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## Spending leisure time together: Parent child relationship in families of children with an intellectual disability

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### ABSTRACT

**Background:** Relationship quality between a parent and a child typically differs between families with a child with intellectual disability (ID) and families with other children. Parent-child relationship quality matters in ID as it has been linked with child outcomes. However, there are few research studies examining factors that are related to parent-child relationship quality in ID.

**Aims:** The aim of the present study was to investigate factors associated with parent-child relationship quality in families of children with ID. In particular, we aimed to examine the association between the amount of time parents and children spend together in leisure activities and parent-child relationship quality.

**Methods and procedures:** The sample was drawn from the 1000 Families Study, a survey including parent-reported data from families of children with ID aged 4–16 years. Measures of parent-child relationship quality and shared parent-child time were available.

**Outcomes:** Regression analyses showed that parental investment in shared leisure time was significantly associated with parent-child closeness and conflict, even after controlling for a number of factors related to relationship quality. Parental psychological distress was also associated with parent-child relationship quality.

**Conclusions and implications:** Interventions that aim to improve parent-child relationship quality may want to investigate the role of shared parent-child time in leisure activities as one of the mechanisms of change.

### 1. Introduction

Families of children with an intellectual disability may face many challenges. Population-representative data have shown that parents of children with an intellectual disability are more likely to experience poverty, poorer physical health, and a higher caring load compared to parents of typically developing children or carers of people with other lifelong conditions (Emerson et al., 2010; Totsika, Hastings & Vagenas, 2017). These various challenges may lead to negative effects on the dynamic of the family (Gridland et al., 2014; Trivette et al., 2010).

Potentially related to these stresses and challenges faced by families, parent-child relationship quality may differ between families

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with a child with intellectual disability and families with typically developing children. Totsika et al. (2014) compared parent-child relationship quality between families of children with an intellectual disability and families whose children did not have intellectual disability. Parent-child relationship quality was poorer in families of children with an intellectual disability, with higher levels of conflict and lower level of closeness (Totsika et al., 2014) compared to families with other children.

The quality of parent-child relationships has been shown to be associated with maternal mental health in families of children with an intellectual or developmental disability (Lewallen & Neece, 2015; Rodas et al., 2016) with parental stress and distress predicting later lower levels of positive relationships and higher levels of negative parent-child relationship (Hickey et al., 2020; Totsika et al., 2020). Family poverty (e.g., income poverty, hardship and subjective poverty) has also been associated with later deterioration in parent-child relationship quality and parenting (Totsika et al., 2020). However, research in families of children with an intellectual disability is limited and, as such, information on other factors potentially associated with parent-child relationship quality is also limited. Drawing on studies of typically developing children, there is evidence that younger child age is associated with more positive parent-child relationships (Nomaguchi, 2012) while child and caregiver sex are also associated with parent-child relationship (Starrels, 1994). Higher maternal education level is associated with more positive parent-child relationships (Huston and Rosenkrantz Aronson, 2005). Parent employment status is also considered important for parent-child relationship quality (Lemmon et al., 2018; Roeters et al., 2010), hypothesising that parental employment may reduce parent-child relationship quality.

It has been suggested that parents who spend more time with their children generally form closer, more nurturing relationships (Hochschild, 1997; Huston and Rosenkrantz Aronson, 2005). Shared time could be defined as the time a parent spends with their child engaged in joint conversations and/or joint activities. Shared time could be conceptualized as a parental time investment. Hill (1988) suggested that time spent in joint activities requires a time commitment on behalf of the parent. Spending time in shared activities may result in an increase in mutual understanding or in increased enjoyment derived from an activity that was experienced as mutually pleasant (Hill, 1988). These experiences could in turn lead to a closer, more positive relationship between the parent and their child (Del Guidice & Belsky, 2011). Indeed, Roeters et al. (2010) investigated parent-child relationships among 1008 fathers and 929 mothers with typically developing school-aged children and found that lower quality of parent-child relationships was linked with spending less time on joint parent-child activities. Hence, shared time in joint activities may be an important factor to investigate in relation to the quality of parent-child relationships in families of children with an intellectual disability. In a study of typically developing infants, Hudson and Rosenkrantz Aronson (2005) confirmed the association between time spent together and maternal sensitivity but also identified that not all shared time is associated with parent-child relationship quality; in their study spending more time in social interaction was associated with parent-child relationship quality whereas time spent in instrumental activities (feeding, cleaning, etc) was not. Therefore, it is likely that not all shared time is linked to parent-child relationship quality. Leisure activities in families of autistic children have been associated with family relationship quality (Walton, 2019). Unlike other parent-child activities (e.g., feeding, dressing, supporting with homework), leisure activities are performed for the enjoyment they offer; spending time in mutually enjoyable activities may therefore support positive interactions between parents and children thus enabling a more positive parent-child relationship.

