

Family Structure and Intra-Family Relationship Effects on Depressive Symptoms in Young Adulthood

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Introduction. Family relationships during adolescence can greatly influence adolescent mental health and well-being (Armsden & Greenberg, 1987). Specifically, sibling relationships during the adolescent years play a key role in individual psychological development; greater relationship quality between siblings has been associated with fewer depressive symptoms for both siblings (Richmond, Stocker, & Rienks, 2005). Parent-adolescent relationship quality may also contribute to overall health and well-being during this time (Sheeber, Davis, Leve, Hops, & Tildesley, 2007). Rates of parental divorce remain close to fifty percent (Yu, Petit, Lansford, Dodge, & Bates, 2010), and many adolescents living in single parent and remarried homes may experience more complex parent-child and sibling relationships (Henderson & Taylor, 1999). Using two waves from the National Longitudinal Study of Adolescent Health (Add Health), I examine adolescent family structure as those who live in intact (both biological parents) versus non-intact (some other family environment with a biological mother) families and determine whether intra-family relationships show significant differences in young adulthood mental health.

I rely on Bronfenbrenner's developmental ecological model for understanding why parent-child and sibling relationship quality might explain the effects of adolescent family structure on young adults' mental health. This model suggests that an individual's psychological adjustment is dependent on daily interactions that occur among nested structures within one's environment (Bronfenbrenner, 1977).

Hypotheses. The main question I seek to answer is: Can the effects of adolescent family type on depressive symptoms in young adulthood be explained by intra-family relationships? I present five aims that contribute to this goal. First, I hypothesize that adolescents from intact families will report fewer depressive symptoms in young adulthood than those from non-intact families. Second, I hypothesize that adolescents with more negative parent-child relationships will experience greater depressive symptoms in young adulthood than those with positive parent-child relationships, independent of other variables in the model. Third, I expect to find that adolescents with more positive sibling relationships and less quarreling will have fewer depressive symptoms in young adulthood than those with more negative sibling relationships, independent of other variables in the model. Lastly, I explore whether sibling dyad characteristics (type and gender composition) have any effect on depressive symptoms in young adulthood.

Data. We use restricted data from the National Longitudinal Study of Adolescent Health to address these aims. Add Health is a nationally representative multi-wave study that

collected its initial wave from 1994-1995 and used stratified random sampling to select students from high schools in grades seven through twelve (Harris et al., 2009). Wave 3 interviews were conducted from 2001-2002. This study combines data from Wave 1 and Wave 3. I use the pairs subsample from Wave 1, which consists of adolescents with one or more siblings 12 to 18 years old who were also in the study. I randomly selected a pair for families that contributed multiple pairs to the sibling sample. Sample weights provided by Add Health were used to correct for oversampling of twins and specific racial groups.

This analysis uses a randomly selected index sibling from unique dyads where both siblings reported about their sibling relationship, the biological mother was the parent respondent and the index sibling also identified the parent as his/her biological mother, and that child also completed a CES-D score at Wave 3. The original adolescent pairs sample consisted of 3,139 sibling dyads. In order to determine whether both siblings in a pair completed the sibling relationship questions about each other, I matched household roster reports from each adolescent according to age (12-18 years old), gender, and sibling relationship reports within the Wave 1 in-home interview. I excluded cases missing an age report, any one of four sibling relationship questions, and those who did not report on their relationship with their biological mother. The unit of analysis for this study includes a sample of 834 index adolescents. I combine their data with information from their sibling and biological mother.

Analysis. To test whether the effects of adolescent family type on depressive symptoms in young adulthood are explained by intra-family relationships I use a generalized linear model (GLM) with a log link, often used with non-normally distributed outcome variables. GLM allows me to take the log of the mean CES-D value rather than the raw score; maintaining a more normal distribution of the outcome for both males and females in the sample. Because the log link is used in my analyses, the change in CES-D score at Wave 3 is actually the change in the log of CES-D. For my first model I regress intact family structure on depressive symptoms at Wave 3, controlling for depressive symptoms in adolescence. My second model includes parent-child relationship quality, my third sibling relationship quality and quarreling, and my fourth sibling dyad characteristics. I also test for interactions between intra-family relationship quality and dyad gender composition. All analyses were completed using STATA version eleven (StataCorp., 2001), and models were weighted to correct for oversampling of twins in the study.

Results. Weighted generalized linear modeling to test my main goal and first hypothesis showed that non-intact family structure was a significant predictor of increased depressive symptoms in young adulthood, even after controlling for CES-D score and intra-family relationship quality at adolescence. Looking at mother-child relationship quality revealed that adolescents who perceived a more positive relationship with their

mother had a slightly significant lower CES-D score in young adulthood, controlling for depressive symptoms in adolescence. The same was not true for the mother's perspective of relationship quality with the child. Sibling relationship quality was found to be a significant predictor of depressive symptoms in young adulthood, but only upon introducing characteristics of the sibling dyad. Gender composition showed that adolescents in mixed gender dyads reported higher depressive symptoms in young adulthood compared to those in female-female dyads, even after controlling for CES-D in adolescence. Additionally, the effect of sibling relationship quality on young adult depressive symptoms was significantly different between adolescents in mixed gender and female-female dyads.

Table 1. Weighted Generalized Linear Models of Parent-Adolescent and Sibling Relationship Quality Effects on Depressive Symptoms in Wave 3, Controlling on CES-D at Wave 1 (N=834)

	Model 1	Model 2	Model 3
	β (S.E.)	β (S.E.)	β (S.E.)
CESD Wave 1	0.046 (0.009)***	0.042 (0.010)***	0.044 (0.010)***
Intact Family	-0.128 (0.096)	-0.108 (0.090)	-0.100 (0.094)
Control Variables			
Age	-0.067 (0.027)**	-0.128 (0.033)***	-0.126 (0.036)***
Male	-0.231 (0.107)**	-0.187 (0.085)**	-0.215 (0.080)***
Race/Ethnicity (White omitted)			
Non-Hispanic Black	0.157 (0.122)	0.167 (0.111)	0.203 (0.111)
Hispanic	-0.021 (0.150)	-0.046 (0.171)	-0.046 (0.171)
Other	0.224 (0.112)**	0.225 (0.153)	0.225 (0.153)
Household Income	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Mother's Education	-0.036 (0.020)*	-0.036 (0.022)	-0.036 (0.022)
Number Siblings in Household	-0.053 (0.038)**	-0.065 (0.041)	-0.056 (0.042)
Gender x Age		0.166 (.050)***	0.180 (.053)***
Mother-Child Relationship Variables			
Child's Perspective		-0.030 (.016)*	-
Mother's Perspective		0.015 (.017)	-
Sibling Relationship Variables			
Index Sibling Relationship Quality			-0.011 (0.014)
Index Sibling Quarreling			0.051 (0.039)
Adjusted R ²	0.027	0.085	0.087

* p<0.10, ** p<=0.05, ***p<= 0.01

Table 2. Weighted Generalized Linear Models of Dyad Sibling Characteristic Effects on Depressive Symptoms in Wave 3, Controlling on CES-D at Wave 1 (N=834)

	Model 4	Model 5
	β (S.E.)	β (S.E.)
CESD Wave 1	0.049 (0.010)***	0.043 (0.010)***
Intact Family	-0.139 (0.076)*	-0.151 (0.080)*
Control Variables		
Age	-0.139 (0.035)***	-0.139 (0.035)***
Male	-0.296 (0.100)***	-0.265 (0.101)***
Race/Ethnicity (White omitted)		
Non-Hispanic Black	0.186 (0.110)*	0.181 (0.108)
Hispanic	-0.052 (0.203)	0.018 (0.192)
Other	0.241 (0.175)	0.203 (0.176)
Household Income	0.003 (0.001)	0.000 (0.001)
Mother's Education	-0.048 (0.025)*	-0.036 (0.032)
Number Siblings in Household	-0.044 (0.044)	-0.034 (0.045)
Gender x Age	0.196 (.057)***	0.189 (.056)***
Mother-Child Relationship Variables		
Child's Perspective		
Mother's Perspective		
Sibling Relationship Variables		
Index Sibling Relationship Quality	0.032 (0.017)*	-0.029 (0.045)
Index Sibling Quarreling	0.076 (0.050)	0.065 (0.052)
Pair Type (Full Sibling omitted)		
Half Sibling	0.020 (0.174)	-0.001 (0.168)
Step & Non-Related	-0.182 (.167)	-0.187 (0.167)
Twins	-0.117 (.187)	-0.197 (0.158)
Pair Gender Composition (F-F omitted)		
Male-Male	0.194 (0.156)	0.169 (0.162)
Male-Female	0.434 (0.104)***	0.408 (0.104)***
Sibling Age Difference	0.051 (.047)	0.046 (0.047)
Sib Relationship x Male-Male		0.050 (.048)
Sib Relationship x Male-Female		0.086 (.052)*
Adjusted R ²	0.075	0.079

* p<0.10, ** p<=0.05, ***p<= 0.01

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