

THESIS

YOUTH INCREASE IN DEVELOPMENTAL ASSETS DURING A MENTORING  
PROGRAM REGARDLESS OF BASELINE RISK

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## ABSTRACT

### YOUTH INCREASE IN DEVELOPMENTAL ASSETS DURING A MENTORING PROGRAM REGARDLESS OF BASELINE RISK

The existing data on the benefits of mentoring programs for adolescent participants are promising, though often unclear in terms of who benefits the most and why (Raposa et al. 2019). In the literature, there tends to be an agreement that risk is likely to moderate program effectiveness to a certain extent, but there is inconsistency about whether greater risk strengthens or weakens program effects (Herrera et al., 2013; Weiler & Taussig, 2017). An important outcome to consider are developmental assets because the negative outcomes of youth risk can be mitigated through the presence of such factors (Scales & Leffert, 1999). The present study seeks to further investigate whether the benefits (in terms of developmental assets) that youth receive from participating in a therapeutic mentoring program differ by their individual level of risk-exposure prior to entering the program.

Participants were 676 youth (11-18 years old) who participated in the mentoring program Campus Connections (Haddock et al., 2017) for at least one semester. Each participant was paired with a trained undergraduate mentor and attended four-hour long sessions hosted one night a week for 12 weeks. Each session consisted of four components: one-on-one free time between mentor and mentee, mentor-provided school support, “family style” meals, and prosocial group activities (e.g., games, crafts, team sports). Mentees completed the Developmental Assets Profile (DAP, Search Institute, 2004) before and after completing the program; primary caregivers completed a baseline youth risk assessment.

Generalized estimating equation models were used to test the moderating effect of youth risk on change in youth developmental assets (controlling for gender, age, and ethnicity). Time and baseline risk were each significant predictors of developmental assets, such that there were significant increases in assets overall ( $b = 7.18, se = 1.15, p < .05$ ) and those with higher levels of baseline risk reported lower levels of overall assets ( $b = -1.51, se = 0.25, p < .05$ ). Whether change varied based on risk was tested via multiplicative interaction between time (baseline vs. post-test) and risk (mean centered) to predict levels of developmental assets. Risk was not a significant moderator, implying that on average youth gain developmental assets in a mentoring program regardless of baseline risk. These findings suggest that mentoring programs can benefit youth with a range of risk exposure.

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## INTRODUCTION

### **Youth Risk, Developmental Assets, and Mentoring Programs**

Ensuring the healthy development of at-risk youth is an area of psychological research that holds great importance. Mental health problems are a leading cause of health-related disability for children and adolescents worldwide, and the effects of such problems during early developmental stages can create negative effects that last a lifetime (Kieling et al., 2011). There are many existing intervention and treatment strategies that strive to promote healthy youth development, one of which is mentoring programs. The existing data on mentoring programs are promising, though often unclear or inconsistent in terms of who benefits the most and why (Raposa et al. 2019), which represents a significant gap in the current literature. In particular, it is unclear whether the risk level participants have been exposed to prior to beginning the program moderates program effectiveness in terms of youth experiencing an increase in developmental assets over the duration of the program. In the mentoring program literature, there tends to be an agreement that risk is likely to moderate program effectiveness to a certain extent, but there is inconsistency about whether greater risk strengthens or weakens program effects (Herrera et al., 2013; Weiler & Taussig, 2017). If the moderating effect of risk on youth mentoring programs were understood in more specific detail, these programs could better target the youth population that will benefit from them the most. Further, if it is found that mentoring programs designed for at-risk youth specifically are not actually benefiting the most vulnerable youth of the target population—those highest on the spectrum of risk exposure—existing youth mentoring programs would need to shift their strategies. The present study seeks to fill this gap in the literature by investigating whether the benefits (in terms of developmental outcomes) that youth receive from

participating in a therapeutic mentoring program differ by their individual level of risk-exposure prior to entering the program.

