DOCUMENT RESUME

ED 201 412 PS 012 180

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TITLE A Longitudinal Focus on Fathers: Predicting Toddler Adaptation.
PUB DATE Apr 81
NOTE 18p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (Boston, MA, April 2-5, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Adjustment (to Environment); Birth Order; *Fathers; Interviews; Longitudinal Studies; *Mothers; Nuclear Family; Observation; *Parent Child Relationship; *Parent Influence; Sex Differences; *Young Children
IDENTIFIERS Bayley Mental Development Index; Bayley Psychomotor Development Index; First Born; Toddlers

ABSTRACT

The purposes of this longitudinal study were: (1) to see whether it was possible to discern direct or indirect effects of mothers' and fathers' functioning on their 2-year-olds' cognitive, social, and psychomotor adaptations, and (2) to examine separately the relationships between parent functioning and the adaptations of first and later born 2-year-olds. Fifty-two mother-father-toddler family units participated in the study. Thirty-one of the toddlers were first or only children and 21 were later born. Data from the families were collected at 6 points in time: early in the pregnancy, late in the pregnancy (32 to 36 weeks), shortly after the birth, at 2 months post partum, and near the child's first and second birthdays. During the 2-year home visit, each parent was individually interviewed, the child was given the Bayley Mental Development Index (MDI) and Psychomotor Development Index (PDI), and mother, father and child were observed in partially structured play interactions for 45 minutes. At the end of the visit parents were asked to complete and return a Development Inventory (DI) form designed to screen out disturbance in children. Among the results, it was found that mothers who were more anxious and depressed in early pregnancy had children with substantially lower scores on the DI at 2 years, and this relationship was stronger for first born children than for later born children. There is some support that father's involvement was the intervening variable between mother's early postpartum adaptation and the adaptation of the 2-year-old: fathers whose wives were not doing well with the child in the early neonatal period stepped in to fill the need and continued their greater involvement with the 2-year-old. For first born boys and girls, the more time the fathers were spending with them on weekends, the less good their adaptation. This was also true for later born girls but not for later born boys. (Author/MP)

Society for Research in Child Development

Symposium

A Longitudinal Focus on Fathers: Predicting Toddler Adaptation

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Friday, April 3, 1981
Boston, Massachusetts

The more we learn about normal child development, the more complexity we admit into our conceptualizations of factor influencing aspects of development. The interdependence of child and parents as they act and react to each other has been demonstrated beyond a reasonable doubt (e.g. Brazelton, Koslowski & Main, 1974; Clarke-Stewart, 1978; Lerner & Spanier, 1978; Stern, 1971). Further, the fact that fathers are not only important to children but also importantly affect the mother's relationship to her offspring is beginning to appear as a finding in studies, as more researchers look at mothers and fathers and their children (e.g. Clarke-Stewart, 1978; Lamb, 1976). It is also likely that the reverse is true, that mother's presence impacts father's interactions with his children (e.g. Belsky, 1979).

Evidence concerning how mothers and fathers differentially impact the development of their children is just beginning to appear, along with some preliminary conceptual formulations. Lewis and Weinraub (1976), for example, argue that the effects of fathers on children is primarily indirect, by means of their direct effect on the mothers. Clarke-Stewart (1978) uses data from cross panal analyses of longitudinal data from 14 family units to argue that mothers influence their children's adaptation from one time period to the next, while children influence their father's responses to them.

One goal of the current study was to see whether it was possible to discern direct or indirect effects of mothers and fathers functioning on their two year olds' adaptations. In particular, we were interested in specifying systems effects as seen in the relations among fathers, mothers and toddlers.

