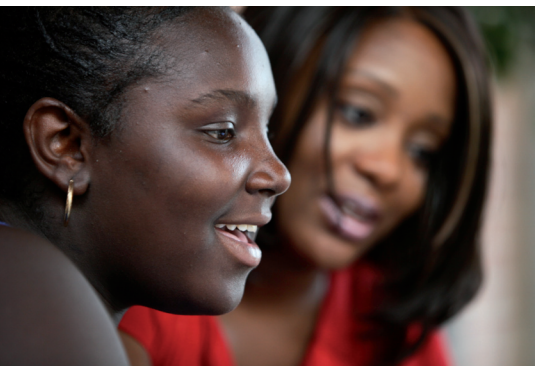




Big Brothers Big Sisters Report to America

Positive Outcomes for a Positive Future



2013 Youth Outcomes Report

Acknowledgements

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The Youth Outcome Survey results are based on the proprietary practices implemented by Big Brothers Big Sisters of America, including Big Brothers Big Sisters of America's Service Delivery Model, and are a reflection of Big Brothers Big Sisters of America and its Affiliate's strict adherence to national standards. Accordingly, while we encourage that these results be shared, they must at all times be attributed to Big Brothers Big Sisters of America and are not to be used in connection with the activities of other organizations without the express written permission of Big Brothers Big Sisters of America.

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America at a Crossroads

Today we find our country facing unprecedented problems. Growing up in America is a challenge for far too many youth. We have all read the news stories about our nation's increasing poverty levels, our epidemic of high school dropout, rampant violence in our neighborhoods and our schools, and young people growing up in isolation from their peers and community. And while our youth face untold hardships, they also hold the promise for the future of our nation.

Our Part of the Solution

As the nation's oldest and largest mentoring organization, we have a critical role in helping communities solve these seemingly intractable societal problems through investing in our young people. Our proven programs can help address many of the challenges facing America's youth. Dedicating ourselves toward that end, Big Brothers Big Sisters made a bold commitment in 2011:

We partner with parents/guardians, volunteers, and others in the community and hold ourselves accountable for each child in our program achieving results in three outcome areas: (1) Higher aspirations, greater confidence, and better relationships; (2) Avoidance of risky behaviors; and (3) Educational success.

With this evaluation report, Big Brothers Big Sisters shows our collective, nationwide progress and evidence of success in these areas.

Our success is defined by the outcomes we achieve for children (impact), the increased number of children we impact (scale), and the community benefits created when children achieve lifelong success.

— *Big Brothers Big Sisters 2011-2014 Nationwide Strategic Direction: "Putting our children on the path to success"*






Our proven programs can help address many of the challenges facing America's youth.

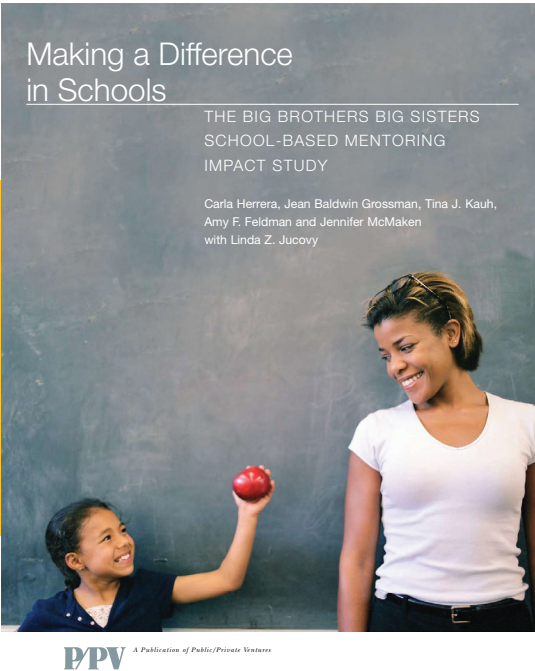
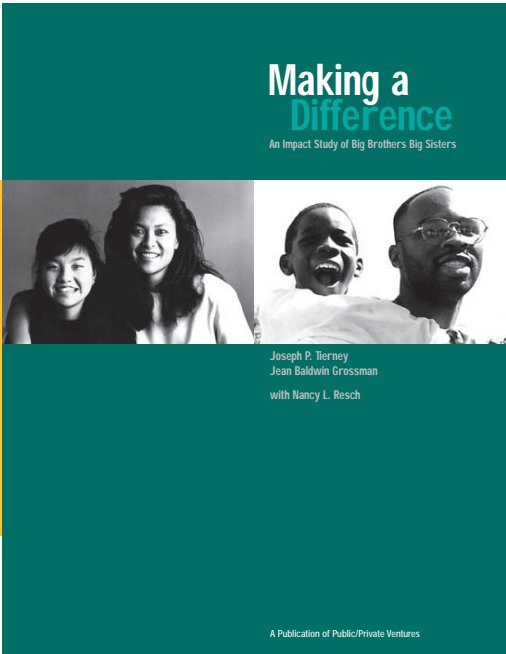


What Does the Existing Research Say?

Big Brothers Big Sisters offers effective mentoring programs that improve the lives of our nation's youth. These programs deeply engage communities through collaboration with families, mentors, community funders, schools and other partners. Both our community and school-based programs have positive outcomes for youth in a broad range of outcome areas as demonstrated by rigorous community- and school-based impact studies conducted by Private/Public Ventures.¹ These studies concluded that unlike other more narrowly-focused interventions for youth, Big Brothers Big Sisters programs can positively impact the whole child, across multiple domains of youth development.

Big Brothers Big Sisters' proven outcomes include:

 educational success	 risk behaviors avoided/reduced	 socio-emotional competency
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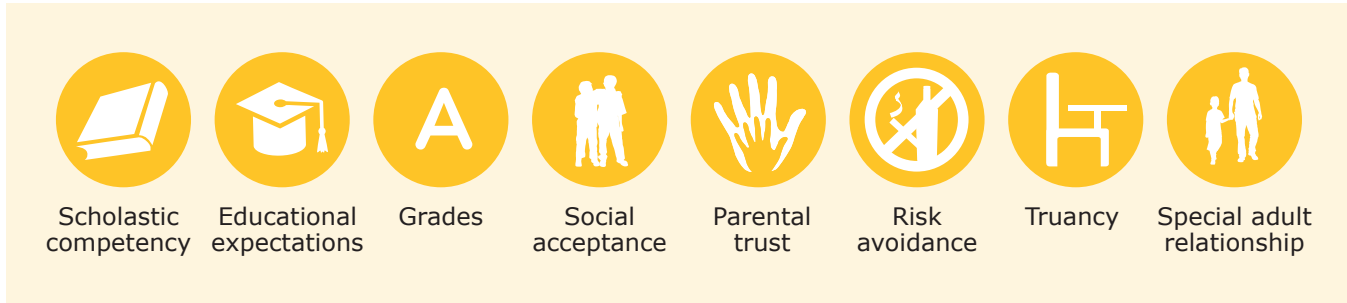


¹ See Herrera, C., et al (2007) and Grossman, J. B., & Tierney, J. P. (1998).



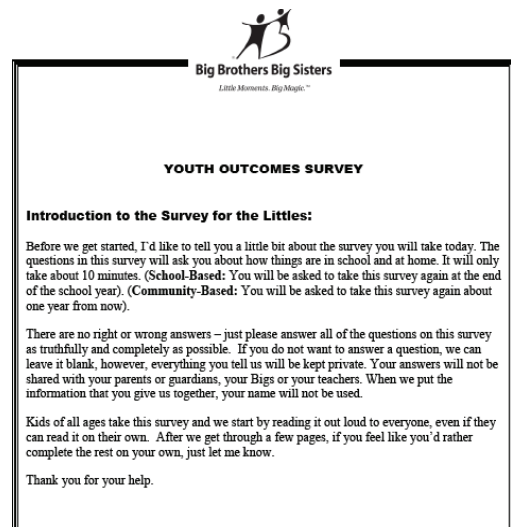
What is the Youth Outcomes Survey?

Data represented in these analyses were collected through the Big Brothers Big Sisters Youth Outcomes Survey (YOS) which is made up of eight (8) measures:²



The YOS, a critical component of our outcomes evaluation system, is collected before a youth (age nine and older) is matched with a volunteer. It is collected again at the end of the school year for youth in our school-based (SB) program and every 12 months in our community-based (CB) program. We refer to these two time points as the baseline and follow-up. The baseline represents the youth's well-being before they are matched with a volunteer and the follow-up represents the youth's well-being after they are matched with a volunteer for a school year (SB) or 12 months (CB).

Data are not collected from matches that close before the end of the school year in SB programs or before 12 months in CB programs. Analyses in this report include youth who had both baseline and follow-up surveys completed. Therefore, of the total youth served in each program, the full set of data used in this report represents 83% of the youth enrolled in the SB program that remained matched until the end of the school year and 68% of the CB youth who remained matched at 12 months. Given the fact that youth in closed matches are not reflected in this sample and that not all youth had both surveys, our sample isn't fully representative of all youth served. We can only conclude that these data are suggestive of our positive outcomes. We are working to improve our rates of survey completion and investigating ways to collect data from closed matches so that we have a more representative sample in future reports. For data comparing our sample to all youth served in Big Brothers Big Sisters, please see the appendix.