In research among populations with an intellectual disability, evidence has demonstrated an association between parent-child relationship quality and child externalising problems, over and above the association with parenting behaviours (Schuiringa et al., 2015). More crucially, a longitudinal study demonstrated that, after controlling for the effect of parenting behaviours, parent-child relationship quality (both a close and negative relationship) was associated with later behaviour problems in children, suggesting that poorer parent-child relationship quality may be a risk factor for child behaviour and mental health problems in neurodevelopmental disabilities (Totsika et al., 2014). This evidence in intellectual disability research aligns with broader evidence of both cross-sectional and longitudinal associations between parent-child relationship quality and child mental health, in particular internalising mental health problems (McLeod et al., 2007; van der Voort et al., 2014). Thus, it is important to identify factors associated with parent-child relationship quality in families of children with an intellectual disability to inform intervention approaches that can improve relationship quality and ultimately child outcomes.

The present study investigated factors associated with parent-child relationship quality in families of children with an intellectual disability, drawing on data from a large cohort of families of children with intellectual disability in the UK (the 1000 Families Study; Hastings et al., 2020). Drawing on existing evidence, we aimed to examine the association between shared time and the quality of parent-child relationship after controlling for the effect of other factors known to be associated with parent-child relationship quality.

## 2. Methods

We used data from the 1000 Families Study of 1184 families with 4–16 year old children with an intellectual disability (Hastings et al., 2020). Ethical approval was provided by the UK National Health Service (NHS) West Midlands—South Birmingham Research Ethics Committee: REC reference number: 15/WM/0267 (11 September 2015). Participants were recruited through multiple channels, including websites and social media advertisements by the research team, advertisement in special schools and parent support networks, advertisement in disability organisations' newsletters. Inclusion criteria related to child age, parental consent for participation and family residence in any of the four UK countries. Families were excluded if their child with an intellectual disability did not live with them full-time (e.g., those living in special residential schools). The presence of intellectual disability was established through parental report and participants provided written informed consent prior to any data collection.

## 2.1. Participants

There were 1184 children with an intellectual disability (ID) in the study. Some of the children also were reported to have co-occurring conditions including autism (45.5 %), Down syndrome (13.6 %), visual impairments (23.9 %), hearing impairments (13.9 %), epilepsy (12.5 %), mobility problems (49.3 %), and other physical health problems (41 %). Children were approximately 9 years old ( $SD = 2.93$ ), while 61.8 % were boys.

Parent respondents were mostly female caregivers ( $n = 1005$ , 84.9 %), most of whom were biological mothers ( $n = 923$ , 78 %). About 60 % of parent respondents were educated at University degree level or higher, while 43.3% were in paid employment. A detailed description of the cohort profile can be found in [Hastings et al. \(2020\)](#).

## 2.2. Measures

### 2.2.1. Child-parent relationship scale (CPRS)

The child-parent relationship scale (CPRS) is a questionnaire that measures the parent's perception of their relationship with their child ([Driscoll and Pianta, 2011](#)). It is a 15-item scale that includes eight items that measure conflict and seven items measuring closeness. Items are scored on a 5-point Likert scale from 1 'Definitely does not apply' to 5 'Definitely applies' ([Pianta, 1992](#)). Total scores for conflict and closeness are derived by summing their respective items. In the current study, scale score reliability of the CPRS Closeness scale was (Cronbach's alpha) 0.77. Scale score reliability of the CPRS Conflict scale was 0.86.

### 2.2.2. Child-parent activity index (CPAI)

The child-parent activity index (CPAI; [Totsika, 2015](#)) is a 5-item measure of the frequency of time shared between a parent and a child on leisure activities. Parents were asked to report on the frequency of reading or sharing a story with their child, singing together, playing together, watching TV together, and going out together for enjoyment. Each item is scored on a 5-point Likert scale with values ranging from 1 = 'Not at all' to 5 = 'Every day'. A total shared time score is derived by summing the items, with higher values indicating more shared parent-child time. Cronbach's alpha was 0.62, which appears low but remains satisfactory for an index, such as this one, in which scores are formed by a cumulation of items that are not expected to be correlated with one another. As a measure of joint parent-child time, it is similar to measures used in time-use research in typical development (e.g., [Roeters et al., 2010](#); [Bianchi et al., 2006](#)) but with a specific focus on leisure activities.