Secondly, researchers are beginning to acknowledge important differences between first and later born children, as well as between boys and girls, in

their interactions with their parents, and the extent to which they are influenced by various familial and environmental factors (Blehar, 1980; Pfouts, 1980; Rutter, 1979; Stevenson & Lems, 197[illegible] Tauber, 1979). Previous findings from the original longitudinal study found many important differences in the relationship between parents and first and later born children, and also in parents' experiences of parenting first and later born children (Grossman, Eichler, Winickoff, and associates, 1980). A second intent for this study was to examine separately the relationships between parent functioning and the adaptations of first born and later born two year olds.

METHOD

Sample

The sample for this study consisted of 52 mother-father-toddler family units remaining in a longitudinal study that began with the parents early in pregnancy. (The original sample is described in detail in Grossman, et al, 1980).

The majority of the families were intact, with fully-employed fathers and with the mothers full-time homemakers or working part-time. Their social class ranged from lower middle class to upper middle (Coleman & Neugarten, 1971). Thirty-one of the toddlers were first or only children, twenty-one were later borns. Twenty-four were girls and twenty-eight were boys. All but one of the toddlers had been healthy, full-term infants. All but three had five minute Apgar scores of 9 or 10 (Apgar, Holaday, James, Weisbrat, & Berrion, 1958). Thirty-nine had been delivered vaginally, 13 by Caesarean Section.

Procedure

Data were collected at six points in time: early in the pregnancy, late in the pregnancy (32 to 36 weeks), shortly after the birth, at two months post partum and near the child's first and second birthday. Table I lists measures given at each time period. Only measures relevant to this report are

included (starred items were developed for this project). All information except that collected around the time of the birth was obtained from home visits. The measures include variables scored from semi-structured interviews, paper and pencil scales, and both standardized and more clinical ratings from observations.[1,2]

Insert Table 1 About Here

Two Year Dependent Variables

In our view, the healthy two year old feels secure enough and competent enough to begin to differentiate actively from the primary caretaker, at the same time maintaining a strong and mutually rewarding tie with that person or persons. Healthy adaptation will be expressed in a positive mood, expressed curiosity and exploration, and a satisfying relationship with at least one adult.

All measures of toddler adaptation were obtained from a home visit within two weeks of the child's birthday. At this visit, which took between two and three hours and involved two to four members of the research team, each parent was interviewed individually, the child was given the Bayley by a trained tester, and mother, father and child were observed in partially structured play interactions for 45 minutes. As at all visits, the parents were left with some paper and pencil scales to complete and return.

Scores used to reflect child adaptation from this visit include:

1. & 2. Bayley, MDI and PDI (Bayley, 1969)

3. Observed Adaptation, a score developed for this project. This score was the average of scores on four subscales reflecting judgements of the child's mood, apparent quality of relationships, exploration, and autonomy. It was scored independently by two to four raters at the end of the entire visit.

Interscores reliability on 25 cases was .88.

4. Developmental Inventory, a paper and pencil report form developed by Ireton and Thwing (1972, 1974). Since the scale was designed to screen out disturbed children, and because none of the children in this sample reached the criteria of disturbance established by the authors of the scale, the measure used was the relative distance of each child's General Development score from the line indicating a score 30% below average for the child's age and sex.

RESULTS AND DISCUSSION

The first set of noteworthy findings is that unlike the patterns at two months and one year post partum, at two years there were relatively few significant relationships between measures of the mothers' and fathers' current functioning and toddler adaptation (Table 2). Of the 5 significant relationships (out of a possible 48), 4 predicted from parent to first born child. later born child.

Insert Table 2 About Here

Secondly, relating parent measures obtained during pregnancy to two year olds, a number of significant findings appear. One worthy of note is that mothers who were more anxious and depressed in early pregnancy had children with substantially lower scores on the Developmental Inventory at two years, and this relationship was stronger for first born children than for later born children. Also, by two years, the father's characteristics measured during his wife's pregnancy were predictive of the toddler's Bayley scores, i.e., of the child's cognitive, social and psychomotor adaptation.

