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# The influence of sibling presence on grade point average

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THE INFLUENCE OF SIBLING PRESENCE ON GRADE POINT AVERAGE

A thesis submitted to  
The Graduate College of  
Marshall University

In partial fulfillment of  
the requirements for the degree of  
Education Specialist

in

School Psychology

By  
Amanda JoAnne Kipp. MA

Approved by  
Dr. Sandra S. Stroebel, Committee Chairperson  
Dr. R. Vernon Haning  
Dr. Stephen L. O'Keefe

Marshall University  
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## **ACKNOWLEDGMENTS**

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## **ABSTRACT**

Using archival data from schools in southeastern Ohio, this paper explores the idea that the GPA of students will be affected when a sibling resides in the home compared to students who do not have a sibling in the home. The study explored whether having an older sibling affects the GPA of a student more than that of a younger sibling. Finally, the study examined whether an older male sibling has an affect on the student's GPA more than an older female sibling. The results showed that having a sibling in the home does not affect the GPA of a younger sibling and having an older versus younger sibling didn't positively or negatively influence the GPA. Results demonstrated that gender was not a factor in influencing the GPA of the student and show that any type of sibling presence in the home doesn't have a significant affect on the GPA.

## CHAPTER 1

### LITERATURE REVIEW

It is well known that having siblings versus not having siblings can have an influence on the outcome of a child's behavior evidenced by the long standing debate of which is worse, middle child syndrome or only child syndrome. Numerous studies have been conducted on various aspects of sibling relationships and their influences on development over the years. Although research on the influence older siblings have on the academic success of younger students have been conducted, the research that is available is limited and over 30 years old. The most recent research available was conducted by Bouchey, Shoulberg, Jodl, and Eccles (2010) who studied the effect of success of older sibling's academic engagement upon younger siblings. Variables examined included younger siblings' perceptions of engagement and academic adjustment in same sex and mixed sex dyads. These researchers noticed that younger siblings have increased success when they have perceived that the older siblings are more engaged in academics during the 7<sup>th</sup> and 8<sup>th</sup> grade years. Furthermore, having a female sibling increased the likelihood of a positive influence on the younger sibling.

In the following pages, this paper reviews the research on the social and developmental influences that older siblings may have on younger siblings. It also will review research on emotional and academic support to highlight how this current research may support previous research and add quantitative academic data to the research.

#### **Influence of Older Siblings on Motor and Social Development**

Siblings positively influence their younger brother's and sister's onset of motor milestones (Barr & Hayne, 2003). Berger & Nuzzo (2008) found when younger siblings crawled and walked earlier than older siblings it suggested imitating or modeling of their siblings. However, they also found that some older siblings had an earlier onset of development that could

be due to the larger age difference between the siblings suggesting that research is still inconclusive as to how and when older siblings can influence younger sibling's motor development. Even though Berger & Nuzzo (2008) found that the lack of influence was due to a larger age gap, Abramovitch, Corter, and Lando (1979) had previously determined that the greater the age gap between siblings, the more likely it is for a younger sibling to favor and accept guidance from their older sibling. Even in conflict, there are positive findings for sibling influence for development of motor skills. These conflicts within research could be due to the time period in which they were conducted because of changes in family dynamics, age differences, size of the age gap between siblings, or societal change.

While motor development is positively influenced, studies have shown that older siblings negatively affect language development of their younger siblings. When an older sibling is present in the home, some younger siblings may start to rely on them to converse and opportunities to participate in language development may be reduced (Wellen, 1985). Development overall may be positively influenced; however, social language development specifically may be hindered. The study of language and social development and the impact that siblings have on each other has not been replicated since Wellen's research in the 1980's.

