

Perceived Differential Parental Expectations of Achievement: Assessing Impact on
Psychological Well-Being among College Students with Siblings

by

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Abstract

Parental expectation is a realistic belief or a judgment that a parent has about their children's future achievement (Glick & White, 2004; Yamamoto & Holloway, 2010). One factor that may influence parents' expectations about a child is their previous experience with their other children (Whiteman & Buchanan, 2002). This study investigated how parental expectations affect college students with siblings in a sample of 326 college students via an online survey that focused on the students' perception of parental expectations, academic comparison with siblings, depressive symptomatology, and self-esteem. There was a significant relation between having a high achieving sibling and parental differential expectations: students without a high achieving sibling were 2.43 times more likely to be expected by their parents to do as well as, if not better than, their sibling. There were also significant differences in depressive symptoms and self-esteem between students with lower perceived parental expectations but who self-rated as higher achieving than their sibling, and students with higher perceived parental expectations but who self-rated as lower achieving than their sibling. The former group of students reported lower numbers of depressive symptoms and higher self-esteem compared to the latter group of students. This suggests that perceived parental expectations of students' achievement relative to his or her sibling's achievement affects students' psychological well-being. The present findings indicate that future studies should explore the possible moderating or mediating effect of sibling's achievement on parental expectation in predicting college students' psychological well-being.

Keywords: differential parental expectations, high achieving sibling, depressive symptoms, self-esteem, academic achievement, sibling comparison, college students

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Family, being the first social unit a child is involved in, has long been viewed as the most important influence in children's and adolescents' lives. Within the family unit, parents and siblings have been shown to influence a child's development, and the outcomes differ from child to child. According to Jenkins and Bisceglia (2011), children can be exposed to very similar life experiences yet they will be affected by these experiences differently. However, the sibling differential experience can also be due to differential parenting.

Differential Parenting

Differential parenting has been shown to be linked to child adjustment (Feinberg, Neiderhiser, Simmens, Reiss, & Hetherington, 2000). For instance, one study showed that an increased perception of parents treating siblings differently was linked with decreased participants' achievement and more negative self-perceptions (Barrett Singer & Weinstein, 2000). Youthful populations who receive more discipline or less warmth from parents, compared to their sibling(s), report lower self-esteem and more internalizing symptoms (Shanahan, McHale, Crouter, & Osgood, 2008). These findings show that differential parenting may not have negative impact only on children's achievement but also on their psychological well-being.

In sibling relationships, children who experience more control and less warmth from parents report more sibling negativity and less sibling positivity (Shanahan et al., 2008). Few studies have examined the implications of differential parenting over time and found that the differential experiences are associated with poorer adjustment in future such as delinquency and increase in depressive symptoms (e.g., Conger & Conger, 1994; McGuire, Dunn, & Plomin 1985; Richmond, Stocker, & Rienks, 2005). Research also shows that in families in which parents treat

siblings differently with regard to affection and control, both “favored children” and “disfavored children” may have more negative self-perceptions and perform less well academically than children from more equitable families (Barrett Singer & Weinstein, 2000).

Interestingly, children fare poorly when there is more differential treatment in the home, even when they receive preferential treatment (Barrett Singer & Weinstein, 2000). One of the possible reasons could be that children who receive more attention from their parents are sometimes in need of additional support from their parents academically. This could lead to the development of negative self-perception in the child, and if he or she does not do well in school, there is a higher possibility that the child will attribute his or her failure internally, further reducing self-esteem. In addition, differential parenting is linked with more negative sibling relationships. Given that the quality of sibling relationships is positively associated with self-esteem, more negative sibling relationships could lead to lower self-esteem in both children (Barrett Singer & Weinstein, 2000). In sum, children who grow up within a family with more equitable parenting seem to perform better in school and have better self-esteem, which promotes their individual well-being.

For the purpose of this study, the focus is on students’ perceptions of differential parenting, in part because their perceptions may be just as influential or even more influential than the actual experiences (Jenkins & Bisceglia, 2011), and in part owing to logistical constraints on the ability to recruit parents for this study. Research shows that individuals’ own experiences may be equally important or more important than outsiders’ reported measures of the same experience (e.g., Daniels, Dunn, Furstenberg, & Plomin, 1985; Dunn & McGuire, 1994). In addition, students’ perceptions of parenting have also been found to be more accurate than parents’ self reporting, (Reiss et al., 1994) as well as more predictive of children’s academic

performance (Paulson, 1994).

Parental Expectations

Most researchers define “parental expectations” as realistic beliefs or judgments parents have about their children’s future achievement (e.g., Alexander, Entwisle & Bedinger, 1994; Glick & White, 2004; Goldenberg, Gallimore, Reese & Garnier, 2001; Yamamoto & Holloway, 2010). According to Englund, Luckner, Whaley, and Egeland (2004), in third grade, parents with higher expectations of their children’s academic achievement were more likely to be involved in their children’s school. Thus, those parents had higher achieving children in third grade. Parental expectations for their children’s academic achievement appear to be an important predictor of children’s academic achievement (Scott-Jones, 1995).