### 2.2.3. Parents' psychological distress

Psychological distress was measured using the K-6 ([Kessler et al., 2002](#)). Parents reported on how often the six symptoms (e.g., nervousness, hopelessness, restlessness) were experienced in the past 30 days on a five-point Likert scale (from 0 = 'none of the time' to 4 = 'all the time'). A total score is obtained by summing the six items, and higher scores indicate higher levels of psychological distress. In the present study, Cronbach's alpha indicated good scale score reliability ( $\alpha = 0.88$ ).

### 2.2.4. Sociodemographic information

Sociodemographic variables identified in the literature review as potentially important covariates of parent-child relationship quality were extracted from the 1000 Families Study database: child age and gender, caregiver gender, caregiver employment status (employed/unemployed), caregiver education (above or below University Degree level) and whether families were living in the most deprived 10% of neighbourhoods ('[English indices of deprivation, 2012](#)). IMD measures relative deprivation for small areas (also known as Lower Super Output Areas (LSOAs)). It is a combined measurement based on 37 separate indicators, grouped into 7 domains. Each domain reflects a specific aspect of deprivation typically experienced by individuals living in an area. UK areas with score in the top 10 % were categorised to be the most deprived areas ('[English indices of deprivation, 2012](#)).

**Table 1**  
Hierarchical regression results for CPRS closeness.

Variable	B	95% CI		SE B	Beta ( $\beta$ )	R <sup>2</sup>	$\Delta R^2$
		LL	UL				
<b>Step 1</b>						0.069	0.07***
Shared parent-child time	0.38***	0.28	0.47	0.05	0.26***		
<b>Step 2</b>						0.109	0.04***
Shared parent-child time	0.38***	0.28	0.48	0.05	0.27***		
Child Age	0.20***	0.08	0.31	0.06	0.11***		
Child Gender	0.23	-0.49	0.96	0.37	0.02		
Caregiver Gender	0.17	-1.38	1.73	0.79	0.01		
Employment	-0.22	-0.89	0.46	0.35	-0.02		
Education	0.25	0.06	0.44	0.10	0.09		
10% Most Deprived on IMD	0.25	-1.05	1.56	0.67	0.01		
Parental psychological distress (K6)	-0.13***	-0.19	-0.07	0.03	-0.13***		

Note. CI = confidence interval; LL = lower limit; UL = upper limit; \*\*\* $p < .001$

### 2.2.5. Data analyses

All statistical analyses were conducted in SPSS (IBM® SPSS® Statistics 27). Two regression models were fitted, one for CPRS Conflict and one for CPRS Closeness. The main predictor of interest was shared parent-child time as measured by CPAI. Potential covariates for inclusion in the regression models were identified initially from relevant literature as described in the Introduction. Bivariate associations between each co-variate and the CPRS outcomes were then fitted to ensure that potential covariates were indeed correlated with the CPRS outcomes prior to inclusion in the regression models. Potential covariates presented small but significant ( $p < .05$ ) correlations with either CPRS outcome, with the exception of the IMD area deprivation variable that was taken forward to the next step along with the remaining co-variables for its likely affiliation to the outcome as an alternative deprivation indicator.

Unadjusted models were first ran to assess the association between shared parent-child time with CPRS Closeness and CPRS Conflict. Following this, covariates were added to explore the adjusted association between parent-child time and CPRS outcomes.

## 3. Results

Table 1 below shows the hierarchal regression model results. For the first model, regression results indicated that shared parent-child time significantly predicted CPRS Closeness,  $\beta = 0.26, p < .001$ . Following the inclusion of the covariates, parent-child time still significantly predicted CPRS Closeness,  $\beta = 0.27, p < .001$ ; for every one point of increase in the frequency of shared time closeness increased by one third of a standard deviation. In terms of covariates, child age ( $\beta = 0.11, p < .001$ ) and parental psychological distress ( $\beta = -0.13, p < .001$ ) were significantly associated with CPRS Closeness. The adjusted model explained 10.9 % of the variance in CPRS closeness scores.

Table 2 below show the hierarchal regression model results for the CPRS Conflict measure. Shared parent-child time significantly predicted CPRS Conflict,  $\beta = -0.20, p < .001$ . Following the inclusion of the covariates, shared time was still significantly associated with CPRS Conflict,  $\beta = -0.12, p < .001$ . For every one point increase in the frequency of shared time, conflict decreased by 0.12 standard units. In terms of the covariates, only parental psychological distress was significantly associated with CPRS ( $\beta = 0.32, p < .001$ ). The adjusted model explained 15.5% of the variance in the CPRS Conflict scores.