Research is also rather limited and conflicted on sibling influence on social development. The lack of research on older siblings as models for socializing is surprising given the impact siblings have on development (Bouchey et al., 2010). In the most general terms, older siblings do influence younger siblings developmentally. Older siblings provide developmental modeling to their younger siblings to help create a stimulating environment in the home since they are more advanced (Wellen, 1985). Dunn, Slomkowski & Bearsall (1993) found that when older siblings provide emotional support to their younger siblings, the younger siblings have higher social skills which are associated with higher perceived self-competence and better adjustment. This is in contrast to a negative correlation between support given and the developmental adjustment of younger siblings in a study by Widmer and Weiss (2000). The differences between these studies

may be due to differences in how the data were collected. Widmer and Weiss (2000) used interviews while Dunn et al. (1993) utilized home observations. In Widmer and Weiss's study they also were able to determine an important factor not generally examined in other studies. Often, it is not the adjustment of the older sibling but instead it is the *perceived* adjustment that influences the younger sibling if influenced in any way at all. Since looking at development and socialization is important, it's also necessary to look at other variables influencing academics such as emotional and academic support.

### **Influence of Emotional and Academic Support**

Evident in the most current available research are two conflicting views on the effect of sibling emotional support. Some research would suggest that sibling relationships can be helpful, warm, affectionate, and assist to help children develop and function more successfully (Cicirelli, 1995). This emotional positive support is very important in sibling relationships especially when older siblings often care for their younger siblings in a school setting. This would confirm the theory that having older siblings can be a positive aspect in a family dynamic and the younger sibling would therefore have better outcomes in school, academics, and mental health among other areas. However, other research has suggested that siblings' relationships could have more negative outcomes such as conflict and violence between siblings that compete and try to individuate from each other as they move into adolescence compared to infancy and childhood (Buhrmester & Furman, 1990). Research also suggests that when younger siblings are struggling, older siblings may feel more responsibility to emotionally support their younger siblings and therefore may feel greater responsibility to support the family as a whole (Widmer & Weiss, 2000). This demonstrates that older siblings tend to provide emotional support more when it seems that their younger sibling is in need of it rather than on a general basis.

When conflicts arise between siblings, younger siblings may look to other relationships to find the support they need. For example, teachers can be instrumental in supporting a child emotionally. Teachers can directly influence a child's motivation, academic performance, and engagement (Bouchey & Harter, 2005; Furrer & Skinner, 2003). Congruent with these findings, adolescents also value academics and GPA more when they feel supported by an important adult (Bouchey, 2004). Within and outside of the family dynamic, research has confirmed that when interactions with others are characterized by affection, warmth, and support, an adolescent has consistently higher positive academic adjustment (Bouchey et al, 2010).

The emotional support data over the past two decades suggest that older siblings showing support emotionally can influence a younger sibling's academics. Eccles, Early, Fraser, Belansky, and McCarthy (1997) provide the most significant support in research for older sibling's influence on younger siblings. Found in their research were supportive relationships that were directly linked to academic adjustment. The research indicated that GPA was concurrently connected to the perceived support from their older sibling when the younger sibling was starting school (Eccles et al., 1997). However, Eccles et al. (1997) used seventh grade students who were attending a public school and neither age nor gender of the older sibling were collected. Extending this research further into adolescence and collecting more information about the older sibling could benefit understanding of sibling influence on the academic achievement of an adolescent youth. Research indicates that having older siblings in infancy and childhood is beneficial for motor, social, and academic development. Due to conflicting research for adolescence, further research on the impact of older siblings on academic performance is needed to answer questions about sibling influence during adolescence.

### **Gender and Similarities**

Somewhat in tandem with the theory that older siblings can promote development and socialization and provide emotional and academic support, other research has revealed that older

siblings tend to be a better role model and influence on younger siblings when they are more similar to each other, specifically similar in gender (Whiteman, McHale & Crouter, 2007). In particular, same sex siblings show trends of having closer relationships, thus creating a higher level of influence toward the younger sibling (Furman & Buhrmester, 1985a, 1985b). This allows us to assume that same sex siblings identify more with each other creating a greater potential for the older sibling to become a role model (Buhrmester & Furman, 1990; Furman & Buhrmester, 1992). Bouchev et al. (2010) found support that older siblings have influence on development more strongly when the older siblings were female, suggesting that gender can affect modeling in more than one area such as it does socially and developmentally. Furthermore, findings suggest that female siblings often show more affection and support in their relationships with their younger siblings when compared to older male siblings. With the amount of research supporting the idea that the gender of the sibling matters, it is important to include gender as a variable in sibling research. .