While active parental involvement in children’s academic lives predicts better achievement, high parental expectations also leads to negative outcomes such as psychological distress. Archer and Lamnin (1985) found that undergraduate students ranked “stress related to parental expectations” as second after “stress related to problems in intimate relationships.” Anderson and Yuenger (1987) reported that 24% of the student participants stated that stresses caused by the family is a “significant area of concern.” A study by Wang and Heppner (2002) on Taiwanese students revealed that living up to parental expectations is most strongly associated with students’ psychological distress.

One factor that may influence parents’ expectations for a target child is the parents’ previous experience with their other children (Whiteman & Buchanan, 2002). Whiteman and Buchanan (2002) found that parents who have a positive experience with an earlier born child tends to predict more positive expectations for a child with positive temperamental qualities. On the other hand, positive experience with an earlier born child did not always predict positive

expectations for the target child with negative temperamental characteristics. Expectations for a target child following a negative experience with an earlier born child were similar regardless of the child's temperament. Having high achieving older siblings who are also well-liked by other children provides parents with opportunities for basking in their children's achievements (Brody, 2004). According to Brody (2004), "basking is a phenomenon in which one's psychological well-being increases because of the accomplishments of persons to whom one is close." (p. 125) As such, it is shown that parental expectations for the subsequent children may change based on the parents' relationship and experiences with previous children.

Siblings

Siblings' high achievement may motivate children to achieve as well as their siblings if not better. One of the reasons is because older siblings may function as positive role models (Bouchey, Shoulberg, Jodl, & Eccles, 2010). However, siblings might also function as negative or antithetical role models that younger siblings strive to deidentify with (Bouchey et al., 2010).

Quality of the sibling relationship is positively associated with self-esteem (Barrett Singer & Weinstein, 2000). According to Colley (1902), Harter (1990, 1999), and Mead (1925, 1934), adolescents who have positive relationships with their siblings are more likely to develop feelings of self-worth, adequacy and self-confidence, leading to high self-esteem (as cited in Yeh & Lemper, 2004).

Purpose of the Present Study

Previous studies showed that the parent-child and sibling-child dyadic relationship have strong influence on a child's development. In addition, studies show that the parent-sibling-child triadic relationship affects the development of a child, specifically when examining differential parenting. However, there are limited studies about the transactional relationship between

parents and siblings that may be related to the overall psychological well-being of a child. Thus, the goal of the present study is to investigate college students' perception of parental differential expectations between themselves and their high-achieving siblings, and the associations between their perceptions and their development outcomes in terms of self-esteem and possible depressive symptomatology. I predict that parental differential expectations will be associated with one or more student outcomes (i.e., depressive symptoms and self-esteem), and that this effect will be moderated (as an interaction with) sibling's level of achievement.

Method

Participants

To be eligible to participate in this study, participants had to be above 18 years of age and must have at least one sibling. A total of 326 introductory psychology students (120 males and 206 females) from a large Midwestern university participated in this study. Age ranged from 18 years to 30 years, with a mean age of 18.65 years ($SD = 1.01$). Of the original 326 students, one male and 1 female did not meet the study requirements. Therefore, all subsequent analyses are based on a total of 324 participants (119 males and 205 females). The racial background of the participants was 76.2% Caucasian, 15.1% Asian (8.3% East Asian, 4.3% South Asian, 2.5% South East Asian), 3.1% Black, 2.5% Hispanic, 0.3% Pacific Islander, and 2.8% multi-racial.

Measures

Demographic information. Participants reported their sex, age, ethnicity, family configuration (e.g., "Who lives in your home?"), birth order, number of siblings, sibling's age, sibling's sex, sibling's level of education, and the level of education of the participant's parents.

High achieving sibling. Participants answered a Yes/No question on whether they have any high achieving sibling (e.g., "Is your sibling a high achiever?") and if they answered "Yes"

to the first question, they will be prompted with a follow up question about what field they think that their sibling is having high achievement at (e.g., “If yes, in what field?”)

Sibling achievement comparison. Participants were asked to compare themselves with their siblings with a list of questions targeting on different domain such as academics, sports, music, and social skills. For each domain, participants were asked to respond to who is better (i.e., “*My sibling*”, “*Both of us are of the same*”, “*Me*”).

Parental expectations. Parental expectation was assessed by a single Yes/No item (e.g., “Do your parents expect you to be as good as your sibling if not better?”).

Self-esteem. Self-esteem was measured with the Rosenberg Self-Esteem scale (RSES; Rosenberg, 1965). The RSES is a 10-item self-report measure that assesses the level of self-esteem. Participants were asked to respond on how much they agree or disagree with each item (e.g., I feel that I’m a person of worth, at least on an equal plane with others). All the items are answered on a 4-point Likert scale, ranging from *strongly agree* to *strongly disagree*. Evidence for the construct validity of the RSES has been reported in Rosenberg (1965). In the present sample, the internal reliability for RSES was .89. Higher scores generally indicate higher level of self-esteem.

Depressive Symptoms. The Beck Depression Inventory was used to assess depressive symptoms (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI is a 21-item self-report measure that assesses the symptoms of depression. Participants were asked to rate the extent to which they have experienced specific depressive symptoms across a 4-point Likert scale (e.g., 0 = *I do not feel sad* to 3 = *I am so sad and unhappy that I can't stand it*). Evidence for reliability (test-retest) and the construct validity of the BDI has been reported in Beck, Steer, and Garbin (1988). In the present sample, the internal reliability for BDI was .86. Higher scores

generally indicate higher level of depressive symptomatology. To avoid potential complications, the item on suicidal ideation was removed from the study as requested by the regulatory committee.