These findings can be summarized very broadly by saying a number of characteristics of the mother and father measured during the pregnancy predicted

the two year old's adaptation, and always in the expected direction, such that higher levels of parental and couple functioning predicted better toddler functioning.

The most surprising set of findings first appeared in the relationships between parental variables measured at two months postpartum and measures of the two year olds. These findings are presented schematically in Table 3; the actual correlations are in Table 2.) For first born children, the greater the mother's Emotional Well-Being at two months, the less her Depression, the higher her Maternal Adaptation scored from the interview, and the more reciprocal the relationship between her and her infant, the better the toddler was doing on most measured dimensions at two years. For later borns, in stark contrast, the more Depressed the mothers at two months, the lower the level of Emotional Well-Being, and the lower her judged Maternal Adaptation from the interview, the <u>better</u> the toddler was doing on the Bayley MDI, the Observed Adaptation rating, and the Developmental Inventory. Similar findings appeared in the relationships between one year maternal scores and the toddler at two.

A look at some earlier findings suggested an explanation for these results that so violate conventional wisdom. Firstly, at both two months and one year postpartum, while first born children of more anxious and depressed women were doing substantially less well, these maternal affects had minimal effect on the adaptation of later born children at either time period (Grossman, et al, 1980). Also, the earlier findings had suggested that fathers played more of a role in the adaptation of later born children, at least at one year, while mothers were more tightly tied to, and apparently influential with their first born children. We wondered if fathers play some intervening role between depressed and anxious mothers early in the parenting process and child adaptation at two years, and went back to our

data to see.

In fact, the quality of a father's relationship with his child, as well as the amount of discretionary time (i.e., weekend time) he was spending with it, was substantially related to how his wife was doing in the postpartum period (Schematic representation in Table 3B). There is a consistent, although generally non-significant trend, that for first born children, the better the wife was doing psychologically, and the better we judged her to be doing as a mother, the better the relationship between the father and the first born child, and the worse the relationship between father and later born child. To say it in another way, father's reactions to and relationship with his first child seemed patterned after, and directly responsive to, how his wife was doing with the baby. By the time the second or later child was born, if the wife was feeling good herself and relating well to the infant, the husband was less closely tied to the child and less related, as judged from the interview.

The data reflecting the amount of discretionary weekend time the men spend with their two year olds is entirely consistent, although only three of the fifteen relevant relationships reach statistical significance. The men spent more discretionary time with their child, regardless of birth order, the less well their wife was doing at two months postpartum.

Thus, there is some support for the view that father's involvement was the intervening variable between mother's early postpartum adaptation and the adaptation and the adaptation of the toddler at two. It appears as if fathers whose wives were not doing well with the child in the early neonatal period stepped in to fill the need, and continued their greater involvement with the two year old. However, according to these data, men tended to do this with both first and later born children in the face of mother's inadequacy or distress. Possibly first born children were sufficiently tied to their

mothers' psychological state that whether or not father intervened was not crucial, or was not able to have a substantially ameliorating effect on inadequate mothering. For later born children, greater father involvement appeared to facilitate their adaptation.

Some tantalizing results appear when men's time involvement on weekends was related to toddler adaptation, with the data analyzed separately by sex and birth order. The N's are too small for statistical significance but the pattern of relationships (shown schematically in Table 3C) suggests that for first born boys or girls, the more time the fathers were spending with them on weekends, the less good their adaptation. This was also true for later born girls. However, later born boys, to a striking degree, were doing better the more time their fathers were spending with them. It appears as if it is positive for fathers to be more involved with their later born sons, even when it results from greater maternal distress and discomfort. This argument would continue that it is substantially more negative for girls to have their mothers depressed and uncomfortable about themselves as mothers than it is for boys. These findings are consistent with those reported by Pedersen, Rubenstein, and Yarrow (1979) from father-absent black families, that boys' cognitive and social development is much more affected by the availability of their fathers than are girls.