### **Youth Risk**

Youth risk is often defined in the literature as factors present in a youth's life that decrease their likelihood of following a normative developmental trajectory or successfully transition into adulthood (McCann & Austin, 1988). Youth risk can include environmental factors outside of the youth's control, such as poverty or exposure to violence, as well as individual risk factors concerning the youth's behavior, such as impairment in their social or academic competencies (Evans & Kantrowitz, 2002; Herrera, 2013). The present study does not differentiate between internal and external risk factors, considering they are both capable of contributing to these impairments. Experiencing risk factors during childhood and adolescence has a cumulative effect such that the more risk factors present in a youth's life, both internal and external, the more likely they are to face negative outcomes (Dong et al., 2004; Appleyard et al., 2005; Evans, Li, & Whipple, 2013). Risk exposure in childhood and adolescence has been demonstrated by multiple studies to have a variety of harmful impacts on the trajectory of development (Cicchetti & Toth, 2005; Felitti et al., 1998; Hodges et al., 2013). Higher risk can indicate more potential to benefit from a mentoring program; participants having a background of high internal or external risk have both been shown to predict more program effectiveness (DuBois et al., 2011).

### **Developmental Assets**

The negative outcomes of youth risk can be mitigated through the presence of protective factors, or developmental assets (Scales & Leffert, 1999). The Developmental Assets framework is an effort to conceptualize a strength-based approach to youth development by identifying 40

factors considered to be critical for a young person to achieve healthy developmental outcomes. Like risk factors, protective factors can be environmental/ external, or individual/ internal (Scales & Leffert, 1999). External assets include factors such as social support and care from trusted adults and a sense of feeling valued by your community. Internal assets include factors such as a commitment to learning and a strong sense of personal empowerment (Scales & Leffert, 1999). In 1998 The Search Institute completed a meta-analysis of 800 studies on youth development and strong evidence in support of this framework was obtained. More specifically, the greater the 40 Developmental Assets that are present in a youth's life, the less likely they are to engage in risky behaviors and the more likely they are to experience positive outcomes (Scales & Leffert, 1999).

### **Youth Mentoring Programs**

Promotion of healthy development and mitigation of risk are actively being explored through many different intervention strategies, one of which is mentoring programs (DuBois et al., 2011). The intention of youth mentoring programs is to encourage positive youth development through fostering a meaningful relationship between a child or adolescent and a caring, non-parental adult (Rhodes & DuBois, 2008).

The literature on youth mentoring shows consistently positive outcomes in participants' developmental trajectories, most often including improvements in the developmental factors of academic success, social competency, and emotional regulation (Eby et al., 2008). Such positive youth outcomes have also been demonstrated in populations of high-risk youth specifically (Keating et al., 2002). A recent meta-analysis indicates youth benefit from participation in youth mentoring programs, with a moderate mean effect size (based on the standards presented in the empirical guidelines for the average effect sizes of universal youth prevention programs (Raposa et al., 2019)) of  $d = .21$  across 70 studies of youth mentoring programs. It is important to note

that the majority of studies on youth mentoring have so far been pre-post test, non-experimental designs, and there is a need for more rigorous, experimental studies on the subject (Eby et al., 2008).

Very little research has been done on therapeutic mentoring, which is a specific form of mentoring program that the current study utilizes. The current study investigates Campus Connections, a youth mentoring program that offers a unique therapeutic component through the presence of family-therapy graduate students (Haddock et al., 2017). At any point throughout the program, mentees could request a check-in with a therapy student, or they could be referred to one by their mentor. These therapeutic check-ins could be on any subject troubling the youth, and could last between a few minutes to over an hour. Campus Connections has been shown to yield positive results with at-risk youth through qualitative analysis (Haddock et al., 2017).

### **Moderating Effects of Risk**

The current literature indicates that it is becoming a more common expectation that mentoring programs serve higher-risk youth, due to their ability to create a wide variety of benefits and their tendency to be relatively low-cost, but little is known about their capacity to actually reach and serve higher-risk youth (Herrera et al., 2013). The limited research that has been done to assess the differences in mentoring program effects based on youth risk has yielded inconsistent results. Multiple studies have found support for the notion that mentoring program effects do differ based on risk (Herrera et al., 2013; Weiler & Taussig, 2017), but the findings of these studies differ in terms of risk strengthening or weakening program effects.

