

**DAYCARE AND PRESCHOOL: QUALITY OF INFANT-CAREGIVER
ATTACHMENT AFFECTS SOCIABILITY IN PRESCHOOL**

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Daycare and preschool: Quality of infant-caregiver attachment affects social competence in preschool.

Introduction

The great debate about quality of daycare has been mainly restricted to quality of infant-mother attachment. Several meta-analyses showed that infants of mothers working more than 20 hours out of home, might be at risk for developing an anxious-avoidant attachment relationship to their mother (Belsky & Rovine, 1988; Clarke-Stewart, 1989). Recently, we performed a secondary analysis on data of almost 300 Dutch infant-mother dyads, part of whom participated parttime or fulltime in daycare (Van Dam & Van IJzendoorn, 1991). We found that in our high-parttime group (this is the group of infants spending 20-30-hours per week in daycare from their ninth month) the anxious-avoidant attachment relationships were overrepresented - in this respect we confirmed the Belsky and Clarke-Stewart findings. But we also extended their findings by showing that in the fulltime group of infants spending at least 30 hours per week in daycare, the distribution of attachment relationships did not differ from the distribution of infant-mother dyads who did not participate at all in daycare, or for less than 20 hours.

Table 1: Maternal and quality of infant-mother attachment in the Netherlands (N)=160)

	Avoidant	Secure	Resistant	
Maternal				
employment	%	%	%	Total
Not Employed	18	75	7	100%
Low Parttime	13	80	7	100%
High Parttime	41	52	7	100%
Fulltime	18	71	12	100%

Note: adapted from Van Dam & Van IJzendoorn (1991)

$$\chi^2(4)=9.8; p=.04$$

We think this curious finding may indicate that in studying the consequences of daycare - especially in case of almost fulltime enrollment - the broader network of attachment relationships has to be taken into account. Infants participating in daycare on a regular and intensive basis are hypothesized to develop attachment relationships to the professional caregiver, and this bond may even be a protective or preventive buffer against disturbances in the infant-mother relationship. Furthermore, the quality of the infant-caregiver attachment relationship may influence children's socio-emotional development in addition to the influence of the infant-parent relationship. The infant-caregiver attachment may interact with characteristics of the infant-parent bond,

or it may have an independent effect on child development. One can hardly imagine, though, that 30 to 40 hours per week of interaction would not have consequences for the children's internal working model of attachment and their socio-emotional development in general. In discussing short- and long-term consequences of daycare, the quality of infant-caregiver attachment, therefore, earns a much more prominent place, not only as a potentially protective or risk factor on the short-run but also as a codeterminant of socio-emotional development on the long-run.

The importance of the professional caregiver in shaping the socioemotional development of infants participating fulltime in daycare has convincingly been documented in Sagi's studies on Israeli kibbutzim. In the kibbutz we have an excellent example of potentially high-quality care on a regular and fulltime basis, with ample opportunities for infants to get attached to their caregiver, the metapelet. Sagi and his colleagues showed that in the kibbutz the long-term effects of attachment relationships on socioemotional development in kindergarten age were most visible for the infant-metapelet attachment. Quality of infant-parent attachment appeared to be less predictive of ego-resilience and -control in kindergarten age compared to the quality of infant-caregiver attachment (Oppenheim, Sagi, & Lamb, 1988). The kibbutz system, however, also seems to be a good example of the bad consequences of fulltime daycare. Sagi and his colleagues indeed found a remarkable overrepresentation of anxious-resistant relationships in the children's attachment network (Sagi et

al., 1985). Against this background it would be somewhat farfetched to consider infant-caregiver attachments as a protective factor or positive codeterminant of development.

A recent study comparing kibbutzim with a communal sleeping arrangement to kibbutzim with a family sleeping arrangement showed that specifically the communal sleeping arrangement is stimulating the development of anxious attachment, whereas the family sleeping arrangement - which is most comparable to our combination of home- and daycare - did not lead to an overrepresentation of anxious infant-mother attachments.

Table 2: Attachment classification distributions in kibbutzim with a communal sleeping arrangement and with a family sleeping arrangement (N=48)

Type of kibbutz	Infant-Mother Attachment				
	Avoidant	Secure	Resistant	Dis organized	Total
Communal sleeping	0%	26	30	44	100%
Family sleeping	0%	60	8	32	100%

Note: Adapted from Sagi, Aviezer, Mayseless, Donnell, Joels, & Van IJzendoorn, 1991

We may suppose that the discontinuity of care in the communal sleeping arrangement - with different watchwomen every week

looking after the infants' needs at night - hinders a balanced development of their attachment network (for more details, see Sagi, Aviezer, Mayseless, Donnell, Joels, & Van IJzendoorn, 1991).