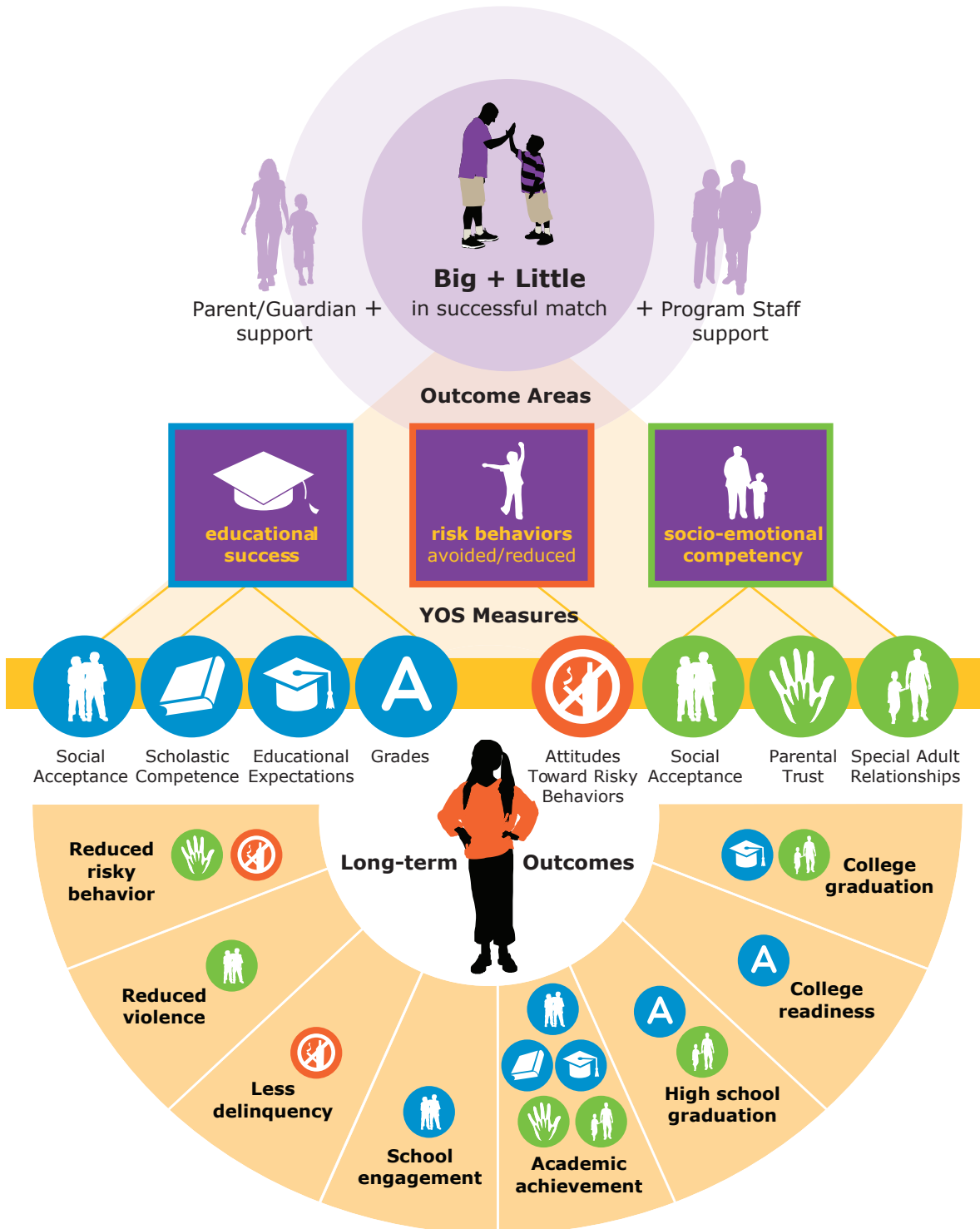


² We are currently testing a revised truancy measure through funding from OJJDP due to this year's truancy measure not being a reliable or valid measure of skipping behaviors. See the appendix for more information on all seven other measures.



How Do Our Outcomes Relate to Long-Term Success?

The areas measured in the Youth Outcomes Survey are linked to long-term outcomes important to families, our communities, and our nation. See Appendix 2 (p. 36) for research evidence to support these associations.



What do the Data Tell Us?

We analyzed the data to answer the following evaluation questions:

- 1 How do mentored youth compare to similar, same-aged youth who have not been mentored?
- 2 Do youth improve after one year (or school year) of mentoring?
- 3 Do youth in matches for multiple years improve, stay the same, or decline?
- 4 Do youth in two-year matches have significantly improved outcomes compared to youth in one-year matches?



1

How Do Mentored Youth Compare to Similar, Same-Aged Youth Who Have Not Been Mentored?

To answer this question, we looked at youth matched for one year and compared them with their same-age peers just before getting matched. We took the follow-up results from one-year (school-year) matches and compared them to the baseline results from youth the same age who had not yet been matched. We used a procedure called propensity score matching to make the two samples as similar as possible.

We found positive differences across a breadth of youth outcome areas, in both community-based and school-based matches.

The magnitude of these differences and/or the extent of these differences varied based on the youth's age. Middle-school youth, for instance, reported doing better than their same age peers in all seven outcome areas in both school and community-based matches. Interestingly, the largest differences were found for Scholastic Competence and Social Acceptance across both programs. And the positive effect on Educational Expectations appeared to be greater in school-based matches than in community-based matches while the opposite appeared to be true for Parental Trust and Attitudes Toward Risky Behaviors. While having a Special Adult appeared to be a stronger finding in community-based relationships, this was largely due to fewer Littles saying they had a Special Adult before being matched than their school-based counterparts.

Effect Size ● Small ● Small-Medium ● Medium-Large

	Community-based			School-based		
	Ages 9-11	Ages 12-14	Ages 15+	Ages 9-11	Ages 12-14	Ages 15+
Social Acceptance	●	●	●	●	●	●
Scholastic Competence	●	●	●	●	●	●
Educational Expectations	●	●	--	●	●	--
Grades	--	●	●	●	●	●
Attitudes Toward Risky Behaviors	●	●	●	--	●	●
Parental Trust	●	●	●	●	●	--
Special Adult	●	●	●	●	●	●


















2

Do youth improve after one year (or school year) of mentoring?

To answer this question, we looked at youth in both community- and school-based programs and compared their scores at the end of one year (or school year) of mentoring to their scores just before being matched. Unlike the analyses we used to address the last question, these analyses do not compare youth improvements to those experienced by youth who did not receive mentoring.

Again, we found improvements spanning a number of youth outcome areas, in both community-based and school-based matches.

The data suggested similar levels of positive change in both programs in a number of different outcome areas with the largest gains in Social Acceptance and Scholastic Competence. However, we saw improvement in Attitudes Toward Risky Behaviors and Parental Trust for community-based matches when this change was not apparent or very small in school-based matches. We also saw improvement in Grades for school-based matches but not for community-based matches. Again, positive change in Special Adult Relationships appeared to be greater in community-based relationships, but this was largely due to fewer Littles saying they had a Special Adult before being matched than their school-based counterparts. We also explored potential differences in gains among youth of different genders as well as race/ethnicity. For these detailed results, see Appendix 2 (p.25).

	Effect Size		
	Community-based	School-based	
Social Acceptance			 Small  Small-Medium  Medium-Large
Scholastic Competence			
Educational Expectations			
Grades	--		
Attitudes Toward Risky Behaviors		--	
Parental Trust			
Special Adult			

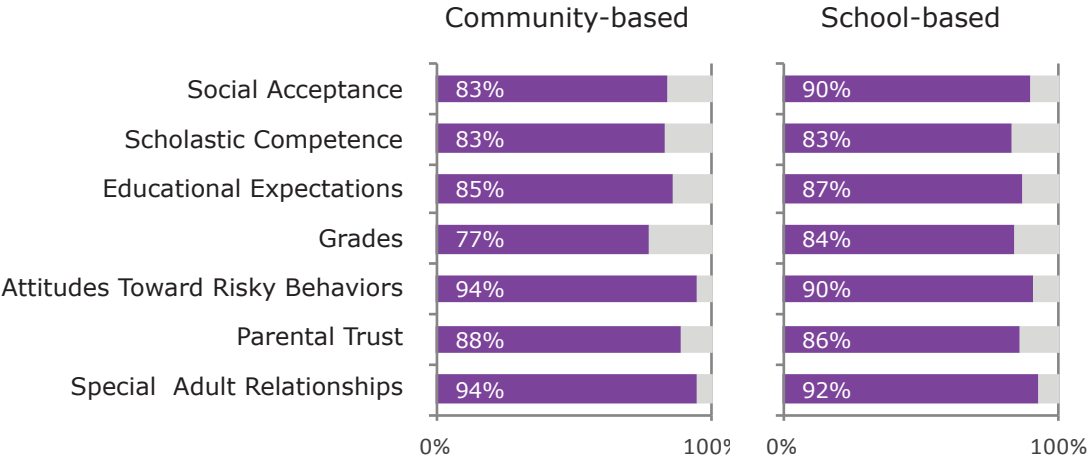


Though youth did not demonstrate improvement in all outcomes areas, they also did not demonstrate declines. Maintenance in these areas is important as evidence suggests that as they get older, youth decline naturally in many of these areas, such as in Parental Trust, Grades and/or Attitudes Toward Risky Behaviors (e.g., having less negative attitudes towards cigarette smoking as youth get older).

We also looked at individual youth as opposed to average outcomes across groups to determine whether or not individuals improved or declined in any of the seven outcome areas.

Across both programs, a large majority of youth either showed improvement or maintenance across all seven outcome areas.

% Improving or Maintaining from Baseline to Follow-up

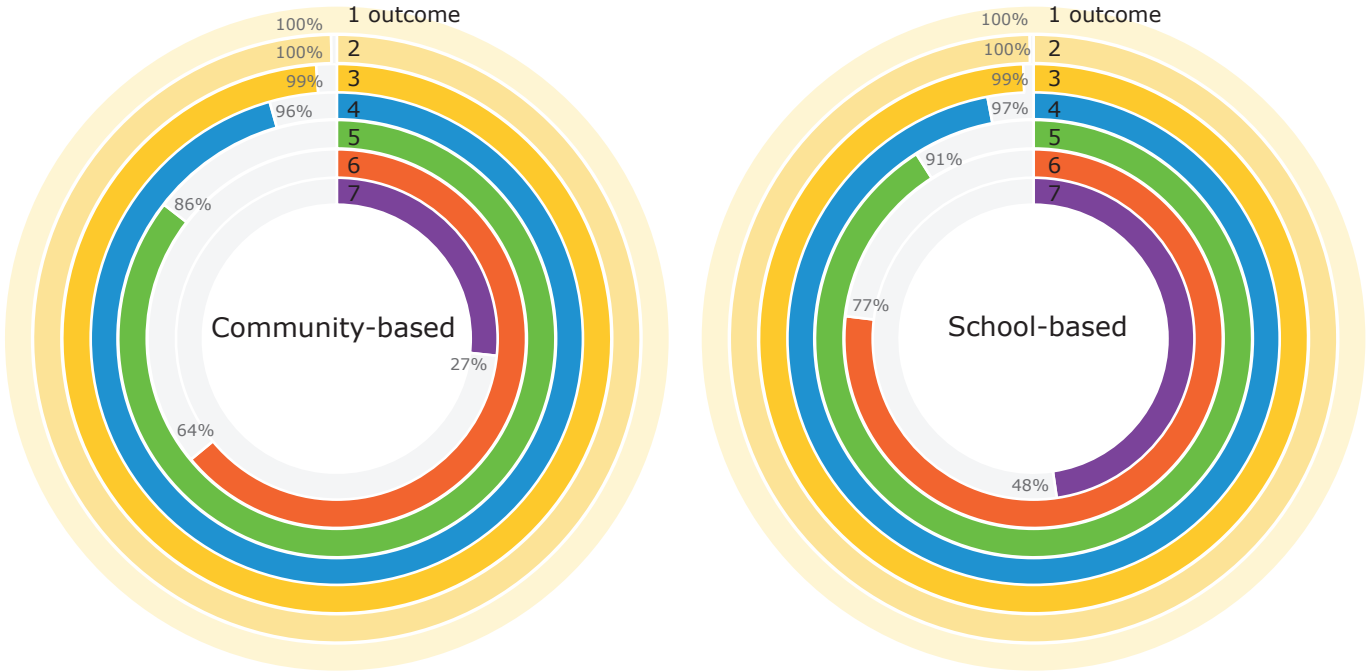


We also looked at what proportion of youth demonstrated improvements or no change in total number of outcome areas in which they showed improvement to investigate the holistic effects of mentoring.