Procedure

Ethical approval for the study was obtained from the Institutional Review Board prior to data collection. Participants were recruited via the Department of Psychology Subject Pool. The study measures were administered online via Qualtrics. All the participants completed the survey as part of their course requirement. Of the initial 326 students who participated, two did not fulfill the study requirements, and thus their responses were subsequently dropped from the study. This left a total of 324 participants for the present study whose responses were used in subsequent analyses. To protect participant's anonymity, each participant was randomly assigned a participant identification number. Additionally, prior to the start of the study, all participants signed the informed consent forms, which indicated that all the study data will be kept confidential. Throughout the study, participants were instructed to complete the study with only one sibling relationship in mind.

Results

Correlations, means, and standard deviations for all study measures are presented in Table 1. Having a high achieving sibling was found to be negatively related to perceived parental expectations, sibling achievement comparison, and sibling sports comparison. Perceived parental expectations were positively associated with sibling academic comparison and depressive symptoms. Sibling academic comparison was positively related to self-esteem but negatively related to sibling social skills comparison. Sibling sports comparison is positively associated with sibling social skills comparison. Lastly, as expected, self-esteem was negatively related to

depressive symptoms.

A chi-square test of independence was performed to examine the relation between having a high achieving sibling and parental differential expectation. There was a significant relation between these variables, $\chi^2(1, N = 324) = 9.48, p = .002$. Students without a high achieving sibling were 2.43 times more likely to be expected by their parents to do as well as if not better than their sibling.

A two-factor ANOVA examining the effects of parental expectations and students having a high achieving sibling on college students' depressive symptoms yielded a main effect for parental expectations, $F(1, 323) = 7.35, p = .033, \eta_p^2 = .014$, such that students without high perceived parental expectations ($M = 4.61, SD = 4.51$) had less depressive symptoms than students with high parental expectations ($M = 6.01, SD = 5.74$). The main effect of students having a high achieving sibling and the interaction effect were not significant. A two-factor ANOVA examining the effects of parental expectations and students having a high achieving sibling on college students' self-esteem did not yield any significant results for both of the main effects and interaction effect.

A two-factor ANOVA examining the effects of parental expectations and academic achievement comparison between student and sibling on college students' depressive symptoms yielded a main effect for parental expectations, $F(1, 322) = 7.35, p = .007, \eta_p^2 = .023$, such that students without high perceived parental expectations ($M = 4.61, SD = 4.51$) had less depressive symptoms than students with high parental expectations ($M = 5.96, SD = 5.72$; see Figure 1). Although the main effect of sibling academic achievement comparison and the interaction effect were insignificant, a one-way ANOVA found a significant difference in depressive symptoms between students who perceived their parents to have lower expectations compared to their

sibling but reported performing better than their sibling in academics ($M = 4.33$, $SD = 4.27$), and students who perceived their parents to have higher expectations compared to their sibling, but reported performing worse than their sibling in academics ($M = 7.48$, $SD = 4.51$) with $F(1, 113) = 10.95$, $p = .001$, $\eta_p^2 = .090$ (see Figure 2).

A two-factor ANOVA examining the effects of parental expectation and academic achievement comparison between student and sibling on college students' self-esteem yielded a main effect for parental expectation, $F(1, 322) = 4.00$, $p = .046$, $\eta_p^2 = .012$, such that students without high perceived parental expectations ($M = 23.42$, $SD = 4.93$) had higher self-esteem than students with high perceived parental expectations ($M = 22.63$, $SD = 5.58$). The main effect of academic achievement comparison, $F(2, 321) = 5.55$, $p = .004$, $\eta_p^2 = .034$, was significant as well, such that students who rated their sibling a *higher achiever* ($M = 21.93$, $SD = 5.12$) had lower self-esteem than students who rated their sibling a *lower achiever* ($M = 23.78$, $SD = 4.96$; see Figure 3). Although the interaction effect was insignificant, a one-way ANOVA found a significant difference in self-esteem between students who perceived their parents to have lower expectations compared to their sibling but reported performing better than their sibling in academics ($M = 24.08$, $SD = 4.66$), and students who perceived their parents to have higher expectations compared to their sibling, but reported performing worse than their sibling in academics ($M = 21.04$, $SD = 5.32$) with $F(1, 113) = 8.20$, $p = .005$, $\eta_p^2 = .069$ (see Figure 4).

Discussion

In this study, we explored the association between differential parental expectations, having high achieving siblings, students' achievement, depressive symptoms, and self-esteem among undergraduate college students with at least one sibling. Previous research (e.g., Barrett Singer & Weinstein, 2000; Feinberg et al., 2004; Shanahan et al., 2008) has implicated that

differential parental treatment leads to poor psychological adjustment in children regardless of whether they receive a better or worse treatment than their siblings. Additionally, studies have also found that parental expectation is positively related to children's achievement (e.g., Englund et al., 2000; Scott-Jones, 1995) but negatively related to children's psychological well-being (e.g., Anderson & Yuengler, 1987; Archer & Lamnin, 1985; Wang & Heppner, 2002). Studies that look into the influence of siblings on each other found that siblings can have a great impact on one another, especially regarding self-esteem and achievement. However, the present study is novel in investigating the relationship between having high achieving siblings and parental differential expectations and how that relationship affects college students' achievement, depressive symptoms, and self-esteem. Consequently, this study addresses an important gap in the literature by examining multiple relationships among parents, siblings, and college students.