One large-scale study analyzing seven different mentoring programs tested program effect sizes for youth that the researchers split into four different risk categories: youth that were high in both individual and environmental risk, low in individual/ high in environmental, high in

individual/low in environmental, and low in both individual and environmental risk (Herrera et al., 2013). The results of this study indicated that program effect size on the number of youth outcomes showing positive change varied for each of the different risk profile categories. Specifically, they found a high program effect size ( $d = .35$ ) for youth with high environmental but low internal risk factors, a small effect size ( $d = .03$ ) for youth who were low in both risk categories, moderate effects ( $d = .25$ ) for youth who were high in individual but low in environmental, and small to moderate effects ( $d = .16$ ) for youth who were high in both categories. These results indicate that the effects of mentoring programs on youth positive outcomes do vary based on their risk level, indicating risk level as a potential moderator. These results also indicate that those who benefited the least from these programs were those presenting the lowest on overall risk at baseline. One potential explanation for these results is that youth with higher risk level and fewer assets have more room for beneficial gains.

Further support for risk as a moderator of mentoring program outcomes was found by another mentoring study that utilized a sample of 156 youth in a 9-month mentoring program (Weiler & Taussig, 2017). They found via multiple regression that there were significant interactions between risk exposure and intervention effects. Contrary to the previous study, this study found that those who benefited least from the mentoring program were those presenting the highest on overall risk at baseline. It is possible that this result is due to higher risk being a predictor of difficulty forming social connections (Raposa, Rhodes, & Herrera, 2016), and the connection formed between mentor and mentee being a driving force of mentoring program success (Renick & Zand, 2010). For the moderating effect of risk on mental health functioning post treatment, they reported a moderate effect size ( $d = .17$ ). Mental health functioning is one of

the many assets covered by the scale the present study will utilize to assess developmental assets, so I expect to see similar results.

There are no clinical or therapeutic components to the mentoring programs used by these studies, which creates a distinction between them and Campus Connections that may yield different results in terms of what level of risk predicts more beneficial outcomes. It is possible that a therapeutic mentoring program, designed to provide more mental health support, is more likely to benefit higher-risk youth who are more in need of such services.

### **The Current Study**

There is limited research exploring risk as a moderator for youth mentoring program outcomes. The goal of the present study is to examine the effects of a youth mentoring program on changes in developmental assets while accounting for baseline risk. Based on the existing literature, I hypothesize that baseline youth risk level moderates change in developmental assets from before to after participation in one semester of a therapeutic mentoring program, Campus Connections. Due to the unique therapeutic component of Campus Connections, I hypothesize that all youth in the sample benefit by gaining protective factors (e.g. positive peer relationships and academic skills) over the course of the program, but youth presenting higher in risk at baseline benefit more from the program than their peers presenting lower baseline risk levels in terms of gains in developmental assets.

## METHOD

### **Participants**

The sample of the present study consists of youth who participated in the mentoring intervention program, Campus Connections (CC), for at least one semester. Youth were recruited to the CC program by self-referral as well as referrals from community agencies such as the local school district, juvenile justice system, Department of Human Services, and various youth and family agencies. Upon referral, a CC staff member would conduct an intake appointment with the youth and their family to determine if the youth met the eligibility criteria. Youth were considered eligible to participate in the current study if they were between 11 and 18 years old at intake and were able to participate consistently in Campus Connections during its scheduled hours and at its location on the Colorado State University campus.

The current sample included 676 youth, or mentees. The mean age of the mentees was 14.3 years ( $SD = 1.81$ ). Over half (57%) of the mentees were male. Over half of the mentees identified as White (56.9%), 27.1% as Hispanic/Latino, 10.5% as multiracial, 3.3% as African American/Black, 1.3% as American Indian/Alaska Native, 0.2% as Asian American, and 0.7% did not report on race/ethnicity. Due to the local recruitment strategy and the criterion that mentees be able to be physically present at the CSU campus weekly, the entirety of the sample lived in Larimer County, Colorado.