Again, we saw that more than half of youth across both programs showed improvement or maintenance in six out of the seven outcome areas.

As discussed earlier, in light of the developmental declines typically experienced by youth in these areas as they get older, maintenance is in itself a positive finding.

% of Youth Showing Improvement or Maintenance in Number of Outcome Areas

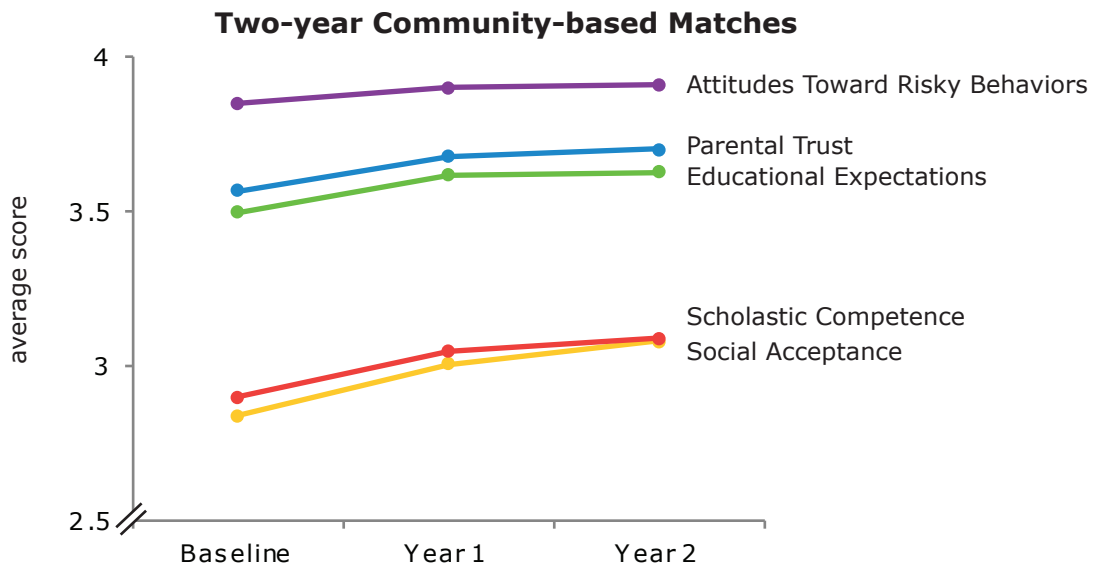


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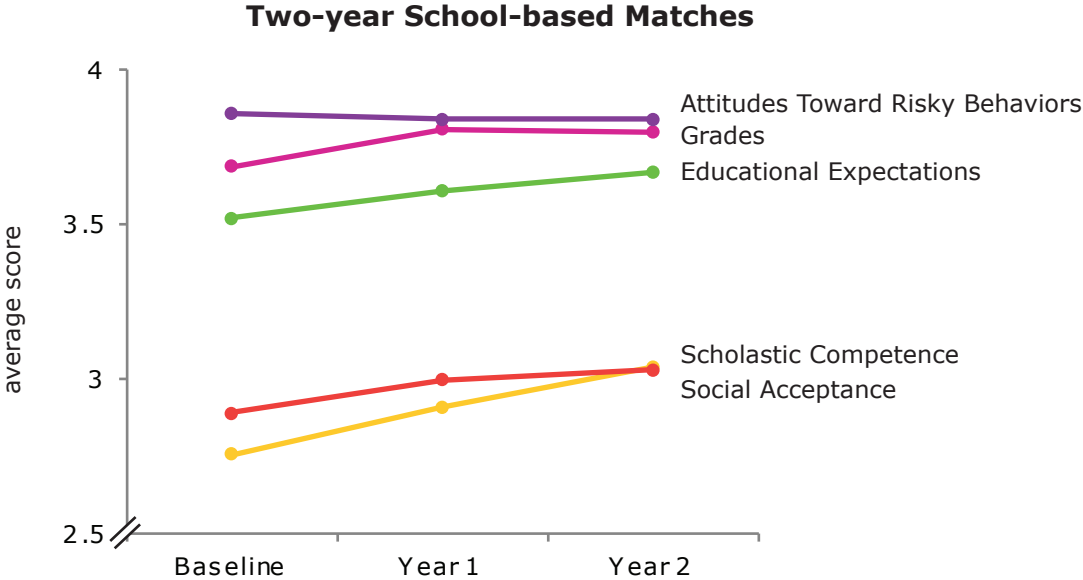
Do youth in matches for multiple years improve, stay the same, or decline?

To answer this question, we looked at youth who were matched for two years in the community-based program and youth who were matched for two school years in the school-based program to observe the progression of these outcomes over time. To be included in these analyses, youth needed to have surveys completed for each time point: baseline, follow-up at one year and follow-up at two years (and clearly, remain in matches for two years). Of those youth who completed year-two follow-ups, only 10% had completed all three surveys, making this a very restricted sample.

Our community-based matches that lasted two years continued to maintain the same levels of positive outcomes found at year one and even made additional statistically significant improvements in both Social Acceptance and Attitudes Toward Risky Behaviors at year two.



For school-based matches, we again found evidence to suggest that our matches together for two school years continued to maintain the same levels of positive outcomes found at year one and even made additional improvements in both Social Acceptance and Educational Expectations at year two.



4


















Do youth in two-year matches have significantly improved outcomes compared to youth in one-year matches?

To answer this question, we compared outcomes for youth in matches lasting two years (or two school years) with those matches lasting more than one year but less than two years.

Again, we saw that youth in two year matches appeared to be doing better in terms of Social Acceptance than one year matches. In addition, we saw that matches still together after two school years showed greater gains in Scholastic Competence, Parental Trust, and Special Adult Relationships than those reported by youth after one school year.

It appears that the additional time spent in a longer school-based match may lead to larger gains overall, a phenomenon that's less pronounced in the community-based matches. While youth across programs did not necessarily experience significantly greater gains in all outcomes by remaining in the match longer, the maintenance of improvements made during the first year is still powerful in terms of young people's developmental trajectories, and no outcomes appeared to decline.

Outcomes with Significant Effect in One- and Two-Year Matches

Outcomes	Community-based	School-based
Social Acceptance	 	 
Scholastic Competence		 
Educational Expectations		
Grades	--	
Attitudes Toward Risky Behaviors		--
Parental Trust		 
Special Adult		 





Unique in the youth development field, Big Brothers Big Sisters mentoring shows promise for helping the whole child develop into a healthy, productive adult member of society.

Conclusion

Our nation is confronting a number of severe challenges, from widespread poverty to violence to increased isolation in our communities. Unfortunately, these challenges are making it harder every day to grow up in America. We must remember that our youth hold promise for our nation's future and they must be provided the opportunities to grow and flourish, nurtured through relationships with positive adults.

By achieving positive change across a broad spectrum of youth outcomes, we suggest that Big Brothers Big Sisters can empower our youth to succeed despite our nation's pervasive challenges. Unique in the youth development field, Big Brothers Big Sisters mentoring shows promise for helping the whole child develop into a healthy, productive adult member of society.

The data represented in this report suggest that Big Brothers Big Sisters programs can achieve these broad results through one year or school year of mentoring, and that these positive changes appear to persist or even improve in a second year of mentoring.

Big Brothers Big Sisters has made a bold commitment toward transparent accountability for our outcomes, holding ourselves accountable for each child in our program achieving results in three outcome areas: (1) Higher aspirations, greater confidence, and better relationships; (2) Avoidance of risky behaviors; and (3) Educational success.

As an organization that embraces learning at the highest level, we are dedicated to improving how we measure our outcomes in these and other areas important to society, as well as working to ensure that the youth surveyed represent all children served by Big Brothers Big Sisters.

We look forward to continued work with our agencies, our community partners, and our families to achieve these and greater positive outcomes in the years ahead. Working together, we can tackle America's challenges by investing in the success of our young people. Through our collective efforts, we truly can and will change the lives of the youth we serve for the better, forever.

For more information about the measures included in this report and our detailed results, please see the appendices below.



Appendices

- 1. Outcomes Data Analysis**
- 2. Research Rationale for YOS Measures and Long-term Outcomes**
- 3. References**



1. Outcomes data analysis

YOS Measures and Reliability

The measures comprising the YOS generally fall within guidelines for acceptable reliability, using a .70 cutoff as a guideline.³ Due to concerns regarding validity of the truancy measure (i.e. whether or not its items actually constitute truancy), we are not reporting outcomes for truancy in this report and therefore, did not calculate reliability for this measure.⁴

Table 1: Reliability Statistics for YOS Scales in CB Sample

Measure	N	Cronbach's Alpha
Social Acceptance	5466	.70
Scholastic Competence	5455	.71
Educational Expectations	5452	.85
Grades	5404	.70
Attitudes Toward Risky Behaviors	5450	.72
Parental Trust	5439	.76

Table 2: Reliability Statistics for YOS Scales in SB Sample

Measure	N	Cronbach's Alpha
Social Acceptance	6233	.68
Scholastic Competence	6230	.71
Educational Expectations	6192	.84
Grades	6162	.71
Attitudes Toward Risky Behaviors	6194	.72
Parental Trust	6178	.74

³ For scales with a small number of items, a Cronbach's α of .60 may in some cases be considered acceptable (DeVellis, 2003).

⁴ Special Adult does not have a reliability calculation due to being a one-item measure.