In support of the hypotheses, the results of this study revealed that siblings' achievement is associated with perceived parental differential expectations on students. However, the direction of the relationship was unexpected. We hypothesized that students with a high achieving sibling would perceive their parents to expect them to do as well as if not better than their sibling, but the relationship turned out to be the opposite. In fact, students with a high achieving sibling did not perceive their parents to expect them to do as well as if not better than their sibling. Based on the χ^2 Test of Independence, students without a high achieving sibling are more likely to perceive their parents to have higher expectations on them than their sibling. Although the reasons for this are unclear, one speculation is that this might be due to the "basking phenomenon" proposed by Brody (2004). Parents often want to "show off" their children's accomplishments and if there are not children in the family that are doing well, parents will put their high expectations on the child that has better potential to do well. By contrast, if

there is already a child in the family that has high achievement parents will maintain the expectations on that particular child and not extend the expectations on other children since the parents already have a child's achievement that they can "bask in."

Parallel to Englund et al. (2000) and Scott-Jones (1995), the results also showed that parental expectation is positively related to children's achievement. One the reasons that parental expectations predicts students' achievement is that most parents who have high expectations on their children's achievement are generally more involved in their children's education (Englund et al, 2000). Another possible reason for the relationship between perceived parental expectations and children's achievement is that parents that have high expectations of achievement on their children usually have higher education background than those with low expectations of achievement on their children (Davis-Kean, 2005). According to Davis-Kean (2005), parents' education has significant impact on their children's achievement, as parents with higher education tend to have greater achievement expectations and they also will provide more cognitive stimulation in the home to support the development of their children.

Although parental expectation has positive effects on children's academic achievement, parental expectations of students' achievement is negatively related to children's psychological well-being. Similar to studies that looked into the relationship between parental expectation and students' psychological adjustment (e.g., Anderson & Yuengner, 1987; Archer & Lamnin, 1985; Wang & Heppner, 2002), the results of this study showed that students that did not perceive their parents to have higher expectations on them than their siblings have less depressive symptoms than their counterparts who perceived their parents to have higher expectations on them than their sibling. As proposed by Wang and Heppner (2002), living up to the parental expectations is one of the reasons for students with high expectations from their parents to have greater

psychological distress.

Interestingly, the relationship between parental expectations and students' self-esteem was negatively correlated. While most studies have shown that parental involvement are correlated to children's self-esteem (e.g., Gecas, 1971; Rosenberg, 1965) thus predicting children's higher achievement (Lane, Lane, & Kyprianou, 2004), we are still uncertain of the direction of the effect between parental expectations, students' self-esteem, and students' achievement. Students' self-esteem can be a good predictor of students' achievement, but students' achievement is also a factor that influences their self-esteem. In addition, parents' expectations can be a good predictor of students' achievement and students' self-esteem, but if students fail to live up to their parents' expectations, it can have detrimental effect on their self-esteem.

The hypothesis of high achieving sibling as a moderator of the relationship between differential parental expectations and psychological outcomes (i.e., depressive symptoms and self-esteem) was not supported in the present study. Nevertheless, the results showed a potential moderating effect of high achieving sibling between differential parental expectations and psychological outcomes. Students who perceived their parents to have lower expectations compared to their sibling but reported performing better than their sibling in academics showed lesser depressive symptoms than students who perceived their parents to have higher expectations compared to their sibling, but reported performing worse than their sibling in academics. As mentioned in Wang and Heppner (2002), it is living up to the perceived parental expectations that is most strongly associated with students' psychological distress rather than the perceived parental expectations per se. As such, students who were expected to do as well as (or better) than their siblings, but failed to meet the expectations, will have greater depressive

symptoms since they were unable to fulfil their parents' expectations. This failure to fulfill parental expectations leads to greater emotional vulnerability such as depression. Moreover, studies that examined the implications of differential parenting (e.g., Conger & Conger, 1994; McGuire, Dunn, & Plomin, 1985; Richmond, Stocker, & Reinks, 2005) showed that children with differential experiences are associated with poorer adjustment in future. On the other hand, for those students who were not expected to do as well as if not better than their sibling but managed to perform well, it helped them cope with less parental control. However, this is not entirely consistent with the research by Barrett Singer and Weinstein (2000), which suggested that both favored and disfavored children, with regards to differential parenting, may perform less well academically than children from a more equitable family. While I am unsure of the reason for the trend in the present study, one plausible explanation could be that the students in this sample considered themselves as high achievers, and thus they do not have the pressure to outperform their siblings.

