



THE ASSOCIATION BETWEEN TIME SPENT IN DAYCARE AND PRESCHOOL ATTACHMENT TO FATHERS AND MOTHERS: AN EXPLORATION OF DISORGANIZATION

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Although past research on the association between time spent in daycare and mother-child attachment security has been mixed, research on daycare and the father-child attachment relationship is noticeably sparse for the preschool years. Furthermore, research on time in daycare and either mother-child or father-child attachment disorganization in the preschool years is also lacking. This study sought to explore these topics. Fifty-one children aged 3 to 5 (27 girls, $M_{\text{age}} = 3.69$ years, $SD = 0.72$ years) participated in two identical lab visits, one with their father and one with their mother. In the lab, the quality of children's attachment relationships with each of their parents was assessed via a modified Strange Situation for preschool children. Children were divided into two groups based on time spent in daycare: low (1-20 hr/week) and high (21+ hr/week). Spending high amounts of time in daycare did not distinguish children based on attachment security vs. insecurity to either fathers or mothers, but children who spent more than 20 hours per week in daycare were significantly more likely to be classified as disorganized with their fathers. Implications and suggestions for further research are discussed.

Keywords: daycare, attachment disorganization, preschool period, fathers, mothers

Introduction

As maternal employment has been steadily rising over that past few decades, the nature of childcare has also changed. In Canada, the rate of maternal employment has more than doubled in the last three decades, increasing to 65.4% in 2009 (Statistics Canada, 2011). Similarly, the rate of non-maternal child care has also seen a rapid increase. Specifically, it has been reported that 54% of Canadian children six months to five years of age were in some form of out-of-home care arrangement in 2003 – a 12-point increase over the short span of the previous eight years (Statistics Canada, 2006). Given these changes, interest in the relationship between daycare and the parent-child relationship has been growing, especially within the attachment field (Howes & Spieker, 2008).

In general, attachment research aims to understand a child's trust in his or her parents' capacities to comfort and protect in times of distress. It is believed that this aspect of the parent-child relationship plays a crucial role in shaping the child's future social adaptation across the lifespan. Traditionally, attachment relationships have been distinguished based on two broad categories: those that are secure and those that are insecure. While children who form secure attachment relationships with their parents show exploration in new environments and are able to seek comfort from the attachment figure in times of distress, insecurely attached children do not tend to do so as optimally (Ainsworth, 1973, 1989). Insecurely attached children can further be subdivided into avoidant and ambivalent types. Whereas avoidant children actively snub the attachment figure in times of distress, ambivalent children cling to the attachment figure but are not readily soothed. In addition to the secure, avoidant, and ambivalent attachment classifications, a fourth group has been added more recently. Children who show no consistent pattern of attachment are termed disorganized and make up approximately 15% of all children in community samples (Main & Solomon, 1990; van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). While disorganized attachment is said to be a type of insecure attachment, much research also treats this group as separate from all others in what is considered the organized-disorganized attachment dichotomy. Such a dichotomy is based on the notion that the first three attachment categories (i.e., secure avoidant, and ambivalent) comprise stable coping strategies, while the disorganized category does not.

It is important to note that attachment behaviours differ slightly from the infancy years to the preschool years. As children grow and develop language skills, secure, avoidant and ambivalent attachment behaviours increase with regards to the verbal negotiation and planning between parent and child (Cassidy & Marvin, 1992; Main & Cassidy, 1988). The relative function of each attachment type, however, remains fairly similar. In other words, secure children are readily comforted, avoidant children minimize their distress, and ambivalent children exaggerate their distress. For the disorganized classification, however, attachment behaviours in the preschool years are quite different. In older children, disorganization tends to be association with attempts at controlling the parent through either hostile, punitive behaviour or overly caregiving behaviour. Other disorganized preschoolers show a mixed profile of these types of behaviour, while a small minority continues to exhibit anomalous behaviour similar to those seen in disorganized infants.

Since the preponderance of maternal employment and daycare usage, there has been concern that regular separation of child and caregiver would disrupt the formation of a secure attachment relationship (Belsky, 1988). Specifically, it has been suggested that routine separation of a child from its caregiver(s) could be perceived by the child as either rejection or unpredictability on the part of the caregiver – two factors thought to lead to the development of insecure attachment (Chase-Lansdale & Owen, 1987; Vaughn, Gove, & Egeland, 1980). Indeed, several earlier studies have found an association between time in daycare and attachment security in infancy. Among these, extensive non-maternal care exceeding 20 hours per week has been associated with insecure attachment to mothers (Barglow, Vaughn, & Molitor, 1987; Belsky & Rovine, 1988; Jacobsen & Willie, 1984; Schwartz, 1983). Notably, however, other early studies did not find a meaningful relationship between time in daycare and attachment insecurity to mothers (Chase-Lansdale & Owen, 1987; Doyle & Somers, 1978).