Sample Descriptions

Table 3: Descriptive Statistics for CB Sample

	Youth in new matches made 7/1/10 through 6/30/11	Youth eligible for surveys (9+)	Youth eligible for surveys (9+) in matches lasting 12 months[^]	Youth with BL and FU1 completed
Number of youth	30,919	22,569	8,088	5,463
Number of agencies	262	261	186	181
Average age at match beginning	10.2	11.4	11.3	11.2
% Female	57.6%	57.1%	51.2%	51.5%***
% Male	42.4%	42.9%	48.8%	48.5%***
% Black	43.3%	43.0%	45.2%	44.1%
% Hispanic	19.8%	20.1%	22.2%	23.5%***
% White	29.9%	30.0%	26.3%	26.3%***
% Multi-race	2.0%	2.1%	1.2%	1.1%
% Asian, Hawaiian or Pacific Islander	1.0%	1.0%	1.2%	1.1%
% Native American / Alaska Native	1.8%	1.7%	1.5%	1.5%
% Other race	2.1%	2.0%	2.4%	2.3%
% With incarcerated parent	25.6%	24.6%	23.8%	24.2%
% Eligible for free or reduced-price lunch	69.0%	67.3%	71.6%	72.6%
% In non-two-parent families	83.2%	82.8%	82.8%	82.3%

[^]Restricted to agencies on AIM for the required period of time

***Notes statistically significant difference from eligible youth without both surveys at p<.001



Table 4: Descriptive Statistics for SB Sample

	Youth in new matches made 7/1/11 through 6/30/12	Youth eligible for surveys (9+)	Youth eligible for surveys (9+) in matches lasting 12 months[^]	Youth with BL and FU1 completed
Number of youth	31,388	19,734	7,467	6,223
Number of agencies	238	236	183	177
Average age at match beginning	9.4	10.7	10.8	10.9
% Female	56.3%	57.3%	58.1%	58.7%*
% Male	43.7%	42.7%	41.9%	41.3%*
% Black	32.8%	33.7%	38.1%	39.0%***
% Hispanic	20.5%	21.7%	24.1%	24.3%***
% White	38.3%	36.5%	31.2%	30.3%
% Multi-race	1.2%	1.3%	0.9%	0.9%**
% Asian, Hawaiian or Pacific Islander	2.2%	2.1%	2.2%	2.2%
% Native American / Alaska Native	1.9%	1.9%	1.5%	1.6%
% Other race	3.1%	2.8%	8.3%	1.8%
% With incarcerated parent	8.9%	8.7%	8.8%	8.2%
% Eligible for free or reduced-price lunch	69.2%	68.9%	72.6%	73.0%***
% In non-two-parent families	62.9%	62.6%	59.9%	60.1%***

[^]Restricted to agencies on AIM for the required period of time

***Notes statistically significant difference from eligible youth without both surveys at p<.001, **p<.01, *p<.05



Research questions

How do youth matched for one year in community-based and youth matched for one school year in school-based matches compare to unmatched, same-age youth across the measures included in the Youth Outcomes Survey?

Propensity Score Matching

To draw conclusive evidence from our age-cohort comparisons, the comparison group (youth who completed a baseline but who had not yet received mentoring) must be comparable to the treatment group (youth who had received mentoring for 12 months) on any characteristics that would differentiate the two groups, other than their YOS scores. In other words, we recognize that those youth who make it to 12 months in their match could be qualitatively different than all youth at baseline. Any changes we observe in YOS scores for our youth with 12-month matches may be due to these underlying differences and not necessarily due to mentoring. In order to account for these differences, we used a technique known as Propensity Score Matching to match each treatment youth with a youth from the comparison group who was similar on these potentially influential characteristics.⁵

In the table on page 22, we've included a list of youth characteristics that differentiated the group of youth who had 12-month follow-up data (in the treatment group) from those youth in our comparison group.

CB Youth: While most differences were small, the largest difference was in youth's age at time of survey; as a group, youth who remained in a match at 12 months were significantly younger at the time of follow-up than comparison youth who were surveyed at baseline. After conducting the matching procedures, the differences between these groups either remained the same (yellow) or were reduced (green), some to non-significance.

SB Youth: Similar to CB youth, differences between these groups were very small, the largest difference being that youth in the comparison group were less likely to be categorized as some other race/ethnicity. After conducting the matching procedures, the differences between these groups either remained the same (yellow) or were reduced (green), some to non-significance. Those highlighted orange had larger differences after matching, yet the differences were so small before and after (i.e. close to 0), that they are largely negligible. The matching procedures took care of the two largest differences: some other race/ethnicity and eligible for free or reduced lunch. As a whole, the matched sample was more similar than the non-matched sample.

⁵ See Thoemmes (2012).



Figure 1: Summary of Differences between Treatment and Comparison Groups for Original versus Matched Datasets

	Community-Based		School-Based	
	Original Dataset	Matched Dataset	Original Dataset	Matched Dataset
Gender	↓	---	↔	↔
Incarcerated parent	↓	↓	↓	---
Eligible for free or reduced-price lunch	↓	↓	↓	↓
Black	---	---	↑	↑
Hispanic	↓	↓	↑	↑
White	↔	↔	---	---
Native American/ Alaska Native	↓	↓	---	---
Asian, Hawaiian, or Pacific Islander	---	---	---	---
Some other race	↔	↔	↓	---
Multi-race	↔	↔	↔	↔
Age at match beginning	↓	---	---	---

--- Signifies non-significance

Age-Cohort Comparison

These comparisons aim to eliminate the influence of maturation on our interpretation of effects. As youth get older, they may exhibit declines in our outcomes of interest. These developmental patterns are typical for outcomes such as Grades and Attitudes Toward Risky Behaviors. By comparing post-test scores for mentored youth to youth of the same age who have not yet been mentored, we are less concerned with whether or not their scores have improved since pretest and more concerned with how mentored youth “shape up” compared to youth of the same age who have not received mentoring. The following tables utilize effect sizes to summarize the differences on each outcome between the two groups, treatment and comparison, for each age set (See “A Word about Effect Sizes,” p. 24).



Table 5: Effect Sizes for Age-Cohort Comparisons in CB Sample

Outcomes	Ages 9-11	Ages 12-14	Ages 15+
Cohen's D Small=.20 Medium=.50 Large=.80			
Social Acceptance	.32	.21	.18
Scholastic Competence	.24	.27	.31
Grades	---	.06	.17
abs(r) Small=.10 Medium=.30 Large=.50			
Educational Expectations	.05	.03	---
Parental Trust	.11	.12	.16
Attitudes Toward Risky Behaviors	.10	.12	.22
Cramer's V Small=.10 Medium=.10 to .30 Large>.30			
Special Adult	.33	.36	.40

--- Signifies non-significance

Table 6: Effect Sizes for Age-Cohort Comparisons in SB Sample

Outcomes	Ages 9-11	Ages 12-14	Ages 15+
Cohen's D Small=.20 Medium=.50 Large=.80			
Scholastic Competence	.19	.22	.23
abs(r) Small=.10 Medium=.30 Large=.50			
Social Acceptance	.14	.11	.10
Educational Expectations	.10	.08	---
Grades	.10	.10	.11
Attitudes Toward Risky Behaviors	---	.05	.10
Parental Trust	.06	.06	---
Cramer's V Small=.10 Medium=.10 to .30 Large>.30			
Special Adult	.24	.26	.24

--- Signifies non-significance



Do youth matched for one year in community-based matches and youth matched for one school year in school-based matches improve after one year of mentoring across the measures included in the Youth Outcomes Survey?

Community-Based Matches

Percentages maintaining or improving in each outcome area:

The table below shows the percentage of youth improving in each outcome area, as well as the number of youth either maintaining the same exact score or improving in each outcome area. As each of the outcome areas measured by a multi-item scale contains a certain amount of measurement error, it is necessary to account for this error when determining whether an individual reliably improved from baseline to follow-up.⁶ The columns to the right show the percentage of youth showing statistically significant, reliable improvement and the percentage of youth either showing statistically significant, reliable improvement or no discernible change. Reliable improvements are summarized in the body of this report.

Table 7: Percentages of CB Youth Reporting Maintenance or Improvement on Outcomes

	N	Improving	Maintaining or Improving	Reliably Improving	Reliably Improving or Showing No Discernible Change
Social Acceptance	5476	55.4%	66.7%	33.5%	83.3%
Scholastic Competence	5469	52.7%	65.4%	30.4%	83.1%
Educational Expectations	5447	28.8%	78.4%	19.1%	85.3%
Grades	5429	42.1%	56.4%	21.5%	76.9%
Attitudes Toward Risky Behaviors	5453	32.4%	79.5%	12.7%	94.1%
Parental Trust	5434	35.9%	78.4%	18.1%	88.1%
Special Adult	5351	34.8%	94.3%	34.8%	94.3%

⁶ Dubois, D.L. (2011).



Table 8 presents the percentages of youth showing improvement, maintenance, and reliable improvement in different numbers of outcome areas:

Table 8: Percentages of CB Youth Demonstrating Maintenance and Improvement in Different Total Number of Outcome Areas

Number of Outcome Areas	Improving	Maintaining or Improving	Reliable Improving	Reliably Improving or Showing No Discernible Change
7.00	.9%	18.8%	.2%	26.7%
6.00	4.6%	46.4%	1.0%	64.0%
5.00	14.8%	70.8%	3.9%	85.5%
4.00	32.3%	87.6%	10.4%	95.6%
3.00	55.6%	96.3%	24.6%	98.8%
2.00	79.1%	99.4%	49.5%	99.7%
1.00	94.4%	99.9%	79.7%	100.0%

Comparison of baseline and follow-up average scores

On average, across all youth surveyed in CB matches, youth showed statistically significant improvement in six of the seven outcome categories. Using effect sizes to compare the amount of change in each outcome area, the largest gains were in Special Adult Relationships, Social Acceptance and Perceived Scholastic Competence, followed by Attitudes Toward Risky Behaviors, Parental Trust, and Educational Expectations. The effect sizes are within the range reported by other mentoring program evaluations.⁷

A word about effect sizes

Effect sizes are simply a way to describe the amount of change in a standardized format. They are computed by calculating the difference between two means and then dividing by the standard deviation. Since the standard deviation tells you how much a measurement varies between participants, the effect size tells you how much change has occurred relative to the variance generally observed. Effect sizes can be useful when comparing the results of several independent studies, as they do not rely on sample size the way that significance testing does. Caution should be used when comparing effect sizes across different outcomes, though they can be generally used as a rough means of comparison.