Furthermore, students who perceived their parents to have lower expectations compared to their sibling but reported performing better than their sibling in academics had higher self-esteem than students who perceived their parents to have higher expectations compared to their sibling, but reported performing worse than their sibling in academics. Similar to the relationship between differential parental expectations, students' academic achievement, and depressive symptoms, living up to the perceived parental expectations might explain the differences in self-esteem between students with higher parental expectations but did worse than their sibling and students with lower parental expectations but did better than their sibling. Additionally, research shows that students with differential experience, regardless of whether or not they were favored or disfavored students, may have more negative self-esteem and perform less well academically

than students who came from a more equitable family (Barrett Singer & Weinstein, 2000). Besides that, students who have higher expectations but did not meet those expectations may attribute their failure internally, further reducing their self-esteem. Taken together, these two reasons provide one of the most compelling explanations for students who are expected by their parents to do as well as if not better than their siblings academically but did not meet the expectations, to have lower self-esteem than those who are not expected by their parents to do as well as if not better than their siblings academically but did well in academically. Having said that, we are still unsure of the direction of relationship between self-esteem and achievement as self-esteem can be seen as a predictor of students' achievement yet it can be seen as an effect of poor academic performance.

Limitations

Although this study has many interesting findings, there are features that limit the generalizability of these findings. One of the strongest limitations is the use of cross-sectional and correlational method for the study. As this study is only based on students' reflections of their own experiences, the information might not be accurate and I am only able to examine the hypothesis with one time point. In addition, due to the correlational nature of the study, I am unable to conclude the direction of the relationship between sibling's achievement, parental differential expectations, and college students' psychological adjustments.

In addition, as this study was conducted at a highly ranked Midwestern university, most participants in this study are already above average in their academic achievement. As such, it would be interesting to evaluate the findings of this study in diverse post-secondary settings.

While in this study I asked the participants to focus on only one sibling throughout the survey, I am not sure whether the impact can be generalized to students who have different

numbers of siblings. Additionally, the study did not control for the effects of birth order, thus the results may not be generalizable to different birth order as well.

Undeniably, while the sample for this study is predominantly Caucasian American, there are cultural differences in parenting. Thus, it would be imperative to evaluate the generalizability of the present findings to other ethnicities (e.g., African Americans, Hispanic Americans, Asian Americans, Native Americans, etc.). For the present study, the sample was not subdivided into different ethnic groups before analyses because each ethnicity was not equally represented in the sample. As parenting issues occur throughout the world, it would be vital to look into the generalizability of the present findings outside on the United States.

Concluding Thoughts

Despite the limitations, the findings of this study add to the literature of the transactional relationship between parents, siblings, and students. The findings indicate that future studies should explore the possible moderating and/or mediating effect of siblings' achievement parental expectations in predicting college students' psychological well-being. Research shows the importance of studying the contexts in which child development occurs and family has always been considered one of the major factors that contribute to child development. If further research can be done within this domain, better parenting interventions can be developed for parents to better understand their children as unique individuals. Parents will also be able to tailor their parenting styles to their children's needs. As children's and youths' mental health issues are constantly changing, it is essential to examine the protective factors as well as the risk factors that exist, so that a more comprehensive and effective intervention can be developed to address the mental health problems among the younger generations.

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Table 1

Correlations between measures of High Achieving Sibling, Perceived Parental Expectations, Sibling Academic Comparison, Sibling Music Comparison, Sibling Sports Comparison, Sibling Social Skills Comparison, Self-esteem, and Depressive Symptoms in College Students.

Measures	1	2	3	4	5	6	7	8
1. High Achieving Sibling	–							
2. Perceived Parental Expectations	-.17**	–						
3. Sibling Academic Comparison	-.30***	.13*	–					
4. Sibling Music Comparison	-.09	.00	-.00	–				
5. Sibling Sports Comparison	-.16**	.02	.00	-.02	–			
6. Sibling Social Skills Comparison	-.03	-.00	-.16**	-.03	.16**	–		
7. Self-esteem	-.00	-.08	.14*	-.05	-.08	.11	–	
8. Depressive Symptoms	-.08	.13*	-.08	.08	.04	-.08	-.60***	–
Range	0 – 1	0 – 1	1 – 4	1 – 4	1 – 4	1 – 3	1 – 30	0 – 31
<i>M</i>	.80	.51	2.39	2.28	2.09	2.03	22.98	5.32
SD	.40	.50	.82	1.01	.91	.82	5.33	5.21

