Goodman, 1997), as described in Study 2.

Results

Descriptive Statistics and Preliminary Analyses

Mental description scores were unrelated to child age, $r(418) = -.04, p = .416$, parent age, $r(267) = .02, p = .787$, and parental education, $r(418) = .07, p = .133$. Children's reported behavioral difficulties were negatively correlated with mental description scores, $r(418) = -.16, p < .001$.

Children in the community sample group were younger than those in foster care ($p < .001$) and those subject to a child protection plan ($p < .001$). Children subject to a child protection plan were younger than those in foster care ($p = .003$), but there was no age difference between the child protection and community sample groups ($p = .810$). Table 4 shows the parent education scores for the three groups. Parents in the community sample were more highly educated than foster carers ($p < .001$) and parents whose children were

subject to a child protection plan ($p < .001$), but the latter two groups did not differ on education scores ($p = .965$).

Table 4 also shows children's SDQ scores. Foster carers reported higher levels of behavioral difficulties in their children compared with biological parents in the child protection ($p = .006$) and community sample ($p < .001$) groups, but the latter two groups did not differ in reported child behavioral difficulties ($p = .400$).

Are Parents in the Community Group More Mind-Minded than Parents in the Foster and Child Protection Groups?

Relations between parent type and parents' descriptions of their children were investigated using MANCOVA, with mental and non-mental description scores added as dependent variables, parent type (foster, child protection plan, community) entered as a fixed factor, and child age and parent education added as covariates. There was a main effect of adoption status $F(2, 417) = 4.57, p = .011, \eta^2 = .039$. Post-hoc tests showed that parents in the community group scored more highly on mental descriptions compared with parents whose children were subject to a child protection plan ($p = .049$). There were trends (a) for parents in the community group to score more highly on mental descriptions than foster carers ($p = .081$), and (b) for parents in the community group to score less highly on non-mental descriptions than foster carers ($p = .091$) and parents whose children were subject to a child protection plan ($p = .072$).

When children's reported behavioral difficulties was added as a further covariate, the main effect of parent type was maintained, $F(2, 414) = 4.16, p = .016, \eta^2 = .011$. Post hoc tests showed only one significant pairwise comparison: parents in the community group scored more highly on mental descriptions than parents whose children were subject to a child protection plan ($p = .038$).

Child Descriptions in the Foster Care Group

In the foster care group, 24 (20%) of carers included at least one placement description. Placement description scores were non-normally distributed; non-parametric Spearman's ρ correlations are therefore reported. As was the case for the adoptive parents in Studies 1 and 2, placement descriptions were negatively correlated with mental descriptions, $\rho(120) = -.27, p = .002$. There was also a trend for placement descriptions to be negatively correlated with non-mental descriptions, $\rho(120) = -.18, p = .053$.

General Discussion

How do the results of the three studies reported here fit with Meins et al.'s (2014) proposal that mind-mindedness is a relational construct? Given that adoptive and foster relationships were non-continuous, the observed lower levels of mind-mindedness in adoptive parents and foster carers (at trend level) compared with their biological counterparts fits with the notion mind-mindedness is a quality of personal relationships. Study 2 showed that the difference in mind-mindedness between adoptive and biological parents could not be explained in terms of group differences in parental mental health. In Study 3, biological parents whose children had been identified as at risk of abuse and neglect, and who were consequently subject to a child protection order, had lower levels of mind-mindedness than a community sample of biological parents. Given that parent-child relationships where the child subject to a child protection plan have been judged to be dysfunctional, the observed lower level of mind-mindedness in these parents is in line with the proposal that mind-mindedness is a relational construct.

The results of Studies 2 and 3 also highlight the role of children's reported behavioral difficulties in relation to mind-mindedness in non-biological versus biological caregivers. Levels of reported behavioral difficulties were higher in the adoptive and foster groups than

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in the biological groups, and in both studies, behavioral difficulties were negatively correlated with parents' mind-mindedness. Controlling for behavioral difficulties reduced the difference in mind-mindedness between the adoptive and biological groups to marginal significance (Study 2) and resulted in the difference between foster carers and biological parents disappearing. The more parents perceive their children's behavior to be difficult, the less they may focus on their children's mental characteristics. Perceiving the child's behavior to be difficult is likely to have a negative impact on the quality of the parent-child relationship, and the observed negative association between mind-mindedness and behavioral difficulties is therefore consistent with the proposal that mind-mindedness is a relational construct. On average, the reported levels of behavioral difficulties in the adoptive and foster groups were in the borderline clinical range, highlighting the severity of problem behavior perceived by these caregivers. To explore the relation between perceived child behavioral difficulties and parents' mind-mindedness further, it would be interesting to investigate whether levels of mind-mindedness are lower in biological parents whose children have been referred to clinical services for behavioral difficulties compared with biological parents whose children's behavior is within the typical range.