⁷ "Similarly, pre-post effect sizes within each group averaged across all studies indicated significant improvement for mentored youth (.25 ± .14) and significant decline for comparison youth (-.17 ± .11) (DuBois et al. 2011)



Table 9: Baseline to Follow-Up Differences and Effect Sizes for All CB Youth

Outcome Area	N	Baseline Mean	Baseline SD	Follow-up Mean	Effect Size
Social Acceptance	5466	2.89	.637	3.07	.27***
Scholastic Competence	5455	2.96	.585	3.09	.22***
Educational Expectations	5452	3.58	.641	3.65	.10***
Grades	5404	3.70	.785	3.68	-.02
Attitudes Toward Risky Behaviors	5440	3.86	.244	3.90	.16***
Parental Trust	5439	3.58	.569	3.68	.15***
Special Adult	5351	59.6%	.491	88.7%	.53***

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$

In assessing for gender differences in these gains, effects were significantly greater for boys in the following outcome areas at $p < .05$ or less: Educational Expectations, Attitudes Toward Risky Behaviors and Parental Trust. However, boys showed a significant decline in Grades whereas girls showed no discernible change.

Table 10: Baseline to Follow-Up Differences and Effect Sizes for CB Girls and Boys

Outcome Area	Girls				Boys			
	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size
Social Acceptance	2809	2.88	3.04	.25***	2649	2.91	3.09	.28***
Scholastic Competence	2806	2.96	3.09	.21***	2648	2.96	3.10	.22***
Educational Expectations	2795	3.64	3.68	.07***	2640	3.52	3.62	.13***
Grades	2790	3.72	3.73	.01	2630	3.86	3.63	-.05**
Attitudes Toward Risky Behaviors	2804	3.88	3.90	.10***	2640	3.85	3.90	.22***
Parental Trust	2796	3.57	3.64	.11***	2629	3.60	3.72	.19***
Special Adult	2756	61.8%	89.4%	.51***	2586	57.3%	87.8%	.54***

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$



The following racial/ethnic categories were used for analyses: black, Hispanic, white, American Indian or Alaska Native, Asian/Multi-race (Asian and white)/Native Hawaiian or other Pacific Islander, Some other race, or Multi-race (none of the above). For the following analyses, comparisons were made between the three largest racial-ethnic groups and all other youth who were not characterized by each of these ethnic groups.

For instance, black youth were compared to all non-black youth to see if there were any significant differences in level of improvements. All differences were significant at the $p < .05$ or less.

As compared to all other youth, black youth reported significantly smaller gains in Scholastic Competence, Educational Expectations and having a Special Adult; however, they also reported higher levels of each of these outcomes at baseline, leaving less room for improvement.

Hispanic youth reported significantly greater gains in Scholastic Competence and having a Special Adult when compared to all other youth. They also maintained their grades between baseline and follow-up surveys, as compared to non-Hispanic youth who exhibited declines in grades. There were no significant differences in improved outcomes for white youth versus all other youth, other than exhibiting significantly larger gains in having a Special Adult.

Table 11 presents comparisons of pre- and post-test results with black, Hispanic, and white youth:

Table 11: Baseline to Follow-Up Differences and Effect Sizes by Racial-Ethnic Group in CB Sample

Outcome Area	Black Youth				Hispanic Youth				White Youth			
	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size
Social Acceptance	2418	2.96	3.12	.24***	1287	2.88	3.07	.29***	1440	2.79	2.98	.29***
Scholastic Competence	2416	3.02	3.14	.18***	1285	2.85	3.04	.30***	1440	2.93	3.06	.21***
Educational Expectations	2405	3.70	3.74	.08***	1277	3.49	3.59	.14***	1434	3.49	3.57	.12***
Grades	2396	3.73	3.69	-.05*	1277	3.57	3.60	.03	1430	3.73	3.72	-.02
Attitudes Toward Risky Behaviors	2412	3.88	3.91	.15***	1282	3.86	3.91	.18***	1431	3.85	3.89	.14***
Parental Trust	2403	3.62	3.70	.14***	1274	3.55	3.67	.19***	1431	3.56	3.66	.16***
Special Adult	2368	66.5%	88.5%	.41***	1258	52.1%	88.8%	.66***	1404	55.2%	89.4%	.62***

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$

Analyses testing for differences in level of improvements by age were conducted similarly to analyses on racial/ethnic differences. Youth were broken into three categories: elementary-school age (ages 9-11), middle-school age (ages 12-14), and high-school age (ages 15 and above). For the following analyses, comparisons were made between these three age groups and all other youth served. All reported differences were significant at $p < .05$ or less.

Elementary-school youth reported significantly greater gains in Social Acceptance and Educational Expectations relative to older youth, with significantly smaller gains in having a Special Adult.

Middle-school youth had significantly smaller gains in Social Acceptance, Educational Expectations, and Attitudes Toward Risky Behaviors relative to older and younger youth.

High School youth did not report any change in Educational Expectations, differentiating them from younger youth. They did make significantly bigger gains in Attitudes Toward Risky Behaviors than did younger youth, as well as in Parental Trust and having a Special Adult.

Table 12: Baseline to Follow-Up Differences and Effect Sizes by Age Group in CB Sample

Outcome Area	Ages 9-11				Ages 12-14				Ages 15+			
	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size
Social Acceptance	3308	2.82	3.03	.31***	1871	3.01	3.13	.19***	279	2.97	3.13	.26***
Scholastic Competence	3306	2.96	3.10	.23***	1870	2.96	3.08	.20***	278	2.94	3.06	.19*
Educational Expectations	3291	3.57	3.67	.14***	1866	3.62	3.66	.07**	278	3.49	3.47	-.03
Grades	3283	3.78	3.75	-.04*	1863	3.59	3.59	.00	274	3.45	3.48	.03
Attitudes Toward Risky Behaviors	3299	3.88	3.92	.17***	1867	3.85	3.88	.12***	278	3.76	3.89	.29***
Parental Trust	3289	3.65	3.74	.14***	1860	3.51	3.60	.14***	276	3.29	3.49	.24***
Special Adult	3236	62.6%	90.0%	.51***	1832	55.7%	86.0%	.53***	274	50.0%	89.8%	.68***

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$



School-Based Matches

Percentages maintaining or improving in each outcome area:

Table 13: Percentages of Youth Reporting Maintenance or Improvement on Outcomes in SB Sample

	N	Improving	Maintaining or Improving	Reliably Improving	Reliably Improving or Showing No Discernible Change
Social Acceptance	6233	53.1%	67.8%	23.0%	89.6%
Scholastic Competence	6230	49.2%	64.4%	27.2%	82.7%
Educational Expectations	6192	29.7%	80.6%	19.7%	86.6%
Grades	6162	46.4%	62.8%	23.1%	84.0%
Attitudes Toward Risky Behaviors	6194	25.9%	75.2%	9.2%	90.0%
Parental Trust	6178	30.5%	73.2%	16.3%	85.5%
Special Adult	5734	26.4%	92.3%	26.4%	92.3%

Table 14 presents the percentages of youth showing improvement, maintenance, and reliable improvement in different numbers of outcome areas:

Table 14: Percentages of SB Youth Demonstrating Maintenance and Improvement in Different Total Number of Outcome Area

Number of Outcome Areas	Improving	Maintaining or Improving	Reliably Improving	Reliably Improving or Showing No Discernible Change
7	.8%	20.1%	.1%	47.7%
6	3.9%	46.0%	.8%	76.9%
5	12.4%	69.9%	3.0%	91.0%
4	27.7%	86.8%	7.9%	97.0%
3	50.8%	95.6%	19.8%	99.4%
2	74.4%	99.0%	41.0%	99.8%
1	91.7%	99.9%	72.4%	100.0%



Comparison of baseline and follow-up average scores

Across all youth surveyed in SB matches, youth showed statistically significant improvement in six of the seven outcome categories. The largest gains were in Special Adult Relationships, Social Acceptance and Scholastic Competence, followed by Educational Expectations and Grades with a very small positive gain in Parental Trust. Unlike youth in the CB program, youth in the SB program showed improvement in grades.

Table 15: Baseline to Follow-Up Differences and Effect Sizes for SB Sample

Outcome Area	N	Baseline Mean	Baseline SD	Follow-up Mean	Effect Size
Social Acceptance	6233	2.78	.628	2.94	.25***
Scholastic Competence	6230	2.89	.584	2.99	.16***
Educational Expectations	6192	3.55	.657	3.63	.12***
Grades	6162	3.65	.775	3.74	.11***
Attitudes Toward Risky Behaviors	6194	3.87	.249	3.86	-.02
Parental Trust	6178	3.55	.583	3.57	.03*
Special Adult	5734	66.1%	.473	84.9%	.34***

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$

The strength of the SB program's effect on boys and girls was very similar. Boys reported slightly larger improvements on parental trust ($p < .05$), while girls reported no significant gains on this outcome.

Table 16: Baseline to Follow-Up Differences and Effect Sizes for SB Boys and Girls

Outcome Area	Girls				Boys			
	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size
Social Acceptance	3654	2.76	2.93	.26***	2579	2.80	2.96	.24***
Scholastic Competence	3652	2.89	3.00	.18***	2578	2.89	2.98	.15***
Educational Expectations	3630	3.58	3.67	.13***	2562	3.50	3.58	.10***
Grades	3611	3.66	3.76	.13***	2551	3.64	3.72	.09***
Attitudes Toward Risky Behaviors	3637	3.87	3.87	.00	2557	3.85	3.84	-.04*
Parental Trust	3624	3.56	3.56	.00	2554	3.55	3.59	.06**
Special Adult	3381	67.8%	86.7%	.36***	2353	63.7%	82.2%	.33***

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$



In estimating racial/ethnic differences in program outcomes ($p < .05$), black youth had significantly smaller gains in Educational Expectations relative to all other youth. Although again, their scores started out higher at baseline than those for all other youth, leaving them less room for improvement.

Hispanic youth had significantly greater gains in Social Acceptance, Educational Expectations, and having a Special Adult compared to all other youth.

White youth had significantly smaller gains in Social Acceptance and Educational Expectations relative to all other youth.