Research has shown trends that supportive, positive relationships with older siblings are congruent with academic development and successful behavior for the younger sibling; however, more quantitative data is needed. Related quantitative research that was completed by Turunen in 2014 utilized Swedish archival data to examine the effect on academic achievement and grade point averages when a student had a younger or older half-sibling or there was a disruption of family structure. They defined “disruption of family structure” as having separated parents. Same sex and mixed sex dyads were also examined in this data determining that by having an older male sibling, regardless of the sex of the target student, a lower grade point average was more likely (Turunen, 2014). The data clearly indicated that boys and girls alike who do not have any younger half siblings and who also live with both biological parents have the highest grade point averages. Further, if a student had experienced family disruption, but still had no younger half

siblings, they still had higher grade point averages than those who had younger or older siblings. They determined that experiencing the birth of a younger sibling had more negative effect on a students' academic achievement than having an older sibling. Overall, having an older or younger half-sibling had a negative effect on a student's academic achievement and grade point average when compared to a student with no half siblings (2014). In addition, Turunen discovered that in general, girls are more affected by the addition of half siblings; however, they still held a higher grade point average than boys. While this study provides important information regarding half siblings and family structure, current information on implications of siblings for all types of families is needed.

In the current study, the aim was to explore quantitative data that may further examine the influence of older siblings by analyzing quantitative data rather than relying on surveys, observations, and interviews. Although previous research provides a foundation to better understand the important role that gender plays on support, influence, development and socialization of younger siblings, there is a need for more research using congruent quantitative data that supports the theory that older siblings can specifically influence academics. This research aimed to update and expand the literature of sibling influence by evaluating the influence of sibling presence on academic achievement using quantitative data with high school students from all types of families.

Families are not the same as they were 30 years ago. With ever changing family demographics and structure, it is important to update and expand upon findings from previous research. Since 1990 cohabitation of unmarried partners with children has grown leaps and bounds according to the 2008 U.S. Census Bureau, with 6.2 million households reporting cohabitating relationships ("The Decline," 2010). Furthermore, around 4.3 million children since 1990 were reportedly raised in either same-sex partner homes or with cohabitating parents of the opposite sex. This has risen from 3% to 6% of children being raised in these circumstances from 1990 to 2008. With changes in family dynamics also come changes in attitudes toward family,

relationships, education, religion, and values, whether children are directly exposed to the new dynamic or not (“The Decline,” 2010). Not only have family demographics and dynamics evolved, the standards in education have also dramatically changed. From the Center for Public Education, in 2010 the National Governors Association released the Common Core State Standards establishing expectations for the knowledge and skills that students are expected to achieve at certain benchmarks throughout their education (Understanding, 2014). These new standards could greatly influence the pressure teachers place on students and the influence of siblings could recede compared to three decades ago. Drawing on the existing work consisting of theories about older siblings as role models for development, social influences, emotional and academic sibling support, this paper investigated whether the presence of an older sibling in the home affects the GPA of the younger sibling at the conclusion of their ninth grade year. Also, previous research did not compare children with siblings to children with no siblings, while the current study includes this comparison. The current study hypothesized that the presence of siblings in the home would influence the GPA of the target student. The second hypothesis was that the presence of older siblings in the home would have more effect on GPA of the target student than the presence of a younger sibling. The final hypothesis was that the target students who have older male siblings present in the home would have a lower GPA compared to the GPA of target students who have older female siblings present in the home.

## **CHAPTER 2**

### **METHOD**

#### **Participants**

Participants included 174 tenth grade students from the southeastern region of Ohio. The cumulative grade point average of the target students' ninth grade year was the focus of the current study. In this particular region where the data were collected, 45.8% of families are considered disrupted families according to the 2013 census data (US Census Bureau, 2013).

#### **Procedure**

The school's guidance counselor recorded de-identified archival data. This information included the target student's randomly assigned number, their sex, cumulative GPA at the end of their ninth grade year, and their age followed by the number of older siblings they have, the siblings' age, sex, the number of younger siblings they have, and that siblings' age, and sex.