### **Procedure**

The present study utilizes data from a larger parent study (Haddock et al., 2020). Only the procedures relevant to the current study are listed here. The larger study was a randomized control trial designed to test if creating small groups out of a few mentor-mentee pairs would

enhance the effects of the mentoring program; some pairs were randomized to be in a small group and some remained in a control condition that did not participate in a group (Haddock et al., 2020). This study found that most measured outcomes improved from pre- to post-intervention across both conditions, and the mentoring groups were not shown to create stronger effects. Therefore, for the purposes of the current study, both mentoring groups will be combined. All mentees and parents who consented to participating in the research were asked to complete the same surveys before and after youth participation in one semester of the CC program.

Once youth were found to be eligible for participation, a CC staff member obtained written, informed assent as well as parental consent. Youth and their parents then completed a baseline survey which was administered at the CC facility through Qualtrics. Prior to the start of the CC semester, undergraduate volunteers completed 18 hours of mentor training and mentor profiles where they self-reported their own characteristics and interests. Upon entering the CC program, youth were shown a variety of mentor profiles and were able to choose their own mentor based on this information. Campus Connections does not match participants based on race or ethnicity, which has been shown to predict lower program effects (DuBois et al., 2011). The mentor the youth chose would remain their mentor and participate in all CC activities with them for the entirety of the semester.

The program was held in four-hour long sessions hosted one night a week for 12 weeks. Each of the 12 sessions was divided into the same four activities. CC sessions began with “Walk and Talk,” a 30-minute interval where youth and mentors spent time outside together to tour the CSU campus and hold unstructured conversations. This was followed by “Supporting School Success,” an hour-long interval where mentors provided one-on-one assistance with any school

related work the mentee had brought in for that night, including work such as homework assignments and college applications. Next, groups of mentors and mentees would gather together to eat “family style” meals that were provided by the Larimer County Food Bank. Each CC session concluded with roughly two hours of pro-social activities, which were led by groups of mentors. These activities varied each night and included things such as team sports, cooking lessons, arts and crafts, and dancing.

The therapeutic component of Campus Connections is characterized by the offer of integrated mental health services that can be utilized by the mentees at any point in the night. Colorado State University graduate students who were earning their master’s degrees in marriage and family therapy operated these services. Mentees were able to voluntarily check in with one of these counselors, or they may have been referred to them if they said or did something during the night that the mentors perceived as a sign that they needed help regarding their mental health. These signs may have included expressing a desire to hurt themselves or others, refusing to eat during family meals, or telling their mentor about something harmful going on in their home lives.

One week following the last night of CC for the semester, parents and youth completed a Qualtrics survey at the CC facility again. Each parent and youth was compensated 10 dollars for each timepoint they completed a survey. The present study utilizes the pretest risk assessment completed about the youth by their parents, as well as both the pre- and post-test developmental assets profiles completed by the youths about themselves.

## **Measures**

### *Developmental Assets*

The dependent variable of the present study is change in developmental assets over time. Youth baseline developmental assets level was measured within one month before youth beginning participation in the program with the Developmental Assets Profile (DAP, Search Institute, 2004). This measure consists of 58 Likert scale items that ask youth about their social-emotional strengths and supports. Examples of the items include “I feel good about myself” and “I feel valued and appreciated by other people.” The answer choices range from one to four with one being “rarely” and four being “almost always.” Youth posttest developmental assets level was measured by the same scale within a month of completion of the program. The validity and reliability of the DAP have been tested extensively by the Search Institute and they have demonstrated that it is high in internal consistency, test-retest reliability, and convergent validity with related measures (Search Institute, 2018).

#### *Baseline Risk Level*

Youth baseline risk level will be tested as a moderating variable and was measured at the same time as baseline developmental assets with the parent-reported Youth Risk Assessment (Herrera et al., 2013). This measure consists of 32 true/false statements that ask parents to report on both the environmental and internal risk their children may be facing. Examples of environmental risk items include “The child’s household income is below \$20,000” and “This child has seen or experienced many fights or arguments at home in the last 12 months.” Examples of internal risk items include “This child has used or experimented with drugs or alcohol” and “This child often says he/she feels alone, sad, upset, cries a lot or is unhappy.” This scale was designed specifically for use in assessing youth in therapeutic mentoring programs, and has been demonstrated to be a reliable and valid measure of youth risk (Herrera et al., 2013).