More recently, the US National Institute of Child Health and Human Development (NICHD) funded a large, prospective, national longitudinal study entitled the NICHD Study of Early Child Care, which has been described as “the largest and most systematic investigation of day care” to date (Belsky, 2006, p. 96). The NICHD found that time spent in daycare was only

associated with attachment insecurity in the presence of low maternal sensitivity, and only in infancy (NICHD Early Child Care Research Network, 1997). Importantly, however, there was no direct relationship between quantity of daycare and mother-child attachment security in either infancy or in the preschool years (NICHD Early Child Care Research Network, 1997; 2001).

While much of the research on the relationship between daycare and attachment quality has focused on attachment security (and insecurity), little emphasis has been placed upon distinguishing the fourth attachment classification – disorganization – from all others. This is especially warranted given evidence suggesting that attachment disorganization is associated with the least favourable child outcomes of all attachment classifications (see van IJzendoorn et al., 1999). Given that attachment disorganization comprises a lack of stable interaction pattern with a caregiver figure, it is possible that routine and extensive separation from a caregiver figure may increase the risk of disorganization, simply because the child's chances of establishing a stable pattern of interaction, whether secure or insecure, are diminished. Furthermore, it is also possible that for children who spend large amounts of time in daycare, daycare workers may become important caregiver figures to whom additional attachment relationships may be formed (Howes & Spieker, 2008). This may introduce additional confusion to some children who are in the process of establishing stable interaction patterns with their parents. Thus, the association between time in daycare and attachment disorganization warrants investigation.

Research on the association between daycare and father-child attachment is also noticeably sparse, especially for the preschool years. Studies that examined the link between daycare and father-child attachment have focused on infancy. Specifically, Chase-Lansdale & Owen (1987) found that daycare was associated with insecure attachment to fathers, but only among boys. This finding was supported by a later study by Belsky and Rovine (1988). As the preschool years comprise a crucial transition period in which child autonomy and socialization becomes a major challenge to families, the effects of daycare are of particular interest. Moreover, as Paquette (2004) has suggested that fathers play an increasingly important role as an attachment figure starting only in the preschool years, it is possible that results for infancy may not be generalizable. In addition, the father-child attachment relationship may also be of interest because fathers tend to spend less time with children in a caregiving context than mothers (Paquette, 2004). Because of this, it is possible that the effects of prolonged separation, as in the case of extensive daycare, may be stronger than for mothers – especially in terms of attachment disorganization. Although Cabrera, Tamis-LeMonda, Bradley, Hofferth, and Lamb (2000) have highlighted the growing need to consider the father-child relationship in developmental research, to our knowledge, no study to date has examined the relationship between daycare and father-child attachment in the preschool years.

In general, this study aimed to determine whether spending high amounts of time in daycare is associated with attachment insecurity among preschool children to their fathers and mothers. In addition, this study also aimed to determine whether spending high amounts of time spent in daycare is associated with attachment disorganization to fathers and mothers. Based on past research, we expected that children who spend high amounts in daycare, as defined by 20 or more hours per week, would be more likely to exhibit attachment disorganization. Furthermore, we hypothesized that the father-child attachment relationship, compared to the mother-child attachment relationship, might be more strongly affected by high amounts of time in daycare. Given that some studies have demonstrated a gender difference in the association between daycare and attachment, we tested whether child gender was a potential moderator of these associations.

Method

Participants

Families were recruited from a medium-sized Canadian city through newspaper, magazine, and radio ads. Fifty-one children aged 3 to 5 (27 girls, $M_{\text{age}} = 3.69$ years, $SD = 0.72$ years) participated in two identical lab visits, one with their father and one with their mother. Forty-one children (80%) spoke English as their first-language, and ten children (20%) spoke French as their first-language. Fathers were aged 30 to 52 ($M_{\text{age}} = 38.7$ years), 80% Caucasian, and 71% university-educated. Mothers were aged 26 to 48 ($M_{\text{age}} = 38.1$ years), 86% Caucasian, and 82% university-educated. In terms of gross family income, 8% of families earned below \$50,000, 27% of families earned between \$50,000 and \$100,000, and the remaining 55% of families earned more than \$100,000. In general, the demographics of participant families were characteristic of families in the sampling region. At the time of the study, all children were in daycare.

