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ABSTRACT

This study investigated the effect of full-time nonparental care during infancy on children's acquisition of developmentally inappropriate patterns of interaction with peers and teachers in preschool classrooms. Subjects, 105 children with a mean age of 53 months, were divided into 3 groups of children who had: (1) full-time nonparental care beginning prior to 9 months of age; (2) part-time nonparental care prior to 12 months and full-time nonparental care thereafter; and (3) no full-time nonparental care during the first 3 years of life. Preschool head teachers, blind to children's infancy care experiences, rated children on the Preschool Behavior Questionnaire (PBQ) and the Preschool Behavior Rating (PBR) instrument. Preschoolers were videotaped during indoor free play in their child care centers, and their social and emotional behaviors were analyzed. Mothers completed the Waters' Attachment Q-Sort ratings of their children's current attachment and dependency. Results indicated that preschoolers who had been in full-time nonparental care from prior to 9 months were rated on PBR items as more competent, and were observed as being more hostile and aggressive with peers and more noncompliant with teachers, than children who had never had full-time nonparental care. In these middle-class, mostly two-parent families, the effects of fulltime nonparental care, even if begun in the first year of life, show very small effects on child aggression once parental relationships and teacher competency are partialled out. (MM)

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Preschool aggression and cognition: Effects of
Infant Care¹

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Running Head: Effects of infant care

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ABSTRACT

Preschool teachers (blind to infancy care experiences) rated 105 middle-class children (mean age 53 months) from stable families, on the 30-item Preschool Behavior Questionnaire (PBQ) and the Preschool Behavior Rating (PBR) instrument. Socia-
emotional behaviors of the preschoolers during indoor free-play sessions were videotaped and analyzed. Mothers rated their children for current attachment and dependency classifications. Preschoolers who had been in fulltime nonparental care from early infancy onward were rated on PBR items as more competent intellectually. But they were also rated on the PBQ and observed as more hostile-aggressive with peers and more noncompliant with teachers than children who had never had fulltime nonparental care as infants or toddlers. High teacher education and stability was associated with lower child aggression ratings,

PRESCHOOL AGGRESSION AND COGNITION: EFFECTS OF INFANT CARE

Increasingly, dual career parents and single parents are choosing nonparental care for infants and toddlers . Researches at 12 at 18 months have demonstrated a slight but significantly higher proportion of insecurely attached babies (in response to increasingly stressful separations from a parent observed in the Ainsworth Strange Situation) among those infants who have received nonparental care fulltime during the first year of life (Belsky, 1990). Reported sequelae of insecure infant attachment, particularly with mother, include increased aggression and difficulty in peer relations, noncooperativeness with parent, and less adequate coping skills even in hypothetically posed stressful situations, such as figuring out how a child would act if parents were going away on a two-week trip (Main, Kaplan & Cassidy, 1985).

There is urgent need to investigate the question of continuity of effects. Does early infancy fulltime nonparental care produce more developmentally inappropriate socioemotional patterns of interacting with peers and teachers in preschool classrooms? Research results are conflicting, and have sometimes been reported for boys but not for girls (Vandell,1989). In the present study of preschoolers with differing time of entry into fulltime care in infancy, three sources of data were utilized: observational ratings, parent ratings, and teacher ratings. All are important in order to tease out whether there are possible

negative consequences of timing of initiation of fulltime infancy care, such as increased aggression and noncompliance, and possible **positive** effects of very early nonparental enrichment experiences, such as increased cognitive competence.

Procedures

Preschool head teachers rated 105 middle-class children (mean age 53 months) on the 30-item Preschool Behavior Questionnaire (PBQ) and on the Preschool Behavior Rating instrument (PBR). The mean Hollingshead four factor socioeconomic index for the families was $M = 54.6$ ($SD = 8.9$). This rating level includes managers, minor professionals, and smaller business owners. The majority of the parents had completed college education. A middle-class sample was deliberately chosen so that any socioemotional or cognitive sequelae of concern as a function of early care patterns should be revealed even in these stable, mostly two-parent families.

The 53 boys and 52 girls (mean age 53 months) were in three study groups: Group 1 children had full-time non-parental care from early infancy onward (prior to 9 months). Group 2 children had part-time non-parental care prior to 9-12 months and full-time non-parental care thereafter. Group 3 children never had full-time non-parental care during the first three years of life. Teachers had known the children for an average of 12 months and were blind to study purposes and to children's prior care history.