## CHAPTER 3

### RESULTS

The current study hypothesized that the presence of siblings in the home will affect the GPA of the target student. On average, students had one sibling. As demonstrated in Table 2, target students who have siblings in the home did not have higher or lower GPA than those students who do not have siblings in the home ( $p = 0.659$ ). The second hypothesis was that the presence of an older sibling in the home would have more affect on GPA of the target student than the presence of a younger sibling. The target students living with an older sibling in the home did not have significantly different GPAs when compared to the students with a younger sibling in the home ( $p = 0.448$  &  $p = 0.443$ , respectively). The final hypothesis was that the target students who have older male siblings present in the home would have a lower GPA compared to the GPA of target students who have older female siblings present in the home Target students who presented with an older male sibling in the home did not have significantly lower GPAs when compared to students with an older female sibling in the home ( $p = 0.133$  &  $p = 0.967$ , respectively). In order to compare each group of participants' GPA to determine significance, a one-way analysis of variance was utilized. The means and standard deviations can be found in Table 1. There were no significant correlations between any potential variable predictors (see Table 3).

## **CHAPTER 4**

### **DISCUSSION**

The current study hypothesized that the presence of siblings in the home would affect the GPA of the target student. The results of this study did not find significant effects on a student's GPA when a sibling was present in the home as hypothesized, creating inconsistent findings with previous research. Eccles et al. (1997) found data that was supportive of sibling influence on GPA. Specifically, their research found that GPA were concurrently connected to the perceived support from their older sibling. Additionally, their study focused on the level of support that the younger sibling perceived to have from the older sibling to determine the influence on GPA, which the current study did not. The findings could also differ due to the method of data collection and the age of the student. The use of interviews and observations to measure perceived support from older siblings in the 1997 study could help explain the contrast in findings. Eccles studied seventh graders while this study evaluated ninth graders.

The second hypothesis was that the presence of an older sibling in the home would have more effect on GPA than the presence of a younger sibling was not supported. According to the research conducted by Dunn et al. (1993) when older siblings provided emotional support to a younger sibling, they had more influence on academic adjustment and GPA than a younger sibling would have on an older sibling. Findings in the current data could differ from Dunn et al. (1993) due to cultural and regional differences in families in the areas where the data were collected. For instance, Dunn et al (1993) studied families from an urban area in Pennsylvania while the current study was conducted in a rural southeastern region of Ohio. Sample size could also greatly have affected the difference in this finding. However, the current data are congruent with findings by Widmer and Weiss (2000) suggesting that there are no significant correlations between having an older sibling and development or academic adjustment. This consistent finding could be due to similar sample sizes and the similar economic status of participants.

The final hypothesis was that the presence of an older male sibling in the home would have a more negative effect on GPA than the presence of an older female sibling in the home. This hypothesis was also unsupported by current data. While the current study did not directly collect data on participants' family disruption status, the region in which the data were collected show that 45.8% of families were considered disrupted families according to the 2013 census data (US Census Bureau, 2013). It is important to note that this rate of disruption in the southeastern region of Ohio exceeded state averages. With the application of this information, the current sample of data is comparable to the study completed by Turunen (2014) due to the high percentage of disrupted families. Contrary to the Swedish register data (Turunen, 2014), these findings do not provide supportive evidence that students with older male siblings often have lower GPAs than those students with an older female sibling. Even though similar findings were expected, a possible variable that led to conflicting data could be that Turunen (2014) evaluated disrupted families while the current study evaluated all families. Given that there are environmental influences, these results could differ due to geographical differences. Bouchey et al. (2010) also found that when older siblings were female they were more emotionally supportive and thus more academically influential, which lead to those students with older female siblings having higher GPAs. The need to be cautious in assuming that no other influences in the home existed is also recognized. Differences are also possible due to history of family connectedness not being assessed as a specific component of sibling interaction and whether or not the sibling was more or less present in the home even if they lived there. Possible implications such as the sibling leaving or moving to another parent's home during the school year was also not taken into consideration.

