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Efficacy of Sibling Preparation Classes

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Abstract

Objective—To examine the effectiveness of sibling preparation classes to facilitate the adjustment of a firstborn child to the birth of a sibling.

Design—Longitudinal study with five measurement occasions: third trimester of the mother's pregnancy and 1, 4, 8, and 12 months following the sibling's birth.

Setting—Communities in southeastern Michigan.

Participants—Two hundred forty-one families, including mothers, fathers, and firstborn children.

Methods—Mothers and fathers completed questionnaires to assess changes in children's adjustment. Parents were also asked about their children's attendance at a sibling preparation class focused specifically on preparation for the newborn. Effects of attendance were tested using linear mixed models.

Results—Other than avoidance of the infant, children attending sibling preparation classes did not differ from children who did not attend.

Conclusion—Sibling preparation classes for adjustment after the birth of an infant sibling had few effects on participants.

Keywords

siblings; family relationships; sibling preparation classes

Nearly 80% of children in the United States have at least one sibling, which underscores the fact that the birth of a sibling is a salient transition for most U.S. families (U.S. Census Bureau, 2009). Individual children react differently to the infant sibling's birth: some

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children experience significant disruption, but others often respond positively (Oh, Volling, & Gonzalez, 2015; Song & Volling, 2015) or with little to no distress (Volling, 2012). Further, children's initial reactions in the weeks after the sibling's birth were predictive of the quality of the relationship between siblings nearly a year later (Dunn & Kendrick, 1982). Because there is long-term stability in children's sibling relationships over time (Aldercotte, White, & Hughes, 2016; Dunn, Slomkowski, & Beardsall, 1994) and because poor sibling relationships are associated with externalizing and internalizing behavior problems (Buist, Dekovic, & Prinzie, 2013), it is important to understand how best to prepare children and families to make the transition smoothly and establish a positive sibling relationship early in life.

Parents react in various ways to the impending transition. Some mothers may experience feelings of guilt and sadness (Walz & Rich, 1983), which can hinder their ability to deal effectively with the behavior of the first born (Young, Boyle, & Colleti, 1983). Mothers also worry about whether their children will accept their infant siblings and whether they can balance the care of two young children (Walz & Rich, 1983). Providing parents with advice and guidance on how to prepare their firstborn for the arrival of the infant may be beneficial for children and parents as they undergo the potentially stressful transition surrounding the birth of the second child.

Moreover, most parents are interested in facilitating positive sibling interaction between their children (Kramer, 2010) and many invest in media (e.g., books, DVDs) and classes to promote constructive sibling behaviors (Kramer & Ramsburg, 2002). Sibling preparation classes are one popular way to prepare a child for the birth of a sibling. These classes, originally established in the 1970s to prepare children to be present at the birth (Dodge, 1985; Parma, 1979; Simkin, 1993), are still widely used in many hospitals. However, little empirical investigation has been conducted on the effectiveness of these classes.

Family Systems Theory underscores the interdependence of parent-child and partner subsystems in the family and that children's psychological adjustment is affected directly and indirectly by these different family relationships (Belsky, 1979; Cox and Paley, 2003; Minuchin, 1985). The Developmental Ecological Systems (DES) model of the transition to siblinghood also positions the firstborn within the family and highlights the effect of intrafamilial and extrafamilial systems that affect the firstborn's adjustment after the birth of an infant sibling (Volling, 2005). The DES perspective and prior research also underscore the importance of considering multiple aspects of the child's adjustment after the birth of a sibling rather than a single indicator that may not capture the full range adjustment issues. These include behavior problems (e.g., sleep, aggression, anxiety, withdrawal; Dunn, Kendrick, & MacNamee, 1981; Stewart, 1990; Volling et al., in press), quality of the early sibling relationship (Dunn & Kendrick, 1982; Oh, Volling, & Gonzalez, 2015, Song, & Volling, 2015), and relationships with parents (Dunn & Kendrick, 1980; Teti, Sakin, Kucera, Corns, & Eiden, 1996; Touris, Kromelow, & Harding, 1995). The main goal of the current investigation was to examine whether sibling preparation class helped children adjust to the birth of siblings.