Table 17: Baseline to Follow-Up Differences and Effect Sizes by Racial-Ethnic Group in SB Sample

Outcome Area	Black Youth				Hispanic Youth				White Youth			
	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size
Social Acceptance	2428	2.89	3.05	.24***	1512	2.74	2.93	.32***	1891	2.68	2.80	.19***
Scholastic Competence	2428	2.99	3.08	.14***	1510	2.82	2.93	.18***	1891	2.82	2.92	.17***
Educational Expectations	2413	3.70	3.76	.09***	1503	3.46	3.60	.20***	1878	3.46	3.50	.07**
Grades	2401	3.71	3.79	.10***	1495	3.57	3.68	.14***	1872	3.64	3.72	.10***
Attitudes Toward Risky Behaviors	2412	3.87	3.85	-.03	1505	3.88	3.87	-.02	1880	3.86	3.86	-.01
Parental Trust	2406	3.58	3.59	.02	1498	3.54	3.57	.05*	1879	3.55	3.55	.01
Special Adult	2171	69.1%	86.7%	.34***	1396	62.8%	84.7%	.38***	1794	65.7%	82.9%	.31***

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$



There were very few significant differences in the progress made by youth in SB programming across the various age groups at the $p < .05$ level or less.

Elementary-school youth had significantly greater gains than older youth in the outcome areas of Social Acceptance and Parental Trust. In fact, elementary-school youth were the only age group to demonstrate gains in Parental Trust.

Middle-school youth reported significant declines in their Attitudes Toward Risky Behaviors. This decline is not unexpected for this age group; without a comparison group for these analyses, it is unclear if this decline is a cause for concern or simply a marker of maturation.

Table 18: Baseline to Follow-Up Differences and Effect Sizes by Age Group in SB Sample

Outcome Area	Ages 9-11				Ages 12-14				Ages 15+			
	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size	N	BL Mean	FU Mean	Effect Size
Social Acceptance	4614	2.72	2.89	.26***	1106	2.91	3.05	.24***	509	3.03	3.14	.22***
Scholastic Competence	4609	2.88	2.98	.17***	1108	2.89	2.98	.15***	509	3.03	3.09	.12**
Educational Expectations	4579	3.53	3.62	.12***	1100	3.58	3.66	.12***	509	3.67	3.71	.07
Grades	4550	3.68	3.79	.12***	1099	3.56	3.62	.08**	509	3.54	3.63	.13***
Attitudes Toward Risky Behaviors	4582	3.88	3.88	-.01	1102	3.85	3.82	-.08**	506	3.79	3.80	.02
Parental Trust	4572	3.59	3.62	.04**	1098	3.49	3.49	.00	504	3.36	3.33	-.04
Special Adult	4275	67.5%	85.6%	.33***	1003	62.5%	83.6%	.38***	452	61.1%	81.0%	.35***

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$



Do youth matched for multiple years in community-based and school-based matches improve, stay the same, or decline across the measures included in the Youth Outcomes Survey?

As described previously, we examined the continued progress for youth in the second year of their matches. In the table below, the p-value for the F-score signifies whether or not the overall trend was significant across the two year time period. In areas where there was no significant trend for youth across the two years, no mean values are reported for each data collection period. Areas for which "FU2" is bolded are the areas where youth demonstrated significant improvement between Follow-Up 1 and Follow-Up 2.

Table 19: Youth Outcomes Trends across First Two Years of Match, CB Sample

Outcome Area	F	P		Means	Effect Size
Social Acceptance	48.61	.000***			
			Baseline	2.84	
			FU1	3.01	.25
			FU2	3.08	.12
Scholastic Competence	35.72	.000***			
			Baseline	2.90	
			FU1	3.05	.23
			FU2	3.09	---
Educational Expectations	14.67	.000***			
			Baseline	3.50	
			FU1	3.62	.17
			FU2	3.63	---
Grades	.770	n/s			
			Baseline	---	
			FU1	---	---
			FU2	---	---
Attitudes Toward Risky Behaviors	24.51	.000***			
			Baseline	3.85	
			FU1	3.90	.19
			FU2	3.91	.05
Parental Trust	14.90	.000***			
			Baseline	3.57	
			FU1	3.68	.17
			FU2	3.70	---

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$



Table 20: Youth Outcomes Trends across First Two Years of Match, SB Sample

Outcome Area	F	P		Means	Effect Size
Social Acceptance	208.59	.000***			
			Baseline	2.76	
			FU1	2.91	.25
			FU2	3.04	.20
Scholastic Competence	58.41	.000***			
			Baseline	2.89	
			FU1	3.00	.19
			FU2	3.03	---
Educational Expectations	47.93	.000***			
			Baseline	3.52	
			FU1	3.61	.13
			FU2	3.67	.09
Grades	24.26	.000***			
			Baseline	3.69	
			FU1	3.81	.15
			FU2	3.80	---
Attitudes Toward Risky Behaviors	6.32	.002***			
			Baseline	3.86	
			FU1	3.84	-.07
			FU2	3.84	---
Parental Trust	1.832	---			
			Baseline	---	
			FU1	---	---
			FU2	---	---

***statistically significant at $p < .001$, ** $p < .01$, * $p < .05$



Do youth in two-year matches have significantly improved outcomes versus youth in one-year matches?

As we begin to have more complete data on our matches that are open for multiple years, we can test for enhanced outcomes in matches that have been open for two years versus one year by comparing one-year outcomes to two-year outcomes. These analyses, however, are not straightforward. As we know, matches that remain open at the two-year mark may involve youth who are inherently different from youth whose matches remain open at the one-year mark. We checked for these differences and attempted to control for them statistically in our analyses, attempting to eliminate any influence they may have on our results.

First, we compared the one-year and two-year matches to see if there were demographic differences between them. These differences were negligible; when significant, they had a very small effect size. Then we compared their baseline scores on all outcomes for any existing differences before entering the match. Those matches that made it to two years actually had lower baseline scores on six of the seven of our outcomes of interest than those who were in one-year matches. Lastly, when comparing the year-one follow-up scores for the two-year matches to the year-one follow-up scores of the one-year matches, they were extremely similar. Only three of the seven outcomes had significant differences – but the magnitude of these differences was negligible.

In summary, for youth in one-year versus two-year matches:

1. The two groups had similar demographics.
2. They had similar baseline scores on outcomes measure. Where different, the two-year matches actually scored below the one-year matches.
3. The two groups were very similar at the first follow-up.

In our analyses, we have an added layer of protection because we control for all available demographic variables and the baseline score corresponding to each outcome of interest. Therefore, if we find a predictive relationship between years in the program and our outcome – **we can suggest that above and beyond the effects of any demographic differences in those who were in the program for two years versus one, and after accounting for baseline differences, longer matches were associated with significantly stronger benefits for the following outcomes listed in figure 2:**



Figure 2: Outcomes where Youth Demonstrated Significant Improvements during Year 2

Outcomes	CB	SB
Social Acceptance	✓	✓
Scholastic Competence	---	✓
Educational Expectations	---	---
Grades	---	---
Attitudes Toward Risky Behaviors		
Parental Trust	---	✓
Special Adult	---	✓

Ideally, we would follow a comparison group of youth with similar characteristics across the same time period to observe how their trajectories differ from those youth who remain in matches. This would help frame our data. For instance, even if there are no significant improvements in outcomes between year one and year two, the fact that there are no declines (i.e. maintenance) could be meaningful compared to how youth outside of mentoring relationships fare.

All effects listed in this table were significant at $p < .10$ or lower. We were unable to estimate the size of this effect for the Attitudes Toward Risky Behaviors measure due to the measure’s limited variability.

In the future, we hope to use statistical techniques to project the two-year scores of all youth who have one-year scores and then make our comparison between these scores and the scores of those who actually made it to two years. This would more accurately estimate the effect of being in a two-year match versus being in a match that closed before that two-year mark.

2. Research Rationale for YOS Measures and Long-term Outcomes

Social Acceptance

Adapted from the *Self-Perception Profile for Children* (Harter, 1985).

What are the survey questions?

1. I am always doing things with a lot of kids.
2. I wish that more people my age liked me (R)*.
3. I find it hard to make friends (R).
4. I would like to have a lot more friends (R).
5. I am popular with others my age.
6. I have a lot of friends.

Why do we measure this?

Social acceptance
is associated with
peer relations and conduct
which are linked to
higher grades & graduation rates

* notes reverse-scored item

Why does social acceptance matter? Researchers found...

- Students who were accepted by their peers had lower probabilities of grade retention [being held back] or moving downward in the track system (Lubbers, Van Der Werf, Snijders, Creemers, & Kuyper, 2006).
- A thorough review and analysis of the literature on peer-relationship difficulties in childhood indicated general support for the hypothesis that **children with poor peer adjustment are at risk for later life difficulties**, including dropping out of school and criminality. The strongest predictors of these poor outcomes were low social acceptance and aggressiveness (Parker & Asher, 1987).
- A study following a cohort of children in New Zealand found that even after taking into account the effects of confounding factors, **childhood peer relationship problems (measured at age 9) continued to predict young people's subsequent (lower) achievement and unemployment** at age 16-18 (Woodward & Fergusson, 2000).
- Wentzel and Caldwell (1997) followed sixth-graders over time and found that when considered by themselves, the **peer relationship variables were significant predictors of students' grades** both concurrently and over time, and that group membership was the most consistent predictor of sixth and eighth grade GPA (Wentzel & Caldwell, 1997).
- A study exploring the influence of peer relationships on academic outcomes found that **same-sex peer relationships were found to be a significant predictor of school engagement, which in turn significantly predicted academic performance and general self-esteem**. These peer relationships also had direct links to academic performance and general self-esteem even after the association between school engagement and these two outcomes were accounted for (Liem & Martin, 2011).
- A study examining peer rejection and aggression in childhood found that the combination of **peer rejection and aggression was associated with felony assaults**, and aggression



was associated with a wide diversity of offenses during adolescence, whereas for girls only peer rejection predicted involvement in minor assault (*Milller-Johnson, Coie, Maumary-Gremaud, Lochman, & Terry, 1999*).

- In an article discussing the epidemic of school shootings, a noted researcher stated “**in many cases, including the Columbine High School shootings in Littleton, CO, the perpetrators had been isolated socially from their peers** and had been the recipients of bullying and teasing from other students” (*Jensen, 2007*).

Perceived Scholastic Competence

Adapted from the Self-Perception Profile for Children (Harter, 1985).

What are the survey questions?

7. I have trouble figuring out the answers in school (R).
8. I feel that I am just as smart as other kids my age.
9. I am very good at my schoolwork.
10. I'm pretty slow in finishing my school work (R).
11. I often forget what I learn (R).
12. I do very well at my class work.