Using GPA scores was considered a reliable and valid measure since all students were subjected to the same teachers and atmosphere at school. Also, since GPA is used to reward scholarships and for admittance to college it is considered a reliable measure of academic progress. The mean GPA for each group being used improved the validity and reliability of the

measure by using group data. Using group data with members of the group being equally subjected to the possible unreliable grading techniques that may differ from teacher to teacher improved the reliability as well. Each student within each group had been exposed to all factors that would influence their GPA within the school system. There is always a possibility of other home and environmental factors that could influence GPA.

### **Limitations**

An important limitation in this research is that all data were collected without other pertinent demographic information, which very likely could have differed from the demographic history of data collected in previous research. Although the sample of siblings is not representative of U.S. siblings, it comes generally close to representing the effects of sibling's presence on GPA in the southeastern region of the state where the data were collected. This limits the generalizability. It should be noted that this sample was comprised of convenience data and provided further limited generalizability to the adolescent population. Additionally, a primary limitation of this research is the sample size. Further, this analysis does not capture the nature of the relationships between the target student and the siblings that may also reside in the home. In conclusion, the results of this study should be taken with caution due to the limited diversity of the sample.

## **Future Research**

In future research, the sample should be expanded by including data from more schools in other regions of the state in order to increase sample size and generalizability to the population. Ideally, the participants should be representative of the nation's demographics. Gathering and investigating demographic information, expanding the sample of participants, and extending the time frame in which GPA was collected would be beneficial for insight into sibling influence. Additionally, it would be helpful to obtain grade information over time and gather more information about family members. The stress that can be caused by family disruption and differing family roles should also be considered. Furthermore, it would be beneficial to investigate how siblings may influence each other in non-disrupted families compared to disrupted families among other family dynamics. Understanding how family dynamics have changed and continue to influence academics over time could educate the population and educational community about siblings and their impact on each other academically. In summary, the current findings do not provide any evidence indicating that the presence of a sibling living in the home during the ninth grade year of a student will influence GPA.

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**TABLE 1**

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**Descriptive Statistics  
Means and Std. Deviation for GPA**

---

**Table 1**

	<b>M</b>	<b>Std. Deviation</b>
<b>No Siblings</b>	<b>2.76</b>	<b>0.75</b>
<b>Siblings</b>	<b>2.84</b>	<b>0.90</b>
<b>Younger Sibling</b>	<b>2.83</b>	<b>0.93</b>
<b>Older Sibling</b>	<b>2.76</b>	<b>0.66</b>
<b>Older Brother</b>	<b>2.89</b>	<b>1.06</b>
<b>Older Sister</b>	<b>2.81</b>	<b>0.66</b>

**TABLE 2**

---

**ANOVA**  
**Influence of Siblings on GPA**

---

**Table 2**

	<i>df</i>	<i>f</i>	<i>p</i>
<b>Siblings vs. No Siblings</b>			
Between groups	120	0.915	0.659
Within groups	53		
<b>Number of Older siblings vs. Number of Younger Siblings</b>			
Between groups	120	1.038	0.448
Within groups	53	1.041	0.443
<b>Number of Older Brothers vs. Number of Older Sisters</b>			
Between groups	120	1.314	0.133
Within groups	53	0.662	0.967

*Note.* Significant at the  $p < 0.05$  level.