## 4. Discussion

Findings showed that spending more time in joint leisure activities was associated with higher levels of closeness and lower levels of conflict in the parent-child relationship in families of children with an intellectual disability, even after controlling for the effect of other factors known to be associated with parent-child relationship quality. These findings are in line with research in families of typically developing children (Nomaguchi, 2012; Roeters et al., 2010). Existing literature in typical development has mostly focused on shared time in joint activities as a potential moderator of the relationship between external constraints on maternal time, such as through employment, and parent-child relationship quality (Lemmon et al., 2018; Roeters et al., 2010). However, in the present study we were interested in the association between shared time and parent-child relationship quality after controlling for other factors known to be associated with parent-child relationship quality including employment status. Our focus on shared time was specific to leisure activities, rather than other types of activities that parents may do with their children, such as supporting them with academic tasks or sharing household chores. Leisure activities, unlike other types of activities, were considered more likely to support the putative link between shared time and relationship quality (Hill, 1988) through enhancing mutual understanding or facilitating mutual enjoyment from activities.

While child older age was associated with higher levels of closeness (though not conflict), parental psychological distress was systematically associated with relationship quality; higher levels of psychological distress were associated with more conflict and less closeness. The finding is in line with previous research in families of children with an intellectual disability (Totsika et al., 2020).

Findings need to be considered in light of the study's limitations. While we included a large cohort of families of children with an intellectual disability, participants were not representative of the UK population. There was overall low representation of ethnic

**Table 2**  
Hierarchal regression results for CPRS conflict.

Variable	B	95% CI		SE B	Beta	R <sup>2</sup>	$\Delta R^2$
		LL	UL				
<b>Step 1</b>							
Shared parent-child time	-0.42***	-0.55	-0.28	0.07	-0.20***	0.041	0.04***
<b>Step 2</b>							
Shared parent-child time	-0.21***	-0.38	-0.10	0.07	-0.12***	0.155	0.12***
Child Age	0.23	0.06	0.39	0.09	0.09		
Child Gender	-0.28	-1.30	0.73	0.52	-0.02		
Caregiver Gender	1.29	-0.89	3.48	1.12	0.04		
Employment	0.23	-0.72	1.18	0.49	0.02		
Education	-0.14	-0.40	0.12	0.13	-0.03		
10% Most Deprived on IMD	0.58	-1.25	2.42	0.94	0.02		
Parental psychological distress (K6)	0.46***	0.37	0.54	0.05	0.32***		

Note. CI = confidence interval; LL = lower limit; UL = upper limit; \*\*\* $p < .001$

minority groups in the sample, which calls for a replication of the present findings across different cultural and ethnic groups. The lack of a robust ascertainment of intellectual disability precluded the possibility of checking whether the findings differ at different levels of disability severity. As the data were cross-sectional, no inferences about causality are possible. Future studies investigating the directionality of the association need to include longitudinal data. While parent-child relationship quality is a reciprocal construct that is best measured through perceptions of both parents and children (Dubé et al., 2022), the present study relied on parent report only. Parent report was considered a compromise for allowing the collection of data from families of children with any level of intellectual disability as over 40% of parents indicated having a child with severe to profound disability (Hastings et al., 2020). Finally, it is unclear whether the current 5-item questionnaire adequately captures all leisure activities may engage with their child with an intellectual disability.

Effective sustainability of family routines is associated with both the balance between resources-activities and with families experiencing activities as meaningful for all its members (McConnell et al., 2016). Time investment in joint leisure activities might facilitate families' experience of family life as more meaningful and enjoyable as well as an additional strain on the resource-activity balance; it is not always easy to invest time in shared activities when demands on family time are high in families of children with an intellectual disability. For this, it is important to investigate in future studies whether the amount of time or the type of activities are more important. A recent study of typically developing siblings found that diversity in the number and type of leisure activities was more important for relationship quality than the frequency of shared time in such activities (Layland et al., 2020). Where a demand on family time is already placed on families by participation in interventions to improve child outcomes through changes in parent-child relationship quality, study findings suggest that supporting shared time around leisure activities while in parallel aiming to reduce psychological distress in parents (e.g. mindfulness interventions; (Dykens et al., 2014) might support this mechanism of change.

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## Declaration of Competing Interest

The authors report no conflicts of interest.

## Data availability

Data will be made available on request.

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