Reported child behavioral difficulties cannot, however, explain the lower level of mind-mindedness in biological parents whose children were subject to a child protection plan compared with typical biological parents. There was no difference between these groups in parents' report of difficult behavior in their children, and the group difference in mind-mindedness was maintained when behavioral difficulties were controlled. Neither could level of parental educational attainment explain this difference. Future research should explore whether parental factors associated with the risk of abuse or neglect may help further explain the observed lower level of mind-mindedness in parents in the child protection group. For

example, lack of social support, experience of domestic violence, or substance abuse may all contribute to these parents' comparative inability to represent their biological children in terms of their mental characteristics.

At first glance, the finding that length of adoption was also unrelated to mind-mindedness may seem at odds with the proposal that mind-mindedness is a relational construct. However, all of the adoptions were at least 5 months in length, with the vast majority being considerably longer. Moreover, there is a lengthy process whereby the child lives with the adoptive parents for a substantial period of time prior to the final adoption order being granted. The null findings may thus have arisen because all of the adoptive relationships were long standing. Alternatively, the fact that all adoptive parents will have encountered the same experience of adapting to a new child and attempting to learn about their likes, dislikes, and interests may explain the lack of association between length of adoption and mind-mindedness.

In all three studies, a negative association was found between non-biological caregivers' mind-minded descriptions and their tendency to describe their children with reference to pre-adoption and placement-related experiences. This suggests that automatically representing the child in terms of their history in the care system or involvement with the birth family may impede caregivers' ability to see the child in the here-and-now and appreciate their current thoughts, feelings, intentions, motivations, and so on. While professionals working with adoptive parents emphasize the importance of acknowledging the child's history and respecting the child's existing identity, dwelling on the child's past and representing the child predominantly in terms of his or her pre-adoption experiences may not be ideal.

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It is important for adoptive parents to understand that all children go through periods of difficult and challenging behavior, and that such behavior does not necessarily stem from the child's past history. Typical development entails children at times being anxious, shy, happy to approach new people, independent, overly-sensitive, argumentative, verbally challenging, aggressive, and so on. If parents view their children's behavior as being pre-determined by their experiences before they were adopted, it is likely that they will be less able to think about alternative reasons for their child's behavior and feel less effective in their parenting; in turn, this may lead to greater parenting stress and parent-child conflict.

In line with this suggestion, some adoptive parents in the studies reported here used technical psychological terms to describe their relationships with their adopted children: "insecure-avoidant attachment causing great difficulties" (age 9), "he has an ambivalent (*sic*) disinhibited attachment style" (age 13), "although she presents as 'normal', her attachment style is chaotic" (age 15). It seems unlikely that adoptive parent-child attachment will have been formally assessed. Adoptive parents' tendency to focus on their children's attachment difficulties appears to reflect practitioners' heavy emphasis on attachment in working with adoptive parents. Several researchers have highlighted how this emphasis is neither evidence-based nor helpful. For example, Barth, Crea, John, Thoburn, and Quinton (2005) called for child and family services to consider alternative perspectives on and explanations for problem behaviors, observing that "professionals who would convince parents that their children may have attachment impairments—and that these will vex their children and families forever—are not reading the caveats from developmental scholars" (p. 259).

Recognizing that the adopted child cannot be defined purely in terms of their pre-adoption experiences may be especially important for adoptive parents who are attempting to form a life-long relationship with the child. Brodzinsky (1987, 1990) highlighted how certain

views about the adopted child's differences may hinder forming a lasting relationship. Brodzinsky (1990) argued that "insistence on difference" is ineffective as a coping strategy, and likely to lead to family disharmony and over-reliance on genetic explanations of children's behavioral and emotional problems. Assessing parents' descriptions of their children may be a resource-effective way to provide professionals with additional information on parents and carers who may need more support. As part of the adoption process, it may also be useful to ask parents to describe their ideal child; this description could then be compared with parents' descriptions of their actual children when they are placed with the family. Parents whose descriptions between their ideal and actual children are most discrepant are likely to be those most in need of support.