Why do we measure this?

Perceived scholastic competence *is* associated with improved school performance *which* is linked to **improved grades**

Why does perceived scholastic competence matter? Researchers found...

- Students' perceived scholastic competence was the strongest predictor of motivational orientation and standardized test scores, indicating that scholastic competence, or the sense that “I can do it,” will often result in students **trying harder and performing higher academically** (*Wong, Wiest, & Cusick, 2002*).
- Sink (1991) found that in a study of middle school students, students' and teachers' perceptions of scholastic competence were significantly correlated with **scores on classroom and achievement tests** (*Sink, Barnett, & Hixon, 1991*).
- In a study of students with learning disabilities, researchers found that students whose self-ratings of scholastic competence fell within the ‘adequate’ subgroup had **statistically significant higher grades**, teacher ratings, athletic competence, and global self-worth than those with lower ratings of scholastic competence (*Winston, 1999*).

Much of the existing research literature focuses on the role of more ‘fixed’ factors on student achievement: IQ, intelligence, socioeconomic status, and family support. These researchers have documented the important role that a more malleable indicator like perceived scholastic competence plays in school performance, including higher grades and standardized test scores (*Sink et al., 1991; Winston, 1999; Wong et al., 2002*).



Educational Expectations

Dynarski et al. (2001); adapted by Vandell (2003).

What are the survey questions?

How sure are you that you will...

13. finish high school?
14. go to college?
15. finish college?

Why do we measure this?

Educational expectations
are associated with
Hope for a higher education or
educational success
which is linked to

**Academic achievement, high
school graduation, & college
attendance**

Why do educational expectations matter? Researchers found...

- In a study of suburban high school seniors, **academic expectations were found to be highly correlated with academic achievement** ($r = .60$) (Sanders, Field, & Diego, 2001).
- A longitudinal study of low-income Chicago students found that students' expectation of attending college was associated with approximately **a twofold increase in the probability of graduation above** and beyond the influence of other predictors (OR = 1.89; 95% CI = 1.38, 2.60) (Ou & Reynolds, 2008).
- A longitudinal study of Michigan youth found that **sixth-grade certainty of college plans predicted college attendance status** even after the family demographics, sixth-grade GPA, and the mother's ratings of her child's academic resiliency were controlled for (Eccles, Vida, & Barber, 2004).



Grades (Self-Assessment)

What are the survey questions?

Thinking about the grades and marks you are getting in school, please circle how you are doing [A – F]

- 16. Mathematics
- 17. Reading or Language Arts
- 18. Social Studies
- 19. Science

Why do we measure this?

Self-reported grades
are associated with
Actual grades
which are linked to
**Externalizing behaviors (males),
internalizing behaviors (females),
& high school graduation rates**

Why do grades matter? Researchers found...

- A longitudinal study of high schoolers found that **lower grades predicted more frequent drinking** and that lower GPA had a negative effect on emotional distress for girls (*Shippee & Owens, 2011*).
- Balfanz and Herzog (2005) examined risk factors from elementary through high school and found that four sixth-grade risk factors predict 60% of the students who will not graduate from the school system within one year of expected graduation: low attendance (80% or lower), poor classroom behavior, **a failing grade in math, and a failing grade in English** (*Balfanz, Herzog, & Mac Iver, 2007*).
- A study examining the high school dropout crisis found that nearly half of their total sample (n=7441) who had a GPA between 2.0 and 3.0 in 8th grade slipped to below 2.0 in their first term in 9th grade; the likelihood that these students experienced **an on-time graduation was only 25%** compared to 60% for the students whose grades did not drop (*Pharris-Ciurej, Hirschman, & Willhoft, 2012*).

Our organization recognizes the mixed evidence for using a self report measure for grades, especially for low-performing youth (see below); however, these measures are accepted in the field as a proxy for actual grades in the absence of school records. We are currently testing the validity of this measure.

- Cassady (2001) studied the reliability of GPA and SAT score self-reports among a sample of undergraduate students and found that **participants had highly reliable ratings of cumulative GPA** – i.e., self-reported GPA scores were found to be remarkably similar to official records (*Cassady, 2001*).
- A meta-analysis of studies of GPA, class rank, and SAT scores in high school and college students found that **lower levels of school performance are associated with considerably lower levels of reliability for self-reported grades** (*Kuncel, Marcus, & Thomas, 2005*).



Attitudes Toward Risky Behaviors

Adapted from Brown, Clasen, and Eicher (1986).

What are the survey questions?

What do you think about kids your age:

20. Using tobacco (cigarettes, cigars, smokeless or chewing tobacco)? (R)
21. Taking drugs that aren't given to them by a doctor or parent? (R)
22. Drinking alcohol without their parents knowing? (R)
23. Skipping school without permission? (R)
24. Hitting someone because they didn't like something they said or did? (R)
25. Breaking rules in school? (R)
26. Being late for school? (R)

Why do we measure this?

Attitudes toward risk
are associated with
Actual risky behavior
which are linked to

Negative outcomes later in life

Why do attitudes toward risky behaviors matter? Researchers found...

- A study of 8th grade Mexican-American students indicated that **youths' attitudes were positively related to actual current drug use** for all three drug types measured (alcohol, inhalants, and marijuana) (Tonin, Burrow-Sanchez, Harrison, & Kircher, 2008).
- In a study of a high-risk, urban school district, results showed that youth attitudes supporting boys hitting boys significantly **increased the odds of peer violence perpetration** after controlling for potential confounds (Ali, Swahn, & Sterling, 2011).
- A study of 5th graders found that youth who were recent drinkers (within 30 days – 17.9% of sample) **demonstrated beliefs and attitudes about alcohol that differed significantly from those of inactive drinkers; active drinkers** were more likely to perceive drinking (by both adults and same-age peers) as socially acceptable and associated with having fun, and less likely to perceive drinking as harmful (McDermott, Clark-Alexander, Westhoff, & Eaton, 1999).
- A study of 7th graders found that students who reported a more positive attitude toward substance **use were more likely to report current and anticipated use of substances** (Barkin, Smith, & DuRant, 2002).
- A 30-year prospective study designed to investigate the effect of the use of alcohol and drugs early in life (at age 13 or 15) found that adolescents who were exposed to alcohol or drugs were more likely than a matched comparison group who did not have early exposure to alcohol or drugs to develop substance dependence, test positive for herpes, have an early pregnancy, and be convicted of criminal offenses (Odgers et al., 2008).



Parental Trust

Adapted from Parental Trust IPPA subscale (short version, Arnsden & Greenberg, 1987).

What are the survey questions?

How often do I feel that...

- 27. My parents respect my feelings.
- 28. My parents accept me as I am.
- 29. When I'm angry about something, my parents try to be understanding.

Why do we measure this?

Parental trust
is associated with
Positive parental relationships
which are linked to
**Decreased risky behavior &
better school performance**

Why does parental trust matter? Researchers found...

- Perceived parental social support, especially reassurance of worth, **predicted college grade point average** when controlling for academic aptitude (ACT scores), family achievement orientation, and family conflict in a sample of undergraduate students (Cutrona, Cole, Colangelo, Assouline, & Russell, 1994).
- A study of adult substance users compared to non-users found that perceived paternal acceptance-rejection emerged as the **best single predictor of substance abuse for both males and females** (Campo & Rohner, 1992).
- Perceived parental trust has been shown to be associated with **lower tobacco and marijuana use**, as well as sexual activity among girls and alcohol use among boys (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003).
- A study designed to investigate the effect of parental relationships with youth on youth risk behaviors found that two types of parental relationship indicators - closeness/respect and/or rules/monitoring - were significant predictors of **substance use behaviors and attitudes toward unhealthy dating relationships in youth** (Tharp & Noonan, 2012).



Special Adult

What are the survey questions?

Right now in your life, is there a special adult (not your parent or guardian) who you often spend time with? A special adult is someone who does a lot of good things for you. For example someone (a) who you look up to and encourages you to do your best, (b) who really cares about what happens to you, (c) who influences what you do and the choices you make, and (d) who you can talk to about personal problems?

- No, I don't have a special adult in my life right now.
- Yes, I do have a special adult in my life.

Why do we measure this?

Having a special adult in a child's life who is not a parent *is* associated with Improved school attendance, attitudes toward school and parental trust *which* are linked to **Improved grades & decreased delinquency**

Why does having a special adult matter? Researchers found...

- A study of a mentoring program for elementary students in Ohio found that compared to the control group, students in the program were **significantly less likely to have bullied a peer in the past 30 days, to have physically fought with a peer in the past 30 days, and to have felt depressed** in the past 30 days. Students also showed improved self-esteem and peer connectedness scores, and were significantly more likely at posttest than at pretest to **report talking more frequently with their parent/guardian when they had a problem** (King, Vidourek, Davis, & McClellan, 2002).
- A study of a school-based mentoring program found that students in the mentoring group experienced statistically significant **reductions in office referrals and statistically significant improvements in school attitude** compared to their pre-mentor baseline scores (Converse & LignugarisKraft, 2009).
- A study of Latino 12th graders and 'natural mentors' (siblings, extended family members, and informal non-familial adults) found that the presence of a mentor was associated with **fewer absences, higher educational expectations, and greater expectancies for success and sense of school belonging**. The number of reported mentors predicted fewer absences, higher educational expectations and a greater sense of school belonging (Sánchez, Esparza, & Colón, 2008).
- Kogan and Brody (2011) studied natural mentors and rural African-American emerging adults, and found that those whose relationships with their natural mentors were characterized by instrumental and emotional support and affectively positive interactions reported **lower levels of anger, rule-breaking behavior, and aggression, independent of youth gender and family support** (Kogan, Brody, & Chen, 2011).
- A study of Midwestern adolescents reported that respondents who had natural mentors reported **lower levels of marijuana use and nonviolent delinquency, and reported higher levels of school attachment and school efficacy, and were more likely to believe in the importance of doing well in school** (Zimmerman, Bingenheimer, & Notaro, 2002).