Although the sample sizes become too small for any definitive results, when divided by sex and birth order, the data are strongly suggestive of the possibility that father's active involvement, reflected in the amount of discretionary time he spends with his young child, is closely related to the family system's need for him to spend time. If the mother is able and willing to carry out the mothering in a manner consistent with the parent's perceptions of adequate mothering, then she has the primary responsibility and the father does not become greatly involved. If, because of ill physical

or psychological health, or because of relative lack of interest in the role, the mother is not available to provide adequate mothering by that couple's standards, then the father does step in to fill the vaccuum. Thus far, the argument is entirely consistent with the findings concerning men's greater involvement with infants born by Caesarean section (Grossman, Winickoff, and Eichler, 1980).

However, these data suggest that the consequences for the child of greater father involvement, and lesser mother involvement, are different depending on whether the child is the first born child in the family, or the later born, and whether the child is a girl or a boy. Apparently the tie between mother and first born is sufficiently close, regardless of her ability, or interest in mothering, that if she is not feeling good about herself as a person and as a mother, even though the father does step in, the consequences are negative for the child. Furthermore, the first born girl is most vulnerable to her mother's distress or unavailability as a mother. The later born child is less tighly tied to the exclusive relationship with the mother, and can in fact benefit from less involvement with her and consequently greater involvement with the father. Again, however, the sex of the later born child is a factor, with boys clearly benefitting from a greater involvement with their fathers, and with girls continuing to suffer from the maternal stress and discomfort despite greater father involvement.

Further research to focus on the relationship between mothers' and fathers' parenting, as well as to look at the differential effects of mothers and fathers time and involvement on young boys and girls is the next step in untangling the complicated picture beginning to emerge.

In this study, it seemed to require a negative family situation to elicit the men's maximally effective involvement. What implications this

has for men and women who would like to see mothers and fathers as equally involved and contributing partners in the task of parenting is not altogether clear. Possibly the nature of the task of early parenting, which receives so much of its impetus from the demands of the child as well as from the relationship forged in the process of meeting these demands, does not lend itself to being divided up "equally". On the other hand, all available research as well as everyday experiences, supports the value of two parents participating together to raise children, however non-symetrical and non-comparable the involvements and relationships with the child are.

The most compelling and certain conclusion from these data is that the family is indeed a tightly interwoven system, with both psychological and what might be termed epidemiological dimensions of all family members influencing characteristics of the system, and in turn effecting the impact of the family system on the individuals. Only these studies which are willing to grapple with the complexity of parents and children together, of first borns as well as later borns, and of boy children as well as girl children, will begin to illuminate more of the predictable aspects of the complexity that we call a family.

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Footnotes

1. Variables were selected for consideration either because they were of interest on apriori grounds, based on the literature or our previous findings, or because a seemingly important pattern of findings appeared in the overall data analysis. Some statistically significant correlations have not been reported, on the grounds that they make no conceptual sense and have insufficient support in the pattern of results to justify serious consideration.
2. Details about all of the measures through the one year visit, as well as about variables measured but not included in this report, are described in Grossman, et al, 1980.
3. All starred (*) variables were developed for the project and are described in detail in Grossman, et al, 1980.

Table 1

Selected List of Measures at Key Time Period

1. Early pregnancy contact

   Women's and Men's Life Adaptation (Cox, 1970)
   Women's and Men's State Anxiety (Spielberger, Gorsuch & Lushene, 1968, 1970)
   Women's Depression (Pitt, 1968)
   Couple's Socioeconomic Status (SES) and Occupations (Coleman & Neugarten, 1971)
   Women's and Men's Marital Adjustment (Locke & Wallace, 1959; Kimmel & Vanderveer, 197

2. 32-36 Weeks of Pregnancy

3. Childbirth and Neonatal Period

   Maternal Adaptation to Labor and Delivery* [3]
   Caesarean section - presence or absence
   Apgar (Apgar, Holaroy, James, Weisbrot & Berrien, 1958)
   Birth Weight
   Brazelton Alertness, Motor Maturity, Irritability (Brazelton, 1973: Bakow, 1974)