Procedure

As part of a larger longitudinal study of social adaptation in preschool children, mothers and fathers each accompanied their child to a lab visit (in counter-balanced order) approximately six months apart. At each lab visit, parent-child dyads were videotaped undergoing a modified Strange Situation procedure designed for preschoolers (Cassidy & Marvin, 1992), which is an observational protocol that includes periods of low and elevated stress to reveal attachment-related interaction patterns between parents and children (Bretherton, 1992). The modified Strange Situation for preschool children consists of five five-minute episodes: free-play, separation, reunion, second separation, and second reunion. Following the Strange Situation, parents were brought to another room to complete various questionnaires while children remained in the observation room with a research assistant.

Measures

Demographic questionnaire. Parents were asked to report on certain demographic characteristics of themselves, their children and their family. Among these characteristics was whether their child was currently in daycare and the number of hours per week the child was in such care. For the purposes of this study, children were divided into two groups based on time spent in daycare: low (1-20 hr/week) and high (21+ hr/week). This categorization of daycare use has been applied previously in other studies (e.g. Barglow, Vaughn, & Molitor, 1987; Belsky, Rovine, 1988).

Preschool Attachment Coding System. Parent-child attachment during the modified Strange Situation was coded using the Preschool Attachment Coding System (PACS; Cassidy & Marvin, 1992). The PACS yields four attachment classifications: secure (B), avoidant (A), ambivalent (C), and disorganized (D; including punitive, caregiving, mixed, and disorganized-non-controlling subtypes). For the purposes of this study, attachment classifications were compared based on two dichotomies that appear commonly in the literature: secure (B) vs. insecure (A, C, and D) and organized (B, A, and C) vs. disorganized (D). All video tapes were assessed by a trained coder, and 20% of the tapes were assessed by a second trained coder for interrater

reliability. The coders agreed on the attachment category in 92% of cases, for a Cohen’s κ value of .85.

Results

Tables 1 and 2 show the distributions of father-child and mother-child attachment classification by daycare group based on the secure vs. insecure and organized vs. disorganized dichotomies, respectively. Results showed that the distributions of father-child attachment classifications did not differ based on the secure vs. insecure dichotomy (Likelihood Ratio = 0.93, $p = .335$). When the organized vs. disorganized dichotomy was used, however, father-child attachment classifications were significantly different between the low and high daycare groups (Likelihood Ratio = 6.86, $p = .049$). Adjusted residuals showed that children in the high daycare group were significantly more likely to be classified as disorganized with fathers ($z = 2.0$). Time in daycare was not associated with mother-child attachment classifications for both the secure vs. insecure (Likelihood ratio = 0.26, $p = .613$) and organized vs. disorganized dichotomies (Likelihood ratio = 1.21, $p = .271$).

Although time in daycare was not associated with attachment except in the case of attachment disorganization with fathers, we ran three-way loglinear analyses to determine whether child gender could have been a moderator of the association between time in daycare and attachment. All highest-order interaction terms were not statistically significant (see Table 3). Thus, in our study, the associations of time in daycare and attachment security to fathers, attachment security to mothers, attachment disorganization to fathers, and attachment disorganization to mothers did not differ for sons vs. daughters.

Table 1. Attachment secure vs. insecure classification and daycare group: Observed frequencies and adjusted residual scores.

Father-Child Attachment	Daycare Group		Total
	Low	High	
Secure (B)	11 ($z = 0.9$)	24 ($z = -0.9$)	35
Insecure (A, C, & D)	3 ($z = -0.9$)	13 ($z = 0.9$)	16
Total	14	37	51

Mother-Child Attachment	Daycare Group		Total
	Low	High	
Secure (B)	8 ($z = -0.5$)	24 ($z = 0.5$)	32
Insecure (A, C, & D)	6 ($z = 0.5$)	13 ($z = -0.5$)	19
Total	14	37	51

Table 2. Attachment organized vs. disorganized classification and daycare group: Observed frequencies and adjusted residual scores.

Father-Child Attachment	Daycare Group		Total
	Low	High	
Organized (B, A, & C)	14 ($z = 2.0^*$)	28 ($z = -2.0^*$)	42
Disorganized (D)	0 ($z = -2.0^*$)	9 ($z = 2.0^*$)	9
Total	14	37	51

Mother-Child Attachment	Daycare Group		Total
	Low	High	
Organized (B, A, & C)	13 ($z = 1.0$)	30 ($z = -1.0$)	43
Disorganized (D)	1 ($z = -1.0$)	7 ($z = 1.0$)	8
Total	14	37	51

* $p < .05$

Table 3. Child gender as potential moderator of association between time in daycare and attachment: Highest-order interaction terms of three-way loglinear analyses.

Attachment type	χ^2 ($df = 1$)	p
Secure-insecure with father	0.759	.384
Secure-insecure with mother	0.265	.607
Organized-disorganized with father	0	.991
Organized-disorganized with mother	1.521	.218

Discussion

The present study sought to determine whether spending high amounts of time in daycare is associated with preschool attachment insecurity (vs. security) to both fathers and mothers. Furthermore, we sought to explore whether spending high amounts of time in daycare was associated with disorganized (vs. organized) preschool attachment, specifically, to fathers and mothers. We found that spending high amounts of time in daycare was neither related to father nor mother attachment insecurity. Extensive time in daycare was also unrelated to attachment disorganization to mothers, however we did find that children in daycare for greater than 20 hours per week were more likely to have a disorganized attachment to their fathers. Child gender did not moderate the associations between time in daycare and attachment insecurity or attachment disorganization to both fathers and mothers.

The finding that time spent in daycare was not associated with attachment security for both mothers and fathers is consistent with past research that reports no main effect of daycare quantity on attachment security (Belsky, 2006). That time spent in daycare was associated with disorganized attachment with fathers, but not with mothers, however, may suggest that the father-child relationship is more fragile and therefore more easily affected by prolonged separation. As McBride, Schoppe, and Rane (2002) suggest, mothers' level of involvement with children is more heavily dictated by societal norms and culture. In contrast, fathers' roles are more open to individual discretion. Thus, while the mother-child relationship may be more rigidly defined, they are perhaps simultaneously more robustly strengthened against minor factors such as routine separation. The father-child relationship, on the other hand, with fewer societal norms to guide it, may develop with greater variability and may be more open to the influence of external circumstances such as separation and exposure to other attachment figures (e.g. daycare workers). The association between time in daycare and attachment disorganization (and not insecurity) with fathers may be attributable to the fact that establishing an organized attachment, whether secure or insecure, requires a substantial history of interaction between members of a dyad. It is possible that this was less likely to be the case among our sample of dyads in which the child spent large amounts of time in daycare. It is important to note, however, that this explanation does not implicate the potentially detrimental effects of daycare, per se, but

rather the potentially detrimental effects of fathers and children spending large amounts of time apart. This latter factor may be due to any number of separate but unrelated contextual factors such as fathers' obligations to work long hours away from home and not due to the child spending large amounts of time in daycare, specifically.

One limitation of the present study was that it did not account for quality of daycare. Although some have proposed that quality of daycare is an important factor when considering the effects of daycare (Love et al., 2003), Belsky (2006) notes that quality of daycare does not entirely account for the effects of prolonged time in daycare. In other words, quantity of daycare can operate as a risk factor, even when quality of daycare is controlled for. Although we were not able to control for quality of daycare in the present study, this issue may have been less of a concern because the minimum standards for daycares tend to be relatively high in Canada. Thus, variability in daycare quality in the present study was assumed to be low. Nonetheless, it is important to note that the present study did not control for quality of daycare and so results should be interpreted with caution.

Another limitation in the present study was that the specific insecure attachment subtypes and/or the specific disorganized attachment subtypes were not differentiated. For instance, although we determined that time in daycare did not distinguish securely attached from insecurely attached children, it is still possible that daycare may be related to a certain insecure category and not other, as has been demonstrated in the past. For instance, it has been suggested that time in daycare may be associated specifically with attachment avoidance (Vaughn et al., 1980) or attachment ambivalence (Chase-Lansdale & Owen, 1980), in addition to attachment insecurity in general. The present study, however, was unable to make these specific comparisons due to small sample size.

Nonetheless, that time in daycare was associated with attachment disorganization to fathers was a noteworthy finding in the present study. Future studies should further explore why time spent in daycare may be associated with disorganized attachment to fathers, specifically. While we have offered possible explanations for this finding, more empirical research is needed. Moreover, as it is important to examine the effects of daycare "in context" (NICHD Early Child Care Research Network, 1997), future research should also examine what characteristics of fathers, mothers, and families may contribute to this association. For example, what characteristics of fathers' and mothers' parenting beliefs and what aspects of their co-parenting relationship might moderate or mediate the relationship between daycare and parent-child attachment in the preschool years? Given that more children are spending greater amounts of time in out-of-home care such as daycare, these questions surely warrant further investigation.

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