#### *Control Variables*

Youth gender, age, and ethnicity will be used as covariates. Multiple studies examining the effects of gender on youth mentoring outcomes have found a tendency for girls in such programs to form higher quality relationships to their mentors in less time than boys (Rhodes et al., 2008; Spencer et al., 2018) which may impact overall program outcomes. A meta-analysis of mentoring outcomes, however, demonstrated that programs serving a larger proportion of male youth tended to have greater program effect sizes (Raposa et al., 2019). These conflicting findings suggest it will be important to control for gender when examining youth program outcomes. In addition, the age range of the sample varies from 11-18 years, with the entire sample participating in the same activities regardless of age. This is a wide age range during which dramatic social and psychological changes occur (Blakemore, 2012), so age will be used as a covariate.

### **Data Analytic Strategy**

I used a generalized estimating equation (GEE) to test the moderating effect of youth risk on mentoring program outcomes in terms of youth developmental assets. GEE analysis is a regression-based approach to examine repeated measures (e.g., Ballinger, 2004). GEE has been shown to produce more accurate and unbiased estimates when data are correlated than ANOVA-based models (e.g., Zeger & Liang, 1986). This equation tested changes in developmental outcomes over time based on risk by using time in the mentoring program as the independent variable, changes in developmental assets as the dependent variable, and baseline risk as the moderating variable. The moderation was tested via multiplicative interaction between time (baseline vs. post-test) and risk (mean centered) to predict levels of developmental assets. Interpreted significant interactions following the guidelines presented by Aiken and West (1991). Youth gender, age, and ethnicity were used as control variables.

## RESULTS

**Table 1**

*Bivariate Correlations Between Baseline Assets, Posttest Assets, Baseline Risk, and Controls*

	Baseline Assets	Posttest Assets	Baseline Risk	Male	Ethnicity 1	Ethnicity 2	Age
Baseline Assets	X						
Posttest Assets	.623**	X					
Baseline Risk	-.236**	-.167**	X				
Male <sup>a</sup>	.097**	.01	.011	X			
Latin X <sup>b</sup>	.037	.048	.042	-.047	X		
Other <sup>c</sup>	.062	.017	.028	.057	-.259	X	
Age	-.196**	-.222**	.074**	-.023	-.033	-.099**	X
M	168.16	176.32	7.18	.58	.25	.17	14.19
SD	27.81	33.24	4.05	.49	.43	.37	1.8

<sup>a</sup>0 = female, 1 = male

<sup>b</sup>1 = Latinx, 0 = not

<sup>c</sup>1 = other, 0 = else

Based on the correlations presented in Table 1, there was a significant, strong, and positive correlation between baseline and posttest assets, and assets at both time points were negatively correlated with baseline risk. In addition, males entered the program with significantly more assets than their female peers. Surprisingly, there was no significant correlation of mentee ethnicity with either assets nor risk. However, mentee age was significantly but weakly negatively correlated with both baseline and posttest assets, and significantly positively

correlated with baseline risk, indicating that being older was associated with more risk exposure and less assets at both timepoints.

**Table 2**  
*Generalized Estimating Equation (GEE) Models Predicting Developmental Assets Based on Time, Risk, Age, Gender, and Ethnicity*

	Model 1		Model 2	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Time	7.18*	1.15	6.53*	2.19
Baseline Risk	-1.51*	0.25	-1.54*	0.25
Age	-2.98*	0.53	-2.98*	0.53
Male	3.64*	1.95	3.63*	1.95
Latinx	3.71	2.38	3.72	2.38
Other Race	-1.51	2.83	3.26	2.83
Time x Risk			0.08	0.3

Based on the results of the GEE analysis in Table 2, time and risk were each significant predictors of developmental assets. Time significantly predicted a higher level of assets, or in other words, the level of average assets a participant had significantly increased over time spent in the program. Baseline risk also predicted a lower level of assets, averaged across both timepoints. However, