

# Perceptions of Family Functioning and Sibling Relationship Characteristics as Predictors of Adolescent Self-Competence



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## Abstract

The relationship between family functioning, sibling relationship characteristics, and adolescent perceptions of self-competence across five domains (social, academic, athletic, physical appearance, and global self-worth) were examined in a sample of 441 high school students. Relationships were examined by the gender of the respondent and his or her sibling. Multiple regression analysis results indicated that more positive family functioning predicted higher levels of self-competence for adolescent boys and girls among specific domains. The impact of sibling relationship characteristics on adolescent self-competence varied by the gender of the adolescent and the gender of the sibling.

## Research Questions

- Do adolescents' perceptions of family functioning and sibling relationships predict self-reported perceptions of self-competence across five domains (social, academic, athletic, physical appearance, and global self-worth)?
- What role, if any, does gender play in this relationship?

## Measures

### Family Adaptability and Cohesion

The Family Adaptability and Cohesion Evaluation Scale II (FACES II; Olson & Wilson, 1982) was used to measure perceived levels of family functioning. The FACES II measure consists of one 10-item Adaptability scale and one 10-item Cohesion scale. A representative item is "Family togetherness is very important". Respondents rated perceptions of these items using a 5-point Likert-type scale ranging from 1="almost never" to 5="almost always". Both have demonstrated good psychometric properties (Olson & Wilson, 1982; Olson et al., 1983). The  $\alpha$  coefficients for family cohesion and family adaptability were .83 and .79 in this sample, respectively.

### Sibling Hostility-Coercion and Warmth-Support

Hostility-coercion and warmth-support (hereafter referred to as hostility and warmth) in sibling relationships were assessed using twelve items. Using a seven-point scale, respondents reported how often their siblings behaved in an angry manner and in a warm manner during the previous month: 1="never behaved that way" to 7="always behaved that way". Previous research supports the reliability and validity of this measure (Slomkowski et al., 2001). The  $\alpha$  coefficients in this sample were .87 and .89 for hostility and .91 and .90 for warmth (in sister and brother families, respectively).

### Adolescent Self-Competence

The Self-Perception Profile for Adolescents (SPP; Harter, 1988) was used to assess perceptions of self-competence across multiple domains. The following SPP subscales were used in this study: Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, global Self Worth. Each of the subscales included six items; a representative item is "Some teenagers are kind of hard to like BUT other teenagers are really easy to like". Respondents rated their perception of these items using a 4-point structured alternative format ranging from 1="low perceived competence" to 4="high perceived competence". The SPP is both a reliable and valid measure of adolescent self-competence (Lerner et al., 1990; Windle et al., 1986). In the present sample, the  $\alpha$  coefficients were .77 for academic competence, .75 for social competence, .87 for athletic competence, .88 for appearance, and .79 for self-worth.

## Participants and Procedures

Participants were drawn from a larger longitudinal study (The Adolescent Adjustment Project). The sample used was pulled from the second wave of data collection which took place in the Spring of 2007. High schools students in Delaware, Pennsylvania, and Maryland filled out a self-report survey that took approximately 40 minutes to complete. At that time, the sample included 1,036 10<sup>th</sup>- and 11<sup>th</sup>-grade adolescent boys (47.4%) and girls (52.4%). For the purposes of this study, only adolescents reporting one-brother and one-sister households were included. The details are as follows:

- 441 adolescent high school boys (41.5%) and girls (58.5%)
- Age range = 15 to 18 years; mean = 16.1 years (SD = 0.69)
- 41% Caucasian; 24% Hispanic; 22% African American; 5% Asian
- 52% lived with both biological parents; 88.6% lived with their biological mother; 60.9% lived with their biological father, 12% lived with a step-father, 3% lived with a step-mother, 1% lived with an adoptive mother and father

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## Analysis

Hierarchical regression models were conducted regressing adolescent competence scores on family functioning and sibling relationship characteristics. Block one was comprised of the family functioning variables (family cohesion and adaptability) entered simultaneously into the analysis. Block two included the sibling relationship variables (hostility and warmth), entered simultaneously as well. Separate regression models were conducted for each of the five measures of self-competence. Models were also separately conducted for respondents with brothers and with sisters. This approach yielded 10 separate models.

**Table 1:**  
Correlations Between Family Functioning, Sibling Relationship Quality, and Adolescent Self-Competence Variables for Boys

Variables	1	2	3	4	5	6	7	8	9	10	11
<b>1. Family Cohesion</b>	---	.85***	-.02	.35***	---	---	.07	-.05	-.01	-.10	.29**
<b>2. Family Adaptability</b>	.82***	---	-.01	.33***	---	---	.14	.11	.03	-.12	.30**
<b>3. Hostility with Brother</b>	---	---	---	-.06	---	---	.08	-.09	-.05	-.06	.06
<b>4. Warmth with Brother</b>	---	---	---	---	---	---	.14	.20*	.13	.08	.22*
<b>5. Hostility with Sister</b>	-.15	-.20*	---	---	---	---	---	---	---	---	---
<b>6. Warmth with Sister</b>	.47***	.50***	---	---	---	---	---	---	---	---	---
<b>7. Social Competence</b>	.27*	.20	---	---	-.09	-.18	---	.33***	.48***	.58***	.60***
<b>8. Academic Competence</b>	.29**	.24*	---	---	-.10	.30**	.30**	---	.34***	.169	.47***
<b>9. Athletic Competence</b>	.25*	.20	---	---	.04	.22*	.67***	.33***	---	.28**	.37***
<b>10. Physical Appearance</b>	.33***	.20	---	---	-.06	.29*	.54***	.31**	.47***	---	.636***
<b>11. Global Self-Worth</b>	.42***	.37***	---	---	-.16	.36***	.50***	.48***	.42***	.68***	---

*Note.* Correlations for brothers (in blue) and sisters (in pink) are presented above and below the diagonal, respectively. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 2:**  
Correlations Between Family Functioning, Sibling Relationship Quality, and Adolescent Self-Competence Variables for Girls

Variables	1	2	3	4	5	6	7	8	9	10	11
<b>1. Family Cohesion</b>	---	.83***	-.26***	.35***	---	---	.21*	.36***	.15	.23**	.36***
<b>2. Family Adaptability</b>	.83***	---	-.23**	.29***	---	---	.18*	.26**	.20*	.28***	.33***
<b>3. Hostility with Brother</b>	---	---	---	-.41***	---	---	-.14	-.19*	-.10	-.21*	-.21*
<b>4. Warmth with Brother</b>	---	---	---	---	---	---	.11	.00	.33	.13	.28**
<b>5. Hostility with Sister</b>	-.144	-.15	---	---	---	---	---	---	---	---	---
<b>6. Warmth with Sister</b>	.25**	.20*	---	---	-.42***	---	---	---	---	---	---
<b>7. Social Competence</b>	.30***	.22*	---	---	-.09	-.12	---	.29**	.27**	.40***	.44***
<b>8. Academic Competence</b>	.34***	.32***	---	---	-.18*	-.01	.22*	---	.28**	.15	.36***
<b>9. Athletic Competence</b>	.35***	.31***	---	---	-.06	-.06	.29***	.22*	---	.25**	.30***
<b>10. Physical Appearance</b>	.29***	.39***	---	---	-.26**	.20*	.41***	.39***	.29***	---	.62***
<b>11. Global Self-Worth</b>	.47***	.43***	---	---	-.17*	.24**	.47***	.49***	.34***	.61***	---

*Note.* Correlations for brothers (in blue) and sisters (in pink) are presented above and below the diagonal, respectively. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

## Results

### Boys with a Brother

As shown in Table 3, more positive family functioning predicted higher self-worth (adj.  $R^2 = .09, p < .001$ ). Sibling relationship characteristics did not further predict competence.