It would be interesting for future research to explore mind-mindedness before and after the adoption process or foster placement to investigate whether levels of mind-mindedness change as the parent-child relationship becomes more intimate and well-established. Previous research involving biological families has suggested that mind-mindedness is relatively stable over time (Illingworth, MacLean, & Wiggs, 2016; Kirk et al., 2015; Meins, Fernyhough, Arnott, Leekam, & Turner, 2001; Meins et al., 2003; McMahon, Camberis, Berry, & Gibson, 2016). But this stability has been observed only within early childhood, and no study has investigated whether mind-mindedness changes in concert with fluctuations in the quality of the relationship. Such research would help further refine our understanding of the mind-mindedness construct. Mind-mindedness may not simply apply to a relationship rather than an individual, but may vary as a function of changes in the quality of the personal relationship in question.

Given that only three children across Studies 1 and 2 were placed with the adoptive family very soon after birth, future research should also investigate whether mind-

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mindfulness in adoptive parents who were able to form relationships with their children at birth differs from that seen in parents who adopted their children when they were older. With regard to foster placements, it would be interesting to explore whether foster carers' expectations about the placement relate to mind-mindedness. For example, if the expectation is that the placement will be relatively short, foster carers may be less willing to take the child's perspective and engage with the child's internal states. If carers are uncertain about how long the placement will last, they may be more cautious about investing in the relationship, since their involvement in the child's life may be only brief (Kinsey & Schlosser, 2012). The transitory nature of foster placements is likely to make foster carers struggle to know whether to define themselves as parents or professional service providers (Blythe, Wilke, & Halcomb, 2014). In line with this proposal, Dozier and Lindhiem (2006) reported that the number of children fostered was negatively related to foster mothers' commitment to their children. Investigating attitudes and expectations about the placement in relation to mind-mindedness in foster carers would therefore be worthwhile.

Further research to investigate mind-mindedness in non-biological parents could assess mind-mindedness in families where there are adopted or foster children in addition to biological children. Measuring the same caregiver's mind-mindedness when describing an adopted/foster versus biological child would enable one to control for parent-related differences, as well as addressing potential genetic and environmental contributions to mind-mindedness. Similarly, genetic and environmental contributions could be investigated by exploring mind-mindedness in step-parents' descriptions of their biological and step children. It would also be interesting to obtain mind-mindedness measures from both parents to establish if there is evidence for concordance in caregivers' descriptions of their adoptive or foster children. Lundy (2013) reported concordance in couples' mind-minded descriptions of

their biological children, but this issue has not yet been investigated in non-biological caregivers. It may be the case that discordant representations of the adoptive or foster child will relate to higher levels of parenting stress or disruption to the placement and the caregiver–child relationship.

The finding that there are considerable individual differences in mind-mindedness within the adoptive and foster care groups highlights how some adoptive parents and foster carers are notably more mind-minded than others. There is no reason to suggest that positive associations with mind-mindedness observed in biological parents will not hold for mind-minded adoptive and foster carers. If this is the case, adoptive parents and foster carers who are mind-minded should experience lower levels of parenting stress (Demers et al., 2010; McMahon, 2012) and be more attuned to their children's needs (Lundy, 2013). Given the associations between mind-mindedness and positive aspects of children's development observed in typical biological families (e.g., Meins et al., 1998), future research should investigate whether mind-mindedness is similarly related to children's development in foster and adoptive families.

Limitations

The results of the three studies reported here should be interpreted in light of a number of limitations. First, unlike the foster carers who were approached by researchers, the adoptive parents were self-selected, and thus may not be representative of adoptive parents as a whole. Parents may have chosen to complete the describe-your-child measure either because they felt positively about their adopted child and the parent–child relationship or because they were experiencing difficulties with their child and perhaps wished to take part in research in order to learn more about these issues. To establish levels of mind-mindedness in a more representative sample of adoptive parents, future research could administer the

describe-your-child measure as part of the measures taken during completion of the adoption process.