In sum, the daycare issue is a very complicated one: some conditions may produce negative consequences as has been so clearly shown by Belksy - but other conditions may favor a positive outcome. It is highly plausible, that the infant-caregiver attachment relationship is an important and much neglected factor in determining quality and consequences of daycare. Infants participating in daycare on a regular basis may develop attachment relationships to their professional caregivers. These attachments may influence the development of infant-parent attachments, and they also may constitute an important codeterminant of socioemotional development.

In this paper I would like to present a few data addressing two related issues:

1. Does infant-caregiver attachment relationships exist in high-quality Dutch daycare centers, and if so what factors determine the differences in quality of attachment?
2. Is the quality of infant-caregiver attachment related to the quality of infant-parent attachment, and do different qualities of infant-caregiver attachment have different consequences for social development in preschool?

Method

At 12-18 months, 75 infants along with their mothers, fathers, and professional caregivers were observed in the Strange Situation at three different occasions, three months apart. All infants had gone into daycare prior to their seventh month, and they all knew their assigned caregiver for at least 3 months before their first assessment in the Strange Situation. Infants spent on average 25 hours per week in daycare.

At 40 months, 57 children participated in a follow-up study. Their preschool teachers completed the Preschool Behavior Inventory (PSBI) measuring children's social behavior in terms of independence, aggression, social-verbal competence, and timidity. The PSBI appeared to be a reliable instrument to measure social behavior - intercoder- and test-retest reliabilities as well as internal consistency of the scales were quite satisfactory (see poster Marian Kranenburg).

Besides the PSBI, experimenters completed a Readiness-to-interact scale during the children's 40-month-visit to the laboratory. They rated the degree to which the children were ready and willing to interact with the unknown experimenter during the first few minutes of their initial encounters. During the visits to the laboratory, the children and their parents were observed in several different situations and task-settings, about which we will report elsewhere (xxxx).

Results

1. Infant-caregiver attachment.

The first issue to address is whether infant-caregiver attachment relationships exists, what their distribution is, and what factors do influence differences in quality of attachment. It was our experience that, infant-caregiver attachments could be easily classified on the basis of Strange Situation interactions. Although slightly more infant-caregiver relationships had to be considered unclassifiable - at least with the traditional A, B, C-system - (5 out of 75, compared to 1 out of 75 infant-mother relationships), most Strange Situation could be coded easily and reliably. The distribution of infant-caregiver attachments was as follows:

Table 3: Distributions of infant-caregiver and infant-mother attachment classifications (N=75)

	Infant- caregiver attachment	Infant- mother attachment	Infant- father attachment
A. anxious-avoidant	28 %	21 %	31 %
B. secure	57 %	68 %	64 %
C. anxious-resistant	8 %	9 %	4 %
unclassifiable	7 %	1 %	1 %
Total	100 % (75)	100 % (75)	100% (75)

Note: adapted from Goossens & Van IJzendoorn, 1990.

The distribution of infant-caregiver attachments did not differ significantly from the distribution of infant-parent attachments, nor from the global distribution of about 20% A, 65% B, and 15% C classifications (Van IJzendoorn & Kroonenberg, 1988).

Although coding of infant-caregiver Strange Situations could be done reliably, this does not demonstrate the validity of the attachment assessment. The question is whether we are measuring attachment in case of infant-caregiver interactions during the Strange Situation. Of course, definite proof would result from daycare observations parallel to Ainsworth's home observations in her famous Baltimore study. We are nevertheless able to provide some evidence for the validity of infant-caregiver Strange Situations. From a discriminant analysis of potentially relevant variables, we derived that infants who were securely attached to their professional caregiver spent more hours per week in daycare, and their caregivers were more sensitive to the infants' signals during free play as compared to caregivers with whom the infants developed an insecure attachment relationship (Goossens & Van IJzendoorn, 1990).

2. Infant-caregiver attachment and social competence.

The second issue I would like to address concerns the relation between infant-caregiver and infant-parent attachment, and the predictive validity of the infant-caregiver attachment: are different types of infant-caregiver attachments related to different social competences in

preschool age?