### Boys with a Sister

More positive family functioning predicted higher social (adj.  $R^2 = .09, p < .01$ ), academic (adj.  $R^2 = .07, p < .05$ ), athletic (adj.  $R^2 = .07, p < .05$ ), and physical appearance competence (adj.  $R^2 = .14, p < .001$ ), and self-worth (adj.  $R^2 = .20, p < .001$ ), as illustrated in Table 4. Sibling relationship characteristics did not predict further competence.

### Girls with a Brother

As shown in Table 5, more positive family functioning predicted higher academic (adj.  $R^2 = .12, p < .001$ ) and physical appearance competence (adj.  $R^2 = .06, p < .01$ ), and self-worth (adj.  $R^2 = .12, p < .001$ ). Additionally, lower sibling hostility (adj.  $R^2 = -.21, p < .05$ ) and lower sibling warmth (adj.  $R^2 = -.20, p < .05$ ) predicted higher academic competence, above and beyond family functioning.

### Girls with a Sister

Results for this group are shown in Table 6. More positive family functioning predicted higher social (adj.  $R^2 = .07, p < .01$ ), academic (adj.  $R^2 = .11, p < .001$ ), athletic (adj.  $R^2 = .11, p < .001$ ), and physical appearance competence (adj.  $R^2 = .10, p < .001$ ), and self-worth (adj.  $R^2 = .21, p < .001$ ). Additionally, lower sibling hostility predicted higher academic (adj.  $R^2 = -.25, p < .01$ ) and physical appearance competence (adj.  $R^2 = -.23, p < .05$ ), above and beyond family functioning.

**Table 3:**  
Hierarchical Regression Analysis Predicting Adolescent Self-Competence from Family Functioning and Sibling Relationship Characteristics for Boys with a Brother

Outcome Variables	Predictor Variables	Model 1			Model 2		
		B	SE	$\beta$	B	SE	$\beta$
<b>Social Competence</b>	Family Cohesion	-.07	.10	-.14	-.10	.10	-.20
	Family Adaptability	.17	.13	.27	.18	.13	.28
	Hostility with Brother				.05	.04	.08
	Warmth with Brother				.04	.04	.11
Total R <sup>2</sup>		.01		.00			
F for change in R <sup>2</sup>	1.34			.65			
<b>Academic Competence</b>	Family Cohesion	-.04	.10	-.07	-.06	.10	-.13
	Family Adaptability	.12	.14	.18	.11	.14	.16
	Hostility with Brother				-.03	.04	-.08
	Warmth with Brother				.08	.04	.20
Total R <sup>2</sup>		-.01		.01			
F for change in R <sup>2</sup>	.70			1.90			
<b>Athletic Competence</b>	Family Cohesion	-.05	.11	-.09	-.08	.12	-.14
	Family Adaptability	.07	.15	.09	.06	.16	.08
	Hostility with Brother				-.01	.04	-.01
	Warmth with Brother				.07	.05	.15
Total R <sup>2</sup>		-.02		.02			
F for change in R <sup>2</sup>	.11			.94			
<b>Physical Appearance</b>	Family Cohesion	-.03	.11	-.07	-.04	.11	-.07
	Family Adaptability	.13	.14	.18	.12	.14	.17
	Hostility with Brother				-.03	.04	-.08
	Warmth with Brother				.02	.05	.05
Total R <sup>2</sup>		-.00		-.02			
F for change in R <sup>2</sup>	.80			.42			
<b>Global Self-Worth</b>	Family Cohesion	.07	.10	.14	.04	.10	.09
	Family Adaptability	.13	.13	.19	.13	.13	.19
	Hostility with Brother				.01	.04	.03
	Warmth with Brother				.05	.04	.13
Total R <sup>2</sup>		.09		.08			
F for change in R <sup>2</sup>	5.39**			.70			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 5:**  
Hierarchical Regression Analysis Predicting Adolescent Self-Competence from Family Functioning and Sibling Relationship Characteristics for Girls with a Brother