Second, there were slight variations in how the child description data were collected for the community group versus the child protection and foster groups in Study 3. Parents in the community group had their descriptions recorded and later transcribed, whereas the other two groups of parents had their descriptions transcribed in real time. This procedural difference may explain the differences in mind-mindedness in these two groups in comparison with the community group. However, there is no obvious reason why having caregivers' answers transcribed in real time should make them less likely to describe their children in mind-minded ways. Moreover, Meins et al. (2014) reported that administration mode (transcribed interview, paper and pen written description, online written description) was unrelated to mind-mindedness. That said, future research should attempt to replicate these findings using identical procedures for transcription.

Finally, caregiver mental health measures were not taken in Study 3. Although parental anxiety and depression did not account for the difference in mind-mindedness between the adoptive and biological parents in Study 2, it is important to investigate whether elevated mental health difficulties in foster carers and biological parents at risk of abusing or neglecting their children may account for their low level of mind-mindedness in comparison with typical biological parents.

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Table 1

Study 1: Descriptive Statistics as a Function of Adoption Status

	Adoptive		Biological		Group Difference	Effect size
	Mean (SD)	Range	Mean (SD)	Range	<i>t</i>	<i>d</i>
Child age in months	108.09 (50.16)	36–204	86.89 (33.12)	36–132	2.76**	.51
Parent age in years	44.78 (6.58)	30–62	37.85 (6.78)	25–50	5.99***	.97
Parent occupational status	4.96 (3.32)	1–10	3.68 (2.47)	1–10	2.42*	.44
Mental descriptions (proportion)	0.33 (0.23)	0–1	0.47 (0.21)	0–1	3.75***	.63
Non-mental descriptions (proportion)	0.66 (0.23)	0–1	0.52 (0.20)	0–1	3.74***	.65

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 2

Adoptive Parents' Proportional Scores for the Child Description Categories

	Mean (SD)	Range
Mental descriptions	0.34 (0.23)	0–1
Behavioral descriptions	0.12 (0.13)	0–0.50
Physical descriptions	0.17 (0.16)	0–1
General descriptions	0.15 (0.16)	0–1
Placement descriptions	0.11 (0.15)	0–0.67

Table 3

Study 2: Descriptive Statistics as a Function of Adoption Status

	Adoptive		Biological		Group Difference <i>t</i>	Effect Size <i>d</i>
	Mean (SD)	Range	Mean (SD)	Range		
Child age in months	110.44 (48.24)	37–200	100.32 (41.45)	35–198	1.22	.23
Parent age in years	45.11 (6.70)	27–56	38.75 (6.41)	25–55	5.14***	.97
Mental descriptions (proportion)	0.38 (0.18)	0–0.83	0.51 (0.22)	0.08–1	3.24***	.65
Non-mental descriptions (proportion)	0.63 (0.19)	0.17–1	0.49 (0.22)	0–0.92	3.27***	.68
Parent education	4.06 (1.24)	1–5	3.33 (1.47)	1–5	2.94**	.54
CODQ Scores	53.03 (3.60)	46–63	52.82 (4.06)	42–61	0.27	.05
HADS Anxiety Score	5.97 (3.89)	0–17	6.55 (3.69)	1–18	0.81	.15
HADS Depression Score	4.97 (4.21)	0–14	3.82 (3.02)	0–15	1.81	.32
SDQ Total Score	14.61 (6.45)	5–29	8.33 (4.98)	0–25	6.13***	1.10

** $p < .01$, *** $p < .001$

Note: CODQ = Concepts of Development Questionnaire; HADS = Hospital Anxiety and Depression Scale; SDQ = Strengths and Difficulties Questionnaire.

Table 4

Descriptive Statistics as a Function of Parent Type

	Community		Child Protection		Foster	
	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range
Child age in months	61.38 (1.06)	59–64	77.90 (20.22)	30–114	85.02 (23.35)	32–117
Mental descriptions (proportion)	0.42 (0.25)	0–1	0.35 (0.26)	0–1	0.35 (0.26)	0–1
Non-mental descriptions (proportion)	0.58 (0.24)	0–1	0.65 (0.26)	0–1	0.65 (0.26)	0–1
Parent education	2.94 (1.63)	1–5	2.01 (2.08)	1–5	2.07 (1.54)	0–5
SDQ Total Score	10.91 (5.81)	0–31	11.97 (6.92)	0–34	14.52 (8.03)	0–32

Note: SDQ = Strengths and Difficulties Questionnaire.