Correlation Coefficients between Predictor Variables

<b>Table 3</b>		<b>GPA</b>	<b>sex</b>	<b>older sisters</b>	<b>older brothers</b>	<b>siblings vs no siblings</b>	<b>younger siblings</b>	<b>older siblings</b>	<b>younger brothers</b>	<b>younger sisters</b>
<b>GPA</b>	1	.042	.027	.051	.025	.007	.058	.004	.006	
<b>sex</b>	.042	1	.017	.045	-.004	-.043	.046	-.200**	.101	
<b>number of older sisters</b>	.027	.017	1	-.100	.318**	-.051	.684**	-.070	-.010	
<b>number of older brothers</b>	.051	.045	-.100	1	.219**	-.199**	.658**	-.099	-.176*	
<b>siblings vs no siblings</b>	.025	-.004	.318**	.219**	1	.535**	.402**	.348**	.409**	
<b>number of younger siblings</b>	.007	-.043	-.051	-.199**	.535**	1	-.185*	.619**	.789**	
<b>number of older siblings</b>	.058	.046	.684**	.658**	.402**	-.185*	1	-.125	-.137	
<b>number of younger brothers</b>	.004	-.200**	-.070	-.099	.348**	.619**	-.125	1	.006	
<b>number of younger sisters</b>	.006	.101	-.010	-.176*	.409**	.789**	-.137	.006	1	

TABLE 3

## APPENDIX A

### LETTER FROM INSTITUTIONAL RESEARCH BOARD



Office of Research Integrity

September 29, 2014

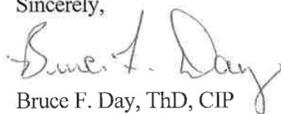
Sandra S. Stroebel Ph.D., NCSP  
Associate Dean / Program Director / Professor  
Marshall University College of Education and Professional Development  
School Psychology Program

Dear Dr. Stroebel:

This letter is in response to the submitted thesis abstract for Amanda Kipp entitled "*The Effect of Sibling Presence on Grade Point Average.*" After assessing the abstract it has been deemed not to be human subject research and therefore exempt from oversight of the Marshall University Institutional Review Board (IRB). The Code of Federal Regulations (45CFR46) has set forth the criteria utilized in making this determination. Since the information in this study does not involve human subjects as defined in the above referenced instruction it is not considered human subject research. If there are any changes to the abstract you provided then you would need to resubmit that information to the Office of Research Integrity for review and a determination.

I appreciate your willingness to submit the abstract for determination. Please feel free to contact the Office of Research Integrity if you have any questions regarding future protocols that may require IRB review.

Sincerely,



Bruce F. Day, ThD, CIP  
Director

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## APPENDIX B

### DATA COLLECTION SPREADSHEET SAMPLE

Example	GPA	Age	Sex	Older brother(s)/ Age(s)	Older sister(s)/Age(s)	Younger brother(s)/Age(s)	Younger sister(s)/Age(s)
Target student	GPA	Age	Sex	Older brother(s)/Age(s)	Older sister(s)/Age(s)	Younger brother(s)/Age(s)	Younger sister(s)/Age(s)
1							
2							
3							
4							
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## VITA

AMANDA KIPP

### Education

- 2015 Ed.S School Psychology Marshall University Graduate College  
Charleston, WV 25303
- 2013 Masters Psychology Marshall University Graduate College  
Charleston, WV 25303
- 2011 BA Psychology Miami University  
Oxford, OH 45056

### Related Work Experience

- 2012-2014 Psychometrician  
Pretera Center for Mental Health Services  
Huntington, WV
- 2011 Research Lab Manager  
Department of Psychology  
Miami University
- 2010-2011 Undergraduate Teaching Assistant  
Department of Psychology  
Miami University
- 2009 (summer) Group and Partial Therapy Assistant/ Intern  
Necco Center  
Pedro, OH
- 2008-2011 Undergraduate Research Assistant  
Department of Psychology  
Miami University

### General Skills

Computer Skills: Proficient with Microsoft Office, knowledge of SPSS, Coding abilities, experimenter experience.

### Research Presentations

Overbeck, A. J., Aldrich, J. S., Claypool, H. M., & Hall, C. E. (May 2011) *The Effect of Perceptual Fluency on Behavioral Mimicry*. Poster presented at the annual Miami University Undergraduate Research Forum and the annual Miami University Stephen Hinkle Memorial Poster session, Oxford, OH.

Ebersole, C. R., Rowe, S.A., Janusz, H.M., Mills, J.M., Overbeck, A.J., Aldrich, J.A., & Hall, C.E. (May 2011). The Chameleon in Love: The effect of relationship status on mimicry. Poster presented at the Psi Chi session of the annual meeting of the Midwestern Psychological Association, Chicago, IL.