4. Two Months Postpartum

   Women's and Men's Emotional Well-Being*
   Women's and Men's State Anxiety (same as before)
   Women's Depression (same as before)
   Women's and Men's Marital Adjustment (same as before)
   Women's and Men's Parental Adaptation from Observation and Interview*
   Mother and Infant Reciprocity (Price, 1975)
   Bayley Mental Developmental Index (MDI) and Psychomotor Development Index (PDI) (Bayley, 1969)

5. One Year Visit

6. Two Year Visit

   Women's and Men's Emotional Well-Being*
   Women's and Men's State Anxiety (same as before)
   Women's and Men's Marital Adjustment (same as one year visit)
   Women's and Men's Parental Adaptation from Interview*

7. Two Year Visit: Dependent Variables

   Bayley MDI and PDI (same as before)
   Observed Adaptation*
   Developmental Inventory (Ireton & Thwing, 1972, 1974)

Table 2
Selected Parent Variables Predicting Toddler Adaptation: Pearson Correlations

	Bayley MDI			Bayley PDI			Observed Adaptation			Developmental Inventory		
	Total[a]	First[b]	Later[c]	Total[a]	First[b]	Later[c]	Total[a]	First[b]	Later[c]	Total[a]	First[b]	Later[c]
Two month postpartum visit												
Women's												
Emotional well-being	-.16	.02	-.38	.19	.43*	-.14	-.20	.04	-.47*	-.21	.04	-.69*
Depression	.10	-.18	.50*	-.24	-.41*	-.03	.22	-.02	.51*	-.16	-.69*	.72**
Reciprocity	.18	.22	.09	.12	.26	-.10	.40**	.46*	.34	.19	.21	-.46
Maternal Adaptation from Interview	.12	.37	-.16	.27	.50**	.01	.07	.31	-.22	.13	.34	-.72*
Observed Maternal Adaptation	.46**	.53**	.38	.10	.33	-.22	.04	.15	-.14	.27	.33	-.04
Men's												
Marital Adjustment	.00	.03	-.13	.38**	.46*	.18	.08	.11	.00	-.04	.09	-.36
Emotional well-being	.13	.20	-.04	.15	.01	.41	-.01	.07	-.13	.34	.56*	.13
Two year visit												
Women's												
Marital Adjustment	-.03	.02	-.06	.15	.31	-.24	.00	-.02	.02	.50*	.78**	-.17
Maternal Adaptation from Interview	-.09	-.05	-.23	.11	.26	-.09	.21	.39*	.01	-.14	-.17	-.04
Men's												
Emotional well-being	.21	.22	.23	-.05	-.18	.12	.06	-.02	.16	.31	.68*	-.03
Marital Adjustment	.18	.23	.14	.32	.44*	.05	.23	-.02	.66**	.44	.20	-.19

*$p \leq .05$, 2-tailed
**$p \leq .01$, 2-tailed
[a]The N's for these correlations range from 18 to 50
[b]The N's for these correlations range from 7 to 30
[c]The N's for these correlations range from 9 to 20

Schematic Representations of Patterns of Correlations

Table 3A
Toddler Adaptation - 2 Years

	First Born	Later Born
Mothers's Adaptation, Pregnancy	+	+
Mothers' Adaptation, 2 Months Postpartum	+	-

Table 3B
Father's Paternal Involvement - 2 Years

	Paternal Adaptation		Time Involvement - Weekends	
	First Born	Later Born	First Born	Later Born
Mother's Adaptation, 2 Months Postpartum	+	-	+ -	-

Table 3C
Toddler Adaptation - 2 Years

	First Born		Later Born			
	Girls	Boys	Girls	Boys	All Girls	All Boys
Father's Time Involvement, Weekends (2 Year Old)	-	-	-	+	-	±