In this study, mothers also completed the Waters'

Attachment Q-Sort ratings of children's current attachment and dependency (Waters & Deane, 1985). The observer (KP) videotaped the children during indoor free play in their child care centers. All videotapes were coded for level of play (using a modified version of the Parten categories) and for positive and agonistic social interactions of the target child with peers and with teachers. Coding reliability above $r=.90$ was attained for the socioemotional categories and play levels with a graduate student in Child Development who was blind to the purposes of the research. To test for possible effects of child's sex and care history on teacher ratings, a series of 2 x 3 ANOVAs were carried out on the PBQ and PBR factors and on each individual PBQ item. Appropriate post-hoc Scheffe tests were applied, and, finally, a multivariate stepwise regression was also carried out.

Results and Discussion

Teacher Ratings

ANOVAs revealed that teachers rated the children from the three groups as significantly different on six of the nine specifically aggressive or antisocial items of the PBQ (destructive, fights, kicks/hits, disobedient, blames others, lies) plus "soils self". The means for Group 1 children were higher than those for Group 3 on each of these items. By Scheffe post-hoc tests, Group 1 children were rated as significantly higher than Group 3 on "unhappy" and Group 2 children were rated as significantly higher than Group 1 on "blames others".

Comparing the combined Groups 1 and 2 (Group 1 \bar{M} = 10.0; Group 2 \bar{M} = 9.8) versus the total PBQ score for Group 3 (\bar{M} = 6.8), significant differences were found ($F[1,99] = 6.17, p < .05$). Preschoolers with full-time nonparental care during the infant/toddler period were rated by their head teachers as having more social-emotional problems than children with no full-time nonparental care as infants and toddlers.

On the PBQ factor analysis category hostile-aggressiveness, Group 1 children were rated highest (\bar{M} = 3.9), Group 2 next (\bar{M} = 3.5), and Group 3 lowest (\bar{M} = 2.0). These group differences were significant ($F = 3.81, p < .05$). No between-group differences were found for the other two factors - anxious-fearfulness or hyperactive-distractibility.

On the nine behavioral traits of the PBR, a series of ANOVAS showed significant between-group differences for two traits: successful problem solving ($F=6.20, p < .01$) and ability to abstract ($F=4.91, p < .01$). Scheffe post hoc tests revealed that Group 1 children were significantly higher than Group 3.

Factor analysis of the PBR has yielded three factors. On intellectual competency, Group 1 was significantly higher than group 3 (\bar{M} = 11.5 vs. \bar{M} = 9.7). The finding of significantly greater teacher-rated problem-solving and abstraction ability for the early entry children is a positive sign that developmentally enriching infancy fulltime nonparental care experiences can have an extended impact on intellectual competence into the preschool years.

No PBR group differences in teacher assessment of the factors social assertiveness or social compatibility were found as a function of time of entry into fulltime nonparental care. Thus, although some researchers assert that increased aggression found among some preschoolers who have experienced fulltime nonparental care from early infancy may be regarded as positive assertiveness, the present findings do not support such an interpretation. Aggression but not assertiveness was found as a correlate of early entry into fulltime nonparental care.

Free Play Observations

The observational data did not reveal any differences in **positive** social interactions of target children with peers as a function of early infancy care patterns. That is, no significant multivariate effects of group were found on the four measures of positive peer interaction: physical contact, affective attention, verbal interactions, and prosocial behaviors. Early infancy fulltime nonparental care does not seem to have negative impact on preschoolers' positive play interactions with peers.

There were no significant univariate group differences on physical contact, affective attention, and verbal interaction with teacher. But when Groups 1 and 2, who had begun fulltime nonparental care in the first or second year of life, were combined, they were observed to engage in significantly more verbal interactions with teachers than children from Group 3, who had no fulltime nonparental care until they were three years old. Yet, preschoolers' in-class comfort-seeking, crying/whining, or

help-seeking from teachers did not differ as a function of time of entry into fulltime childcare. Early infancy fulltime care for these children may have given a boost to their interactive conversational skills with teaching adults.

Noncompliance and noncooperation with caregivers are inappropriate social behaviors that have been predicted as possible risk factors associated with very early fulltime nonparental care. Thus the observation data on children's compliance with teachers are particularly important. Preschoolers who had begun fulltime nonparental care prior to nine months were significantly more **noncompliant** with teachers than children in Groups 2 and 3 who began such care later ($F [1,99] = 3.96, p < .05$). Noncompliance with teacher was exceedingly rare among children who had not begun fulltime childcare prior to 36 months - only 3 instances out of 10,200 observation units coded. Whether parents whose infants are placed in fulltime settings in the first year of life are more permissive in their requirements for compliance with adults or whether increased peer-peer rather than adult-child contacts in the context of infant group settings are responsible for later decreased compliance with adults are possible factors which require further research. However, teachers in infant/toddler settings may need to make more specific, thoughtfully planned efforts to encourage and support young children's cooperative interactions with caregivers.