Notes. $N = 324$

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

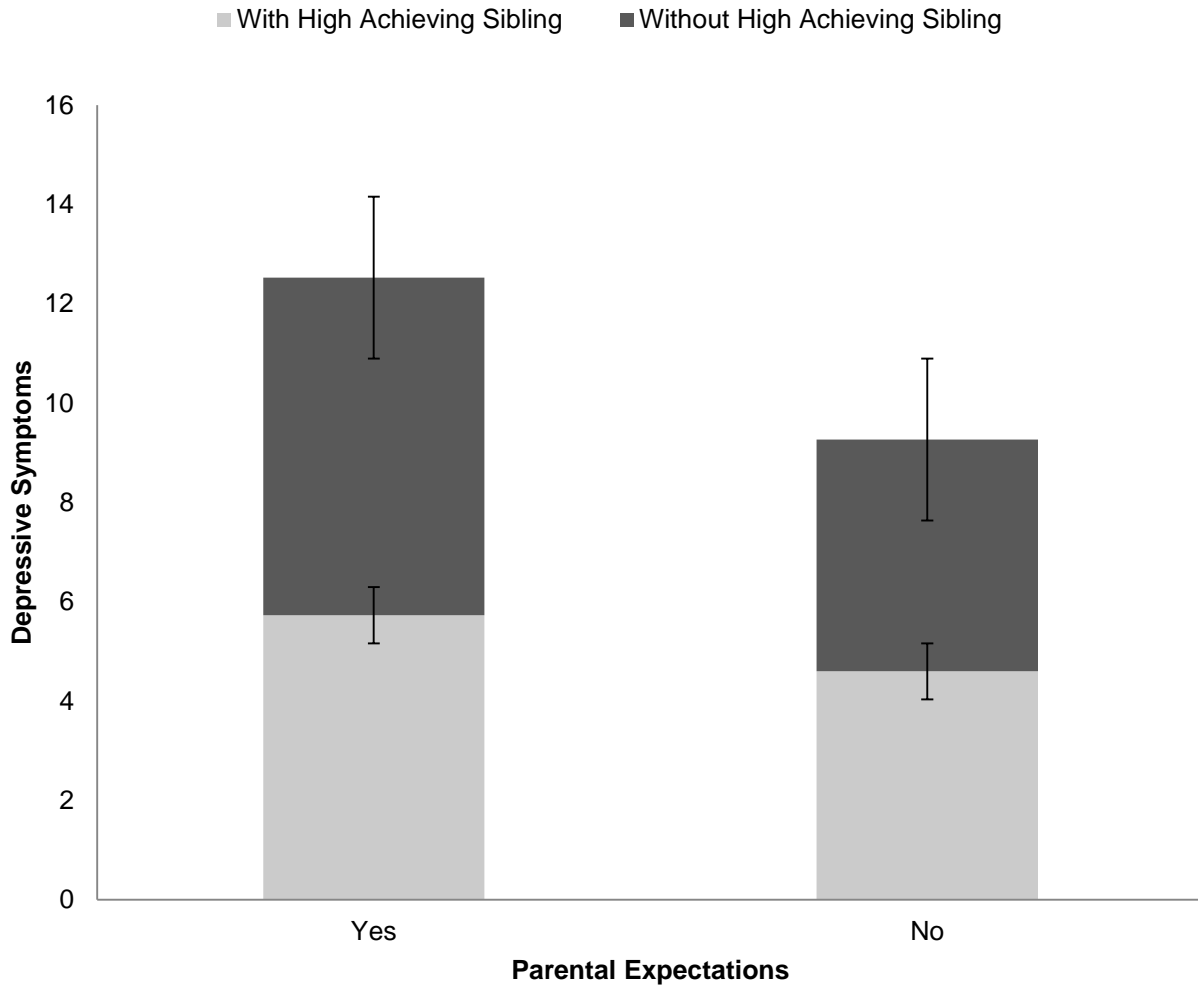


Figure 1. The effect of the presence of high achieving sibling on depressive symptoms between students who perceived their parents expected them to be as good as if not better than their sibling and students who perceived their parents did not expect them to be as good as if not better than their sibling. Students with higher parental expectations reported higher depressive symptoms compared to students with lower parental expectations. Error bars indicate standard errors.