3. References

- Ali, B., Swahn, M., & Sterling, K. (2011). Attitudes about violence and involvement in peer violence among youth: Findings from a high-risk community. *Journal of Urban Health, 88*(6), 1158-1174. doi: 10.1007/s11524-011-9601-6
- Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence, 16*(5), 427-454.
- Balfanz, R., Herzog, L., & Mac Iver, D. J. (2007). Preventing student disengagement and keeping students on the graduation path in urban middle-grades schools: Early Identification and Effective Interventions. *Educational Psychologist, 42*(4), 223-235. doi: 10.1080/00461520701621079
- Barkin, S. L., Smith, K. S., & DuRant, R. H. (2002). Social skills and attitudes associated with substance use behaviors among young adolescents. *Journal of Adolescent Health, 30*(6), 448-454. doi: [http://dx.doi.org/10.1016/S1054-139X\(01\)00405-0](http://dx.doi.org/10.1016/S1054-139X(01)00405-0)
- Borawski, E. A., Ievers-Landis, C. E., Lovegreen, L. D., & Trapl, E. S. (2003). Parental monitoring, negotiated unsupervised time, and parental trust: The role of perceived parenting practices in adolescent health risk behaviors. *Journal of Adolescent Health, 33*(2), 60-70.
- Brown, B. B., Clasen, D. R., & Eicher, S. A. (1986). Perceptions of peer pressure, peer conformity dispositions, and self-reported behavior among adolescents. *Developmental Psychology, 22*(4), 521.
- Bryant, A. L., & Zimmerman, M. A. (2002). Examining the effects of academic beliefs and behaviors on changes in substance use among urban adolescents. *Journal of Educational Psychology, 94*(3), 621.
- Campo, A. T., & Rohner, R. P. (1992). Relationships between perceived parental acceptance-rejection, psychological adjustment, and substance abuse among young adults. *Child Abuse & Neglect, 16*(3), 429-440. doi: [http://dx.doi.org/10.1016/0145-2134\(92\)90052-S](http://dx.doi.org/10.1016/0145-2134(92)90052-S)
- Cassady, J. C. (2001). Self-reported GPA and SAT: A methodological note. *Practical Assessment, Research & Evaluation, 7*(12), 1-6.
- Converse, N., & LignugarisKraft, B. (2009). Evaluation of a school-based mentoring program for at-risk middle school youth. *Remedial and Special Education, 30*(1), 33-46.
- Cutrona, C. E., Cole, V., Colangelo, N., Assouline, S. G., & Russell, D. W. (1994). Perceived parental social support and academic achievement: An attachment theory perspective. *Journal of Personality and Social Psychology, 66*(2), 369.
- DeVellis, R. F. (2003). *Scale Development: Theory and Applications Second Edition (Applied Social Research Methods)*.
- Dubois, D.L. (personal communication, February 12, 2011).

- DuBois, D. L., Portillo, N., Rhodes, J. E., Silverthorn, N., & Valentine, J. C. (2011). How effective are mentoring programs for youth? A systematic assessment of the evidence. *Psychological Science in the Public Interest*, 12(2), 57–91. doi:10.1177/1529100611414806
- Dynarski, M., James-Burdumy, S., Mansfield, W., Mayer, D., Moore, M., Mullens, J., & Silva, T. (2001). A broader view: The national evaluation of the 21st Century Community Learning Centers Program. Design Report; Volume II: Instruments. Report submitted to the US Department of Education. Princeton, NJ: Mathematica Policy Research, Inc.
- Eccles, J. S., Vida, M. N., & Barber, B. (2004). The relation of early adolescents' college plans and both academic ability and task-value beliefs to subsequent college enrollment. *The Journal of Early Adolescence*, 24(1), 63-77.
- Eisinga, R., Grotenhuis, M. T., & Pelzer, B. (2012). The reliability of a two-item scale: Pearson, Cronbach, or Spearman-Brown. *International Journal of Public Health*, 1-6.
- Grossman, J. B., & Tierney, J. P. (1998). Does mentoring work? An impact study of the Big Brothers Big Sisters program. *Evaluation Review*, 22, 403–426.
- Henry, K. L., & Huizinga, D. H. (2007). Truancy's effect on the onset of drug use among urban adolescents placed at risk. *Journal of Adolescent Health*, 40(4), 358.e359-358.e317. doi: <http://dx.doi.org/10.1016/j.jadohealth.2006.11.138>
- Henry, K. L., & Thornberry, T. P. (2010). Truancy and escalation of substance use during adolescence. *Journal of Studies on Alcohol and Drugs*, 71, 115+.
- Herrera, C., Grossman, J. B., Kauh, T. J., Feldman, A. F., McMaken, J., & Jucovy, L. Z. (2007). Big Brothers Big Sisters school-based mentoring impact study. Philadelphia: Public/Private Ventures.
- Jensen, J.M. (2007). Aggression and Violence in the United States: Reflections on the Virginia Tech shootings. *Social Work Research* 31 (3). Retrieved from: http://www.uta.fi/arkisto/aktk/projects/sta/Jenson_2007_Aggression-and-Violence-in-the-USA.pdf
- King, K. A., Vidourek, R. A., Davis, B., & McClellan, W. (2002). Increasing self-esteem and school connectedness through a multidimensional mentoring program. *Journal of School Health*, 72(7), 294-299. doi: 10.1111/j.1746-1561.2002.tb01336.x
- Kogan, S. M., Brody, G. H., & Chen, Y.-f. (2011). Natural mentoring processes deter externalizing problems among rural African American emerging adults: A prospective analysis. *American Journal of Community Psychology*, 48(3-4), 272-283. doi: 10.1037/0003-066X.55.5.469 PMID:10842426
- Kuncel, N. R., Marcus, C., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Research*, 75(1), 63-82. doi: 10.1111/j.1559-1816.1993.tb01090.x
- Liem, G. A. D., & Martin, A. J. (2011). Peer relationships and adolescents' academic and non-academic outcomes: Same-sex and opposite-sex peer effects and the mediating role of school engagement. *British Journal of Educational Psychology*, 81(2), 183-206. doi: 10.1111/j.2044-8279.2010.02013.x



- Lubbers, M. J., Van Der Werf, M. P. C., Snijders, T. A. B., Creemers, B. P. M., & Kuyper, H. (2006). The impact of peer relations on academic progress in junior high. *Journal of School Psychology, 44*(6), 491-512.
- McDermott, R. J., Clark-Alexander, B. J., Westhoff, W. W., & Eaton, D. K. (1999). Alcohol attitudes and beliefs related to actual alcohol experience in a fifth-grade cohort. *Journal of School Health, 69*(9), 356-361. doi: 10.1111/j.1746-1561.1999.tb06429.x
- O'Malley, P. M., Johnston, L. D., & Bachman, J. G. (1998). Alcohol use among adolescents. *Alcohol Health & Research World.*
- Odgers, C. L., Caspi, A., Nagin, D. S., Piquero, A. R., Slutske, W. S., Milne, B. J., Dickson, N., Poulton, R., Moffitt, T. E. (2008). Is it important to prevent early exposure to drugs and alcohol among adolescents? *Psychological Science, 19*(10), 1037-1044.
- Ou, S. R., & Reynolds, A. J. (2008). Predictors of educational attainment in the Chicago Longitudinal Study. *School Psychology Quarterly, 23*(2), 199.
- Oxford, M., Oxford, M. L., Harachi, T. W., Catalano, R. F., & Abbott, R. D. (2001). Preadolescent predictors of substance initiation: A test of both the direct and mediated effect of family social control factors on deviant peer associations and substance initiation. *The American Journal of Drug and Alcohol Abuse, 27*(4), 599-616.
- Parler, J.G., & Asher, S.R. (1987) Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin, 102*(3), 357-389.
- Pharris-Ciurej, N., Hirschman, C., & Willhoft, J. (2012). The 9th grade shock and the high school dropout crisis. *Social Science Research, 41*(3), 709-730. doi: <http://dx.doi.org/10.1016/j.ssresearch.2011.11.014>
- Sánchez, B., Esparza, P., & Colón, Y. (2008). Natural mentoring under the microscope: an investigation of mentoring relationships and latino adolescents' academic performance. *Journal of Community Psychology, 36*(4), 468-482. doi: 10.1002/jcop.20250
- Sanders, C. E., Field, T. M., & Diego, M. A. (2001). Adolescents' academic expectations and achievement. *Adolescence, 36*(144), 795-802.
- Shippee, N. D., & Owens, T. J. (2011). GPA, depression, and drinking: A longitudinal comparison of high school boys and girls. *Sociological Perspectives, 54*(3), 351-376. doi: 10.1177/0044118x02250095.
- Sink, C., Barnett, J., & Hixon, J. (1991). Self-regulated learning and achievement by middle-school children. *Psychological Reports, 69*(3), 979-989.
- Tharp, A. T., & Noonan, R. K. (2012). Associations between three characteristics of parent-youth relationships, youth substance use, and dating attitudes. *Health Promotion Practice, 13*(4), 515-523. doi: 10.1177/1524839910386220
- Thoemmes, F. (2012). Propensity score matching in SPSS. arXiv preprint arXiv:1201.6385.
- Tonin, S. L., Burrow-Sanchez, J. J., Harrison, R. S., & Kircher, J. C. (2008). The influence of attitudes, acculturation, and gender on substance use for Mexican American middle school students. *Addictive Behaviors, 33*(7), 949-954. doi: <http://dx.doi.org/10.1016/j.addbeh.2008.02.014>



- Vandell, D.L. (2003). Study of Promising After-School Programs Student Survey Glossary. Retrieved from Wisconsin Center for Education Research at http://childcare.wceruw.org/pdf/pp/pp_glossary_student_survey_4_5_06.pdf
- Wentzel, K. R., & Caldwell, K. (1997). Friendships, peer acceptance, and group membership: Relations to academic achievement in middle school. *Child Development*, 68(6), 1198-1209. doi: 10.2307/1132301
- Winston, J. H. (1999). Scholastic competence subgroups among high school students with learning disabilities. *Learning Disability Quarterly*, 22(1), 3-10. doi: 10.2307/1511147
- Wong, E. H., Wiest, D. J., & Cusick, L. B. (2002). Perceptions of autonomy support, parent attachment, competence and self-worth as predictors of motivational orientation and academic achievement: an examination of sixth- and ninth-grade regular education students. *Adolescence*, 37(146), 255-266.
- Woodward, L. J., & Fergusson, D. M. (2000). Childhood peer relationship problems and later risks of educational under-achievement and unemployment. *Journal of Child Psychology and Psychiatry*, 41(2), 191-201. doi: 10.1111/1469-7610.00600
- Zimmerman, M. A., Bingenheimer, J. B., & Notaro, P. C. (2002). Natural mentors and adolescent resiliency: A study with urban youth. *American Journal of Community Psychology*, 30(2), 221-243.