A significant multivariate group effect was found for measures of observed aggressive behaviors (instrumental,

physical, verbal, and rejection/exclusion of peers) with Wilks $\lambda = .82$, $F(8,192) = 2.42, p < .05$. Children from Groups 1 and 2 were observed aggressing significantly more against peers than preschoolers who had not begun fulltime nonparental care during the first three years of life. Groups 1 and 2 who had begun fulltime care within the first two years of life, showed significantly more instrumental aggression ($M = 1.3$ and 1.0 respectively) than Group 3 children ($M = 0.6$), $F(1,99) = 4.03, p < .05$. In addition, Groups 1 ($M = 0.5$) and 2 ($M = 0.8$) showed significantly more rejection/exclusion of peers than did Group 3 ($M = 0.2$; $F[1, .99] = 4.52, p < .05$).

In contrast with the ANOVA analyses, hierarchical stepwise regressions revealed that effects of infancy care patterns on teacher-rated and observed child aggression were minimal, accounting for 1% and 2% of the variance. Family variables, child sex, teacher stability (number of years working at that center) and teacher education accounted for more of the variance in predicting children's aggression ratings. Teacher stability predicted lower aggression ratings as did higher teacher education levels. Very experienced teachers had preschoolers who were both teacher-rated and observed as significantly less aggressive.

Sex of child was a significant factor, with boys accounting for significantly higher aggression ratings than girls. However, there was no interactive effect of group and sex of child. Timing of entry into fulltime nonparental care in infancy did not have

differential effects for girls as compared with boys (Honig & Park, 1993).

There were subtle differences in the determinants of teacher-rated versus observed aggression. Children's contemporaneous attachment security with mother did not predict child aggression as rated by teachers, but did account for 4% of observed aggression. Socioeconomic status was rather high for these children, and SES and parental education explained a modest amount of variance of child aggression measures (11% of teacher-rated aggression and 5% of observed aggression).

Child care quality proved significant in relation to children's aggression scores. Eight percent (teacher-rated) and 7% (observed) of the variance for children's aggressive behaviors were explained by two measures of center quality: higher teacher education and greater teacher employment stability.

Maternal Ratings

No group differences were found for current attachment status or for child dependency as rated by the mothers using the Waters Q Sort technique.

Conclusions

In these middle-class, mostly two-parent families, the effects of fulltime nonparental care, even if begun in the first year of life, show very small effects on child aggression once parental relationships and teacher competency are partialled out.

Thus, very slightly, aggression (though not assertiveness) as well as cognitive competence, characterized middle-class preschoolers who had experienced fulltime nonparental care in the infant/toddler period.

Whatebook et al. (1989) reported that staff turnover is exceedingly high in many centers (well above 40%) and that teacher level of formal education predicts significantly to more positive infant/toddler outcomes. Data from this study then do not relieve us of concern for infants and toddlers in fulltime nonparental care in poor quality centers or stressed family situations. The divorce rate in the United States is almost one in two families and stable two-parent family life situations may not be available as "buffers" against the development of aggression for many young infants entering early into fulltime care. Children who experience poor quality child care with high staff turnover from early infancy in addition to family stress and possible disorganization may well be even more vulnerable than the children in the present sample to risks of increased aggression and noncompliance as preschoolers. Preschool teachers will need to promote more vigorously positive interpersonal behaviors. Early introduction of prosocial curricula (Honig & Wittmer, 1992) is suggested in order to decrease the incidence of interpersonal aggressive behaviors.

Changes in logistic arrangements and child assignments in classrooms may also prove effective to buffer infants and toddlers who might be prone to increased aggressive interactions.

Stability of childcare personnel, shown in this study to influence frequency of aggression, can be enhanced by allowing babies to remain with the ~~same~~ caregivers throughout the first years of childcare, rather than moving infants from group to group on the basis of age.

Closer parent-staff communication and specific work to develop partnerships with parents can support parental awareness of the importance of intimacy and attunement. Many parents need skill-building to increase genuine, focused turn-taking experiences and tender bodily closeness in their in-home interactions with infants and toddlers (Honig, 1992). Good will and planning can help to mitigate risk factors and ensure more positive developmental outcomes for children while maintaining variety in parental childrearing choices.

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