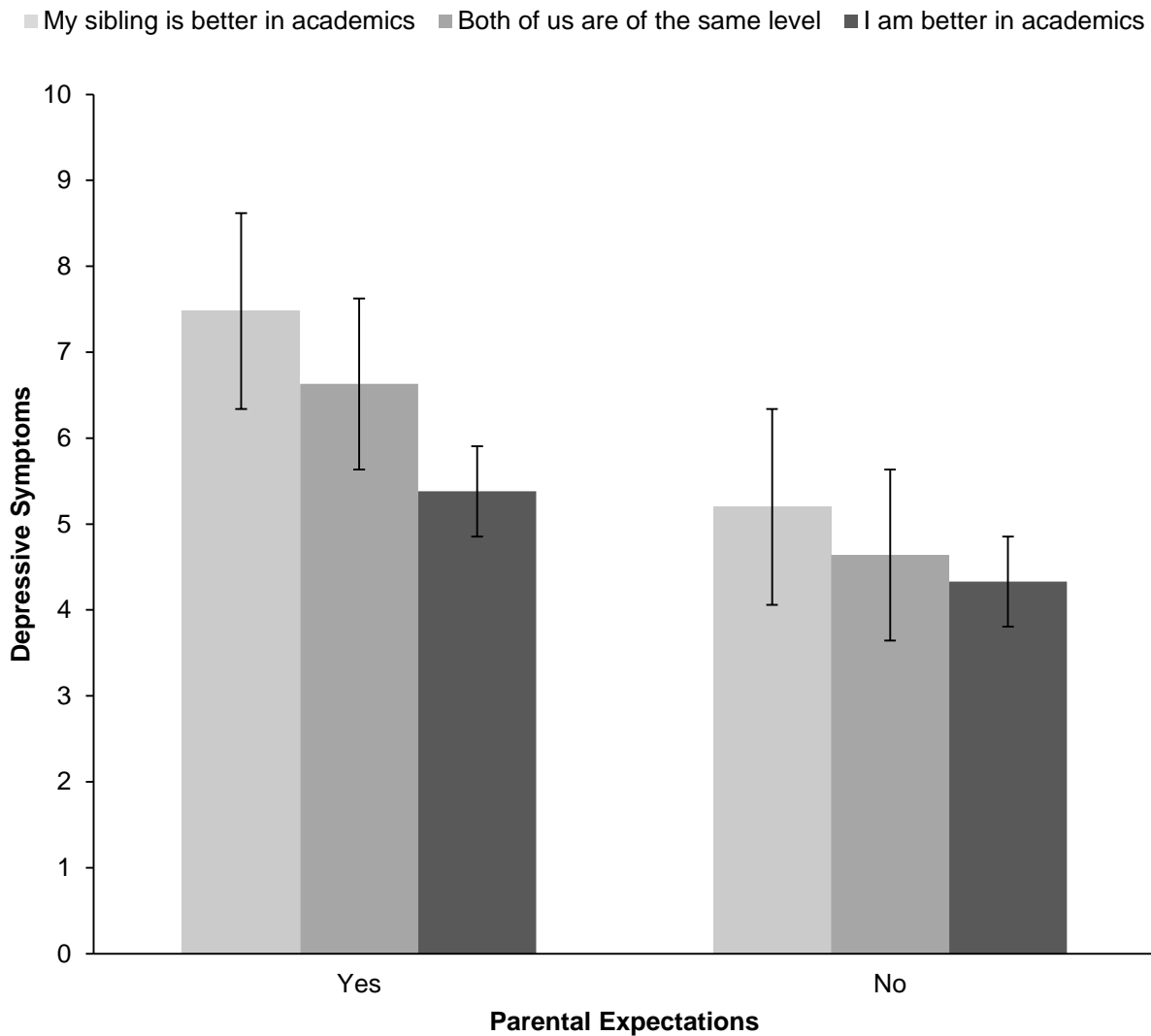


Figure 2. The effect of sibling academic achievement comparison on depressive symptoms between students who perceived their parents expected them to be as good as if not better than their sibling and students who perceived their parents did not expect them to be as good as if not better than their sibling. There was a significant difference in depressive symptoms between students who perceived their parents to have lower expectations compared to their sibling but reported performing better than their sibling in academics, and students who perceived their parents to have higher expectations compared to their sibling, but reported performing worse than their sibling in academics. Error bars indicate standard errors.