Outcome Variables	Predictor Variables	Model 1			Model 2		
		B	SE	$\beta$	B	SE	$\beta$
<b>Social Competence</b>	Family Cohesion	.05	.07	.12	.04	.07	.10
	Family Adaptability	.05	.08	.09	.04	.08	.08
	Hostility with Brother				-.03	.03	-.10
	Warmth with Brother				.01	.03	.04
Total R <sup>2</sup>		.02		.02			
F for change in R <sup>2</sup>	2.67			.90			
<b>Academic Competence</b>	Family Cohesion	.26	.08	.47***	.27	.08	.48***
	Family Adaptability	-.10	.10	-.14	-.10	.10	-.14
	Hostility with Brother				-.08	.03	-.21*
	Warmth with Brother				-.08	.03	-.20*
Total R <sup>2</sup>		.12		.16			
F for change in R <sup>2</sup>	10.22**			4.1*			
<b>Athletic Competence</b>	Family Cohesion	.01	.10	.02	-.003	.10	.01
	Family Adaptability	.14	.13	.16	.13	.13	.15
	Hostility with Brother				-.06	.04	-.14
	Warmth with Brother				-.02	.05	-.04
Total R <sup>2</sup>		.02		.02			
F for change in R <sup>2</sup>	2.08			1.04			
<b>Physical Appearance</b>	Family Cohesion	.03	.10	.04	.01	.10	.01
	Family Adaptability	.20	.12	.24	.19	.12	.23
	Hostility with Brother				-.07	.04	-.14
	Warmth with Brother				.01	.04	.03
Total R <sup>2</sup>		.06		.07			
F for change in R <sup>2</sup>	5.33**			1.74			
<b>Global Self-Worth</b>	Family Cohesion	.11	.08	.21	.09	.08	.17
	Family Adaptability	.11	.09	.17	.10	.09	.16
	Hostility with Brother				-.04	.03	-.12
	Warmth with Brother				.04	.03	.10
Total R <sup>2</sup>		.12		.13			
F for change in R <sup>2</sup>	9.91***			2.24			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 4:**  
Hierarchical Regression Analysis Predicting Adolescent Self-Competence from Family Functioning and Sibling Relationship Characteristics for Boys with a Sister

Outcome Variables	Predictor Variables	Model 1			Model 2		
		B	SE	$\beta$	B	SE	$\beta$
<b>Social Competence</b>	Family Cohesion	.21	.08	.47*	.20	.08	.46*
	Family Adaptability	-.11	.11	-.19	-.12	.11	-.20
	Hostility with Sister				-.02	.04	-.05
	Warmth with Sister				.01	.04	.02
Total R <sup>2</sup>		.09		.07			
F for change in R <sup>2</sup>	5.19**			.11			
<b>Academic Competence</b>	Family Cohesion	.18	.10	.34	.15	.10	.29
	Family Adaptability	-.03	.13	-.04	-.08	.13	-.11
	Hostility with Sister				-.02	.04	-.04
	Warmth with Sister				.08	.05	.19
Total R <sup>2</sup>		.07		.08			
F for change in R <sup>2</sup>	4.43*			1.29			
<b>Athletic Competence</b>	Family Cohesion	.23	.10	.41*	.21	.10	.38*
	Family Adaptability	-.11	.14	-.14	-.13	.14	-.17
	Hostility with Sister				.03	.05	.06
	Warmth with Sister				.05	.05	.12
Total R <sup>2</sup>		.07		.06			
F for change in R <sup>2</sup>	4.37*			.63			
<b>Physical Appearance</b>	Family Cohesion	.27	.08	.59	.25	.08	.56
	Family Adaptability	-.17	.11	-.27	-.18	.11	-.29
	Hostility with Sister				.01	.04	.03
	Warmth with Sister				.03	.04	.09
Total R <sup>2</sup>		.14		.12			
F for change in R <sup>2</sup>	7.97***			.31			
<b>Global Self-Worth</b>	Family Cohesion	.21	.07	.51**	.19	.07	.45**
	Family Adaptability	-.03	.10	-.05	-.06	.10	-.11
	Hostility with Sister				-.03	.03	-.08
	Warmth with Sister				.06	.04	.17
Total R <sup>2</sup>		.20		.21			
F for change in R <sup>2</sup>	12.13**			1.48			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$