As to the first question, the answer is simply 'no': The classifications of attachments of infant to caregiver and to parents were not related. It might be interesting to note that nineteen percent of the infants had not developed a secure relationship with either mother or father. Half of these infants had developed a secure relationships to their professional caregiver (Goossens & Van IJzendoorn, 1990). In this case, the infant-caregiver attachment may serve as a protective buffer against the negative consequences of an insecure attachment network at home.

To answer the second question about the predictive validity of infant-caregiver attachment, a discriminant function analysis was performed using the Preschool Behavior Inventory with scales for independence, timidity, aggressiveness, and social/verbal competence, and the Readiness-to-interact scale as correlates/'predictors' of membership of three attachment groups: avoidantly, securely, or resistantly attached to the professional caregiver. Because sex of child has been shown to make a difference in terms of social competence in preschool (Hayes & Zaslow, 19..), we controlled for differences in sex of child. Furthermore, to show whether infant-caregiver attachment is uniquely related to the social competence variables, we also controlled for quality of attachment network in the family. Sex of child and quality of attachment network were introduced first into the hierarchical discriminant function, and the social competence variables in a second step.

Table 4: Results of discriminant function analysis of social competence variables

Social Competence	Avoidant	Secure	Resistant	Correlations of		
	N=14	N=33	N=9	predictors with		Univariate
	M	M	M	discriminant functions		F(2,53)
				1	2	
Independence*	10.8	9.5	9.8	.60	-	2.7
Shyness*	1.7	1.4	1.3	.45	.43	2.2
Readiness*	43.6	50.9	47.8	-.40	-	1.2
Social-verbal	13.6	13.0	12.0	-	-	1.0
Parental att*	2.3	2.3	1.9	-	.54	1.2
Aggressiveness*	5.3	4.6	5.9	.32	-.49	1.7
Timidity	5.5	6.0	6.3	-	-	.4

variables selected for discriminant function

(10)=19.4; $p=.035$

Two discriminant functions were calculated, with a combined $\chi^2(10)=10.48$, $p=.035$. Only the first function appeared to be significantly discriminating between the avoidant and the secure and - to a lesser extent - resistant children. Avoidant children are more aggressive and more independent in preschool, and less ready to interact with a stranger than children who have been securely attached to their professional caregivers in their second year of life. Resistant children tended to be somewhat more aggressive than secure or avoidant children.

We also tried to develop parallel discriminant functions for infant-mother and infant-father attachment classifications: no significant functions could be constructed, that is, quality of infant-mother nor infant-father attachment was related to social competence in preschool age. This result is comparable to the finding of Sagi and his colleagues: they also found that in the kibbutz setting, infant-metapelet attachment was much more predictive of children's socio-emotional development in preschool age than infant-parent attachment (Oppenheim et al., 1988). In both cases, daycare covers a large part of children's waking hours, and in both cases, there is ample opportunity to get attached to a professional caregiver because of the duration and stability of the arrangement.

Conclusions

Finally, I would like to derive the following conclusions which, of course, have to be considered as proposals for further discussion and research.

First, I would like to emphasize that we found some evidence for the existence of infant-caregiver attachment relationships of the same nature and quality as infant-mother attachment. Not only do infant-caregiver interactions in the Strange Situation look the same, but quality of infant-caregiver attachments seem to be determined by the same factor - especially sensitiveness. Furthermore, the security of infant-caregiver attachments does make a difference in terms of social development in preschool age: infant-caregiver

attachment classifications do have predictive validity because secure attachment is related to more optimal social development as compared to insecure - especially avoidant attachment. We need of course more validity studies showing relations between quality of infant-caregiver interactions in the natural setting and quality of their attachment, as well as studies focussing at the issue of predictive validity, but I consider our results as very promising indeed.

Second, our results are restricted to high-quality daycare, selected on the basis of a 1:4 caregiver-to-infant ratio, and stable and intensive participation. If conditions are different, for example a lower amount of time spent in daycare, the outcome of a comparable study might be very different. Attachment relationships need time to develop. If professional caregivers get the time and opportunity to build up a relationship they might become very influential in shaping the children's social competence. In some respects, the quality of their attachment relationship to the child may be even more influential than the quality of infant-parent attachment.

Lastly, although our findings should be replicated and our conclusions have to be considered speculative, I would like to point out that the great debate about daycare should at least take into account the possibility of infant-caregiver attachments influencing children's development. Talking about quality of daycare might mean discussing ways to optimize the conditions for secure infant-caregiver attachments to develop.