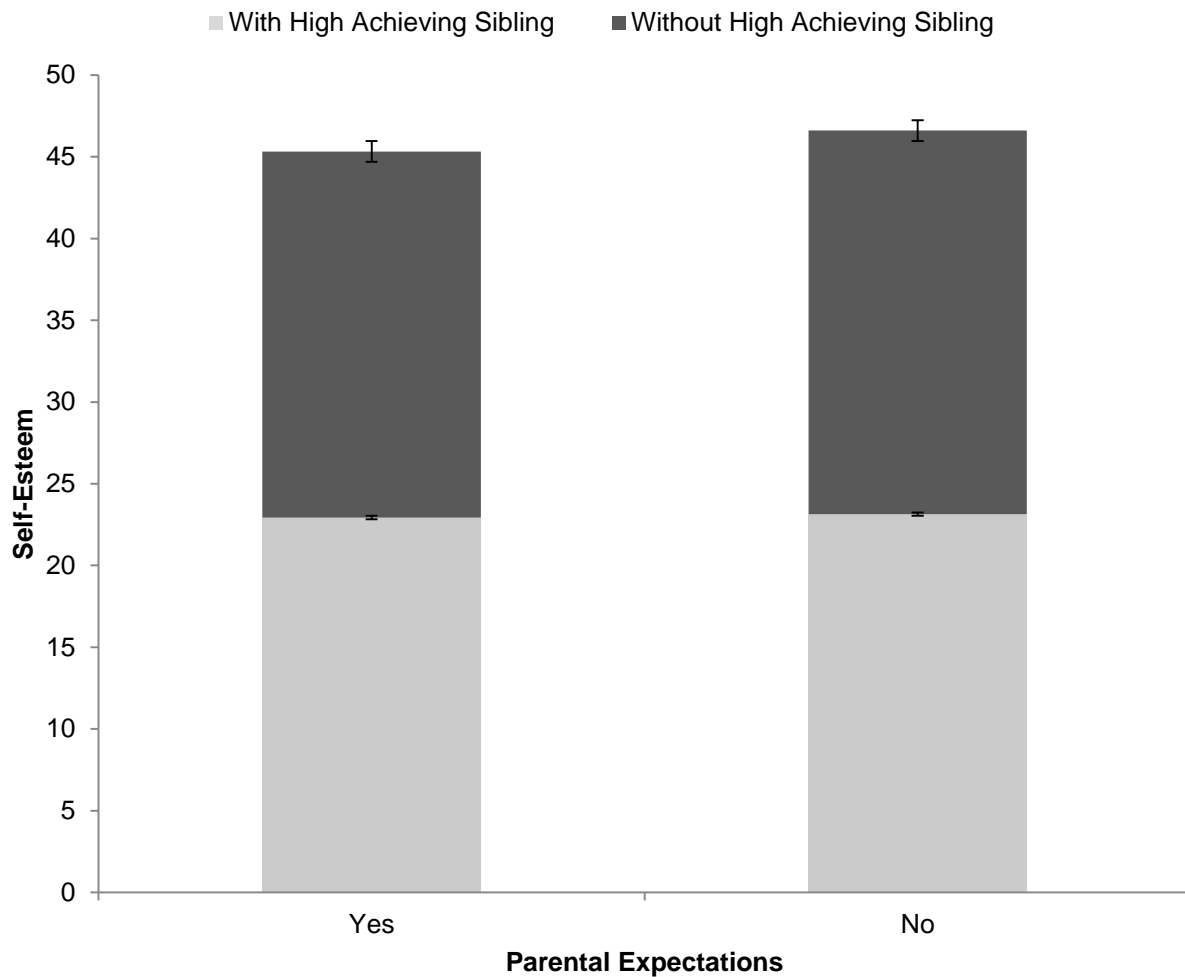


Figure 3. The effect of the presence of high achieving sibling on self-esteem between students who perceived their parents expected them to be as good as if not better than their sibling and students who perceived their parents did not expect them to be as good as if not better than their sibling. There were no significant differences in self-esteem between students with higher parental expectations and students with lower parental expectations. Also, there were no significant differences in self-esteem between students who perceived their parents expected them to be as good as if not better than their sibling and students who perceived their parents did not expect them to be as good as if not better than their sibling. Error bars indicate standard errors.

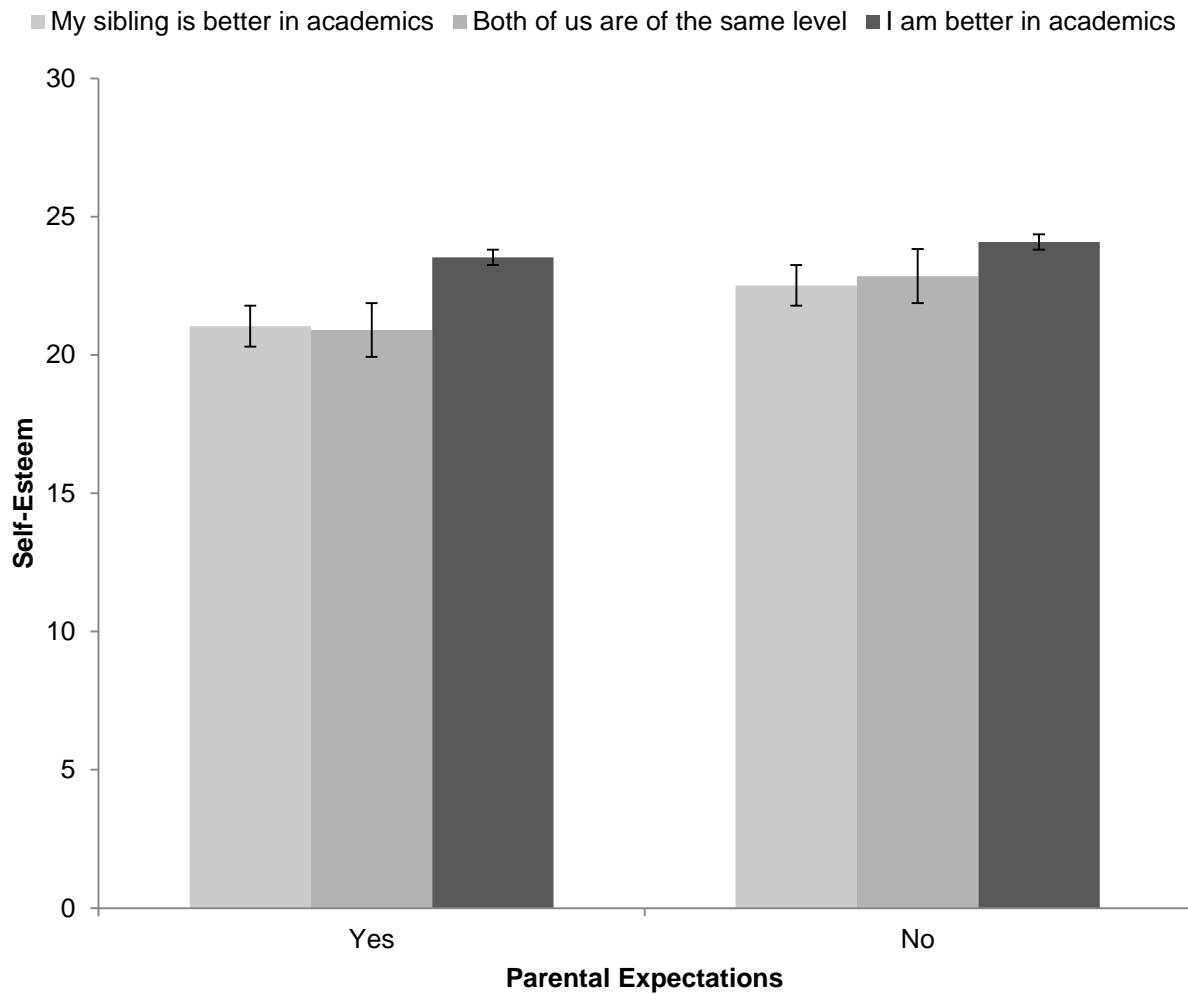


Figure 4. The effect of sibling academic achievement comparison on self-esteem between students who perceived their parents expected them to be as good as if not better than their sibling and students who perceived their parents did not expect them to be as good as if not better than their sibling. There was a significant difference in self-esteem between students who perceived their parents to have lower expectations compared to their sibling but reported performing better than their sibling in academics, and students who perceived their parents to have higher expectations compared to their sibling, but reported performing worse than their sibling in academics. Error bars indicate standard errors.