Sibling Preparation Classes

Sibling preparation classes were initially designed to prepare children for their mothers' hospitalizations and the birth of their siblings; it was expected that participation in the birth experience would have a positive effect on sibling interactions (Parma, 1979). The demand for sibling preparation classes has continued, and they are offered in many hospital and community settings. The purpose of these classes, however, seems to have shifted to include preparation for the firstborn's new role as a sibling and the changes that may occur during this transition (Storr & Robinson, 1998; Wilford & Andrews, 1985). To accomplish this goal, class activities often include tours of the maternity ward (Johnsen & Gaspard, 1985), art projects (Keller, 1991), and discussions about infant care, including diapering a doll (Spero, 1993).

Despite the popularity of these classes, only two sets of researchers to date have attempted to evaluate their efficacy by providing pre-birth and post-birth assessments of children's adjustment. Among randomly selected children, Wilford and Andrews (1985) found no significant differences between those children attending a sibling preparation class and those who did not based on mother's reports of children's behaviors prior to the birth of the second child and four weeks after the birth. In a non-randomized design, however, Fortier, Carson, Will, & Shubkagel (1991) reported that mothers whose children attended the class believed they were better able to cope with their children's behaviors and observed significantly fewer sibling rivalry behaviors at one month postpartum than mothers whose children had not attended the class. Although both studies were a pre/post-class design, the post-class assessments occurred one month after the birth so there was no indication of how long-lived the effects were or how children's behaviors might change over the long-term in the year after the birth. Thus, there is a critical need to address the effectiveness of sibling preparation classes using pre- and post-birth longitudinal research designs that assess multiple aspects of children's functioning in both the initial months shortly after the birth and over the course of the year following the birth.

Methods

Design and Setting

Our study included a longitudinal, prospective design, in which the mother was expecting her second child, and included families recruited from southeastern Michigan communities in a 50-mile radius from a large Midwestern university. The design consisted of five measurement occasions: third trimester of the mother's pregnancy and 1, 4, 8, and 12 months following the infant sibling's birth during which both mothers and fathers were asked to report on children's behavioral and emotional adjustment (e.g., aggression, withdrawal, sleep problems), children's social interactions with the infant sibling, and whether or not children attended a sibling preparation class before the birth. Parents also completed the Attachment Q-sort to assess the child's attachment relationship with mothers and fathers. The study was reviewed and approved by the institutional review board. Informed consent was obtained from all participants and families were compensated \$300 for their participation across all five times.

Participants

Participants for this study included 241 families, comprised of mothers, fathers, and firstborn children participating in a longitudinal investigation of children's adjustment and family relationship functioning following the birth of a second child. The recruited families were primarily European American (85.9% of mothers; 86.3% of fathers) with 14.1% of mothers and 13.7% of fathers representing other racial and ethnic groups. At the third trimester timepoint, the mean age of fathers was 33.2 years ($SD = 4.78$) and the mean age of mothers was 31.6 years ($SD = 4.22$). The mean age of the firstborn was 29.92 months ($SD = 10.16$); 45.6% of the firstborn children and 55% of the infant siblings were boys. Parents' length of marriage ranged from .58 – 20 years ($M = 5.77$, $SD = 2.74$). Most families earned \$60,000 – \$99,999 (37.8%), with most mothers (83.9%) and fathers (79.2%) having a Bachelor's degree or higher.

Procedure

Women pregnant with their second child were recruited from obstetric clinics, local newspaper advertisements, and flyers posted in local hospitals, child care centers, pediatricians' offices, and child-birth education classes. To participate in the study, families had to meet the following criteria: (1) the mother was pregnant with her second child; (2) the father was the biological father of the second child; (3) the mother and the father were living together; (4) the older sibling was between the ages of 1 and 5 years at the time of the infant's birth; and (5) infants were born full-term, with both the infant and the older sibling free from chronic and severe physical, mental, or developmental problems. Of the 408 families who fit study criteria, 241 (59.1%) agreed to participate. The attrition rate was 15.7% across the 12 months of the study leaving 203 families completing the study at 12 months.

At the 1-month home visit, parents were asked, "Did you attend a sibling preparation class focused specifically on your first child's preparation for the new baby?" Of the 225 parents who remained in the study at 1 month, only 47 reported enrolling their firstborn in sibling preparation classes. See Table 1 for demographic characteristics of families attending and not attending sibling preparation. There was only one significant difference across families who attended or did not on mothers' age, $t(97.83) = -2.28$, $p < .05$; mothers of children who attended the class, ($M = 32.62$, $SD = 3.13$), were significantly older than mothers of children who did not attend, ($M = 31.34$, $SD = 4.33$).

The majority of the families (93.6%) who enrolled their firstborn stated they attended the class at one of the local hospitals; the remaining families (6.4%) attended a class offered through local early childhood education groups. Based on a web search of class content for the local offerings, these one-time classes were aimed at children ages two years and above, designed to help children prepare to be a sibling and feel special about their new role, consisted of a hospital tour, story time about the birth of a new baby, a depiction of how a baby was born via the use of a doll meant to resemble a pregnant woman, and participation in baby care activities with a lifelike doll (i.e., holding, diapering, and swaddling). After completion, the children received a certificate and a big brother/sister button to wear to the hospital to meet their new sibling. Though these classes were intended for children aged 2

and older, five of the 47 (10.6%) families in our sample whose children attended a sibling preparation class were younger than age 2, indicating that parents were still enrolling younger children in the class despite the suggested age range. As such, we did not restrict our analyses to children older than 2 when we examined whether or not children's attendance at these local community- and hospital-based classes was associated with children's adjustment after the birth of a second child. We acknowledge that we have not conducted a randomized-controlled, intervention design to test the effects of sibling preparation classes, but instead, have grouped families participating in a longitudinal investigation of children's adjustment after the birth of a sibling into those families who voluntarily enrolled their children in these classes and those families who did not.

Measures

Children's behavior problems—Both mothers and fathers completed the Child Behavior Checklist to assess the firstborn's behaviors at all five timepoints (CBCL 1.5–5 years; Achenbach & Rescorla, 2000). The CBCL is one of the most widely-used measures of child adaptive and maladaptive functioning in preschool children and consists of 99 items rated on a 3-point Likert Scale (0 = *not true* to 2 = *very true*). The CBCL contains two broad-band dimensions, *externalizing* (24 items, Cronbach's alpha range across the five timepoints for both mothers and fathers = .87–.90) and *internalizing* (36 items, Cronbach's alpha = .77–.82) and seven syndrome subscales: *emotional reactivity* (9 items, Cronbach's alpha = .51–.68), *anxiety/depression* (8 items, Cronbach's alpha = .52–.67), *somatic complaints* (11 items, Cronbach's alpha = .35–.52), *withdrawal* (8 items, Cronbach's alpha = .48–.64), *attention problems* (5 items, Cronbach's alpha = .62–.70), *aggressive behavior* (19 items, Cronbach's alpha = .85–.89), and *sleep problems* (7 items, Cronbach's alpha = .69–.80). Ivanova and colleagues (2010) supplied psychometric support for the configural invariance of the factor structure of the seven CBCL syndrome scales for 19,106 children aged 1.5–5 years across 23 societies.

Sibling relationship quality—Both mothers and fathers completed the Sibling Relationships in Early Childhood (SREC; Volling & Elins, 1998) scales at 4, 8, and 12 months to assess children's interactions with the infant sibling. Using a 5-point Likert scale (1 = *never* to 5 = *always*), the SREC assesses sibling behavior in very young children; mean scores were computed for each of the three subscales: *conflict* (5 items, Cronbach's alpha range across the three timepoints for both mothers and fathers = .72–.79), *positive involvement* (7 items, Cronbach's alpha = .84–.86), and *avoidance* (3 items, Cronbach's alpha = .52–.68). The SREC scales have been used repeatedly in earlier studies of sibling relationships (Volling & Elins, 1998; Volling, McElwain, & Miller, 2002; Oh, Volling, & Gonzalez, 2015; Song & Volling, 2015; Volling et al., in press) to predict sibling relationship trajectories and how those relationships relate to other parent- and family-level processes over time.

Older sibling's attachment to parents—Older siblings' attachment security to both parents was assessed through the Attachment Q-Sort (AQS; Waters & Deane, 1985) at the third trimester timepoint and at 4 and 12 months. The AQS uses card sorts to measure the security of the mother-firstborn attachment relationship and the father-firstborn attachment

relationship. The AQS comprises 90 cards, with each card containing a statement referring to child behavior (e.g., when child returns to mother after play, s/he is sometimes fussy for no clear reason). Both parents were left with the list of the 90 behaviors contained on the cards 2 weeks earlier and were instructed to observe their children for these behaviors over the next 2 weeks. A trained research assistant sat with each parent as s/he sorted the cards into nine piles of ten cards that ranged from “least characteristic of your child” to “most characteristic of your child”. Fathers and mothers completed these pile sorts independently and sorted the behavior items on how their child behaved with them individually. The attachment security scores were calculated by correlating fathers’ and mothers’ sorts with a criterion sort representing the theoretically “most secure” child. Higher scores indicated a closer fit to the criterion “most secure” sort. Correlations were then transformed into Fisher’s z coefficients. See Tables 2 and 3 for descriptive statistics for all outcome measures.

Analysis

To address our main research question pertaining to the effects of sibling preparation classes for firstborn children’s adjustment and whether these differed across time, we fit linear mixed models using an unstructured covariance matrix. Parent (2), time (5), and class participation (2) were modeled as fixed effects. For each of the models, we treated one dependent variable (e.g., children’s aggression) as a continuous outcome, and included fixed effects of parent (categorical), time (continuous), and attendance of a sibling preparation class (categorical). The fixed effect of class participation reveals whether there are differences on the dependent variable as a function of participating or not participating in the class. The fixed effect of time reveals whether the dependent variable changed significantly across time, whereas the fixed effect of parent reveals whether the dependent variable differed for mothers’ and fathers’ reports. We included two- (e.g., class attendance x time) and three-way (e.g., class attendance x parent x time) interactions to test for moderating effects and whether children’s adjustment (i.e., dependent variable) changed differently across time for children who attended a class or not, or for mothers’ and fathers’ reports. We also included random family effects, allowing the intercept, the parent effect, and the time effect to randomly vary across families. Random effects for the intercept allowed for dissimilarities between families whereas the random effects for time and parent accounted for longitudinal and dyadic dependence within families. All analyses were conducted using the `lmer()` function in the `lme4` package of R. Given the central aim of examining the effects of sibling preparation classes, we present only the significant results for attendance.

Results

Thirteen models were run corresponding to the different child outcomes measured (9 children’s behavioral and emotional adjustment of the CBCL, 3 sibling interactions of the SREC, and the attachment Q-sort scores). Of the analyses run to test the efficacy of sibling preparation class attendance on child functioning over the first year after the infant sibling’s birth, only one of the 13 (7.6%) revealed a significant main effect. Although we present the significant result, we must exercise caution in the interpretation of this finding, given the overall number of analyses conducted. The only significant main effect for attendance was for the avoidance subscale of the SREC, Estimated Fixed Effect = -0.47 ($SE = 0.22$), $t(466)$

= -2.168; $p < .05$, which was qualified by a significant time x attendance interaction, Estimated Fixed Effect = 0.12 ($SE = 0.05$); $t(465.4) = 2.212$; $p < .05$. As Figure 1 indicates, children who took the class had lower parent-reported avoidance scores at 4 months (adjusted for time and mother/father status) than children who did not, but there was a greater increase in avoidance of the new sibling from 4 to 12 months for children who took the class than those who did not; this difference in slopes reflects the significant interaction that was detected. There were no significant effects of sibling preparation class attendance on children's behavioral and emotional adjustment for any of the subscales of the CBCL, sibling conflict or positive involvement as measured by the SREC, or firstborn's attachment security to either parent.

Discussion

The goal of our analyses was to assess the effect of participation in sibling preparation classes on children's adjustment after the birth of an infant sibling. Participants included 241 families recruited for a longitudinal study addressing changes in child and family functioning after the birth of a second child. There are certainly limitations to the conclusions we can draw based on our community-based, longitudinal study design. Future research that includes a randomized controlled trial of children participating in sibling preparation classes and those children not participating is certainly needed. Sibling preparation classes are popular and offered frequently in hospitals to prepare children for the arrival of their infant sibling, with little empirical demonstration of their effectiveness for children's adjustment. Our study was only the third to empirically address the effectiveness of these classes for children's adjustment, and similar to the two prior studies (Wilford & Andrews, 1985; Fortier et al., 1991), we found little evidence that participation in a sibling preparation class had benefits for children's adjustment, whether assessed in terms of emotional and behavioral problems, early sibling interactions, or the attachment relationships with their parents. Each of these child adjustment outcomes was chosen based on prior literature on the transition to siblinghood so we considered them as a reasonable starting point to test our research question on whether sibling preparation classes affected children's adjustment (Armentrout, 1995; Stewart, 1990; Volling, 2012; Volling et al., in press).

Only children's avoidance of the infant sibling in the first year revealed significant findings pertaining to sibling preparation class attendance. A significant class attendance x time interaction suggested that although avoidance of the new sibling was initially low at 4 months for those attending the class, sibling avoidance increased substantially over time and was comparable to levels of sibling avoidance at 12 months for children who did not attend the class. These results suggested that there may have been immediate benefits of class attendance by reducing avoidance of the infant, but these benefits were short-lived and did not appear to persist over time.

We must also acknowledge that sibling preparation classes may have benefits on other outcomes not examined here and that parents enroll their children into these classes for reasons other than concerns for their children's adjustment. For instance, future researchers may benefit by explicitly asking parents their purpose for enrolling children in these classes

and what they hoped to gain by doing so. Perhaps increasing a child's understanding of the birthing process or showing children the hospital where mothers will deliver the baby sibling are some of the goals parents have, and in that case, sibling preparation classes may well be suited for these aims. Because our results find little evidence that sibling preparation classes helped ease the adjustment period surrounding the birth of a sibling for firstborn children, alternative intervention or pre-birth education efforts may be needed for those parents interested in supporting their children's adjustment and facilitating the development of a positive sibling relationship in the months and year after the infant's birth.

Limitations

Though our sample size was larger than prior studies, there are several limitations that need to be mentioned. First, our analyses were exploratory and leveraged information obtained from parents as part of a longitudinal investigation of families undergoing the transition to a second child. The study was not designed to evaluate sibling preparation classes. By comparing families who reported their child attended a local sibling preparation class with those who did not in our longitudinal investigation, we were able to provide some insights into whether there were benefits for children's adjustment, but studies utilizing a randomized control design would be better equipped to address the research question further. These studies can build on the current findings and formulate future hypotheses based on our exploration into this important area of family life. Nearly 80% of families have at least two children (U.S. Census Bureau, 2009) so there is a high probability that the transition period surrounding the birth of a sibling and how to prepare one's oldest child for the arrival of a baby brother or sister is an area of concern for parents. Today, very few options are available to parents to prepare their children for the transition to older sibling and we would suggest that serious attention be directed to alternative approaches for sibling preparation.

Information on course content for locally available classes was obtained from a search of the Internet, but again, we are limited in our abilities to test specific aspects of the class content to determine whether certain activities were more beneficial than others in these classes and future researchers may wish to do so. We did not specifically set out to evaluate sibling preparation classes, enroll families, or randomize their participation in classes in an effort to evaluate their effectiveness. Given the prevalence of hospital-based sibling preparation classes and the paucity of research evaluating their effectiveness, future research is clearly needed in this regard. The sample was primarily European American, well-educated, and middle-class and there was evidence that significantly older mothers were likely to enroll children in these classes. Because we did not have a measure asking parents for their rationale in enrolling their children in these classes, it is unclear why older mothers might be more interested in these classes. One possible explanation may be that older mothers have had more exposure to others who also enrolled children in these classes, or as older mothers with young children, may have more anxiety over the birth of a second child and how the older one will adjust. Further, though the target age range for the sibling preparation classes was children aged 2 and older, several families in the current study still enrolled children younger than 2 years of age, which is why we included children younger than 2 in our analyses. Redoing the analyses restricting the sample to children older than 2 did not reveal any additional significant findings. Therefore, null results are not due simply to the inclusion

of these younger children who may have been unable to understand information presented in classes tailored for older children. The fact that parents with children younger than 2 were willing to enroll their children in these classes may very well speak to parents' desire for information on how to prepare their children regardless of the child's age and a need for health care workers to provide parents with options to prepare children for the birth of a sibling. Finally, given the fee structure for class attendance, it is unclear whether low-income families could enroll their children in such classes so there may be a selection bias in terms of which families actually enrolled their children in these classes. Future researchers testing the effectiveness of sibling preparation classes may want to provide these classes free as part of an intervention trial so that such selection effects are not a potential problem when interpreting results.

Conclusion

The present study examined the effectiveness of sibling preparation classes for firstborn adjustment after the birth of a sibling. Findings suggested that there may have been proximate benefits of class attendance by reducing the firstborn's avoidance of the new infant sibling in the first month after birth, but those benefits did not appear to persist over time. Our results also suggested that alternative interventions might be needed in order assist families with the transition period and support children's adjustment. Recent research examining the child and family factors that predicted children's emotional and behavioral adjustment after the birth of a second child, strongly suggested that focusing on parental discipline and the management of children's misbehaviors, as well as the coparenting relationship may be advantageous targets for pre-birth education classes or interventions (Volling et al., in press; Kolak & Volling, 2013; Song & Volling, 2015). Most firstborn children enter siblinghood before age three, suggesting it may be more developmentally advantageous to direct intervention efforts to parents rather than children. Because earlier findings from this study suggested supportive coparenting predicted less problem behavior of children across the transition (Kolak & Volling, 2013), focusing on promoting positive relations between mothers and fathers as they make the transition may benefit the entire family.

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Callouts

Callout 1: There has been limited research into the effectiveness of sibling preparation classes for children's adjustment after the birth of an infant.

Callout 2: Results provide little support for the efficacy of sibling preparation classes on children's adjustment after the birth of a sibling.

Callout 3: Pre-birth education classes that teach parents to respond effectively to children's misbehavior and promote supportive co-parenting may be particularly helpful.

Figure 1.

Sibling preparation class attendance and time interact to predict change in parents' reports of their children's avoidance of the younger sibling from 4 to 12 months.

Table 1

FTS Sample Characteristics by Sibling Class Attendance at 1-month Timepoint (N = 225)

	Attended Sibling Preparation Class <i>n</i> = 47		Did Not Attend Sibling Preparation Class <i>n</i> = 178	
	Mean	SD	Mean	SD
Firstborn's age (in months)	36.72	10.02	27.74	9.36
Mother's age (in years)	32.62	3.13	31.34	4.33
Father's age (in years)	33.79	4.17	32.98	4.91
Years of Marriage	6.33	2.77	5.62	2.76
	<i>N</i>	%	<i>N</i>	%
Firstborn's gender				
Female	33	70.2%	89	50.0%
Male	14	29.8%	89	50.0%
Mother's education				
High School degree or some college	5	10.6%	30	16.9%
Bachelor's degree	17	36.2%	69	38.8%
Professional degree	25	53.2%	79	44.4%
Father's education				
Less than high school degree	0	0%	0	0%
High school degree or some college	3	6.4%	41	23.0%
Bachelor's degree	21	44.7%	63	35.4%
Professional degree	23	48.9%	74	41.6%
Mother's race/ethnicity				
European American	42	89.4%	151	84.8%
African American	1	2.1%	12	6.7%
Asian/Asian American	2	4.3%	4	2.2%
Hispanic	2	4.3%	7	3.9%
Other	0	0%	4	2.2%
Father's race/ethnicity				
European American	43	91.5%	153	86.0%
African American	1	2.1%	11	6.2%
Asian/Asian American	1	2.1%	6	3.4%
Hispanic	2	4.3%	4	2.2%
Other	0	0%	4	2.2%
Family income				
< 20,000	0	0%	2	1.1%
20,000 – 59,999	10	21.3%	52	29.2%
60,000 – 99,999	18	38.3%	68	38.2%
>100,000	19	40.4%	56	31.5%

Table 2
Descriptive Statistics of Mothers' Report Measures by Class Attendance and Timepoint

Attended Sibling Preparation Class											
Third Trimester			1-month			4-months			8- months		
<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	
Child Behavior Checklist											
INT	7.74	5.07	7.91	5.15	7.14	4.96	7.11	4.60	7.88	5.53	
EXT	11.74	7.73	13.72	7.93	10.70	7.90	11.75	6.37	10.23	7.48	
ER	2.50	2.17	2.63	2.34	2.56	2.23	2.34	1.80	2.79	2.42	
AD	1.74	1.88	1.76	1.72	1.60	1.45	1.89	1.59	1.91	1.74	
SC	2.09	1.82	1.93	1.79	1.58	1.59	1.20	1.37	1.60	1.56	
WD	1.41	1.26	1.59	1.57	1.40	1.38	1.68	1.27	1.58	1.38	
AP	2.13	1.85	2.20	1.83	1.72	1.72	2.09	1.99	1.56	1.92	
AB	9.61	6.39	11.52	6.74	8.98	6.73	9.66	4.99	8.67	6.21	
SP	2.96	2.72	3.28	2.55	3.19	2.68	3.00	3.13	2.77	3.00	
Sibling Relationships in Early Childhood											
CON	-	-	-	-	1.61	.61	1.96	.60	2.32	.61	
PI	-	-	-	-	3.90	.69	3.91	.56	3.99	.57	
AV	-	-	-	-	1.39	.40	1.46	.37	1.64	.52	
Attachment											
Q-sort	.44	.19	-	-	.36	.22	-	-	.35	.22	
Did not Attend Sibling Preparation Class											
Third Trimester			1-month			4-months			8- months		
<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	
Child Behavior Checklist											
INT	6.25	4.58	6.68	4.94	7.00	5.52	6.85	5.30	6.88	4.92	

Attended Sibling Preparation Class											
Third Trimester			1-month			4-months			8-months		
<i>M</i>	<i>SD</i>	<i>M</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>M</i>	<i>SD</i>	<i>SD</i>
EXT	10.47	6.25	12.63	7.20	11.48	6.65	11.27	6.51	10.92	6.98	
ER	1.95	1.69	2.33	1.91	2.38	2.01	2.20	1.99	2.31	1.86	
AD	1.67	1.63	1.53	1.56	1.59	1.72	1.61	1.93	1.58	1.70	
SC	1.62	1.57	1.53	1.66	1.53	1.66	1.47	1.73	1.40	1.59	
WD	1.01	1.22	1.28	1.38	1.50	1.67	1.56	1.48	1.59	1.40	
AP	2.19	1.64	2.22	1.78	2.20	1.85	2.11	1.85	1.88	1.66	
AB	8.29	5.19	10.41	6.11	9.28	5.53	9.15	5.48	9.04	5.96	
SP	3.15	2.96	2.78	2.55	3.06	2.82	3.10	2.68	3.00	2.41	
Sibling Relationships in Early Childhood											
CON	-	-	-	-	1.68	.56	2.00	.66	2.45	.66	
PI	-	-	-	-	3.76	.67	3.82	.63	3.86	.59	
AV	-	-	-	-	1.57	.53	1.51	.58	1.74	.64	
Attachment											
Q-sort	.49	.21	-	-	.42	.21	-	-	.42	.21	

Note. INT = internalizing, EXT = externalizing, ER = emotional reactivity, AD = anxiety/depression, SC = somatic complaints, WD = withdrawal, AP = attention problems, AB = aggressive behavior, SP = sleep problems, CON = conflict, PI = positive involvement, AV = avoidance.

Table 3
Descriptive Statistics of Fathers' Report Measures by Class Attendance and Timepoint

Attended Sibling Preparation Class														
Third Trimester			1-month			4-months			8-months			12-months		
<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	
Child Behavior Checklist														
INT	7.18	5.33	6.63	4.60	6.56	3.95	6.14	4.43	7.18	5.33				
EXT	10.51	6.93	11.74	6.35	10.00	6.25	10.07	5.58	10.51	6.93				
ER	2.47	2.02	2.15	1.73	1.93	1.59	1.95	1.45	2.47	2.02				
AD	1.73	1.72	1.63	1.44	1.82	1.42	1.60	1.61	1.73	1.72				
SC	1.64	1.76	1.65	1.74	1.44	1.41	1.00	1.27	1.64	1.76				
WD	1.33	1.46	1.20	1.39	1.36	1.35	1.60	1.53	1.33	1.46				
AP	2.33	1.68	2.11	1.66	1.84	1.52	1.88	1.57	2.33	1.68				
AB	8.18	5.84	9.63	5.51	8.16	5.23	8.19	4.36	8.18	5.84				
SP	2.98	2.31	3.13	2.17	2.47	1.84	2.24	2.18	2.98	2.31				
Sibling Relationships in Early Childhood														
CON	-	-	-	-	1.62	.56	1.93	.62	2.42	.67				
PI	-	-	-	-	3.70	.61	3.77	.50	3.85	.57				
AV	-	-	-	-	1.47	.48	1.49	.45	1.89	.57				
Attachment														
Q-sort	.47	.20	-	-	.43	.19	-	-	.39	.20				
Did not Attend Sibling Preparation Class														
Third Trimester			1-month			4-months			8-months			12-months		
<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	
Child Behavior Checklist														
INT	6.19	4.36	6.57	4.74	6.37	4.59	6.13	4.91	6.46	5.17				

Attended Sibling Preparation Class											
Third Trimester			1-month			4-months			8-months		
<i>M</i>	<i>SD</i>	<i>M</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>M</i>	<i>SD</i>	<i>SD</i>
EXT	11.01	6.83	11.43	6.53	11.23	6.33	10.66	6.61	10.47	6.95	
ER	1.98	1.56	2.14	1.83	2.11	1.68	1.90	1.76	2.09	2.01	
AD	1.56	1.50	1.61	1.57	1.42	1.61	1.45	1.72	1.51	1.76	
SC	1.55	1.61	1.59	1.70	1.56	1.67	1.40	1.55	1.47	1.46	
WD	1.10	1.23	1.22	1.33	1.27	1.28	1.38	1.32	1.39	2.76	
AP	2.39	1.86	2.38	1.78	2.30	1.76	2.10	1.73	1.97	1.74	
AB	8.62	5.49	9.05	5.33	8.93	5.10	8.57	5.48	8.50	5.87	
SP	3.00	2.84	2.74	2.52	2.84	2.67	2.76	2.55	2.76	2.44	
Sibling Relationships in Early Childhood											
CON	-	-	-	-	1.60	.59	1.90	.61	2.37	.62	
PI	-	-	-	-	3.61	.65	3.59	.62	3.68	.58	
AV	-	-	-	-	1.57	.55	1.52	.54	1.73	.63	
Attachment											
Q-sort	.46	.22	-	-	.40	.20	-	-	.42	.20	

Note. INT = internalizing, EXT = externalizing, ER = emotional reactivity, AD = anxiety/depression, SC = somatic complaints, WD = withdrawal, AP = attention problems, AB = aggressive behavior, SP = sleep problems, CON = conflict, PI = positive involvement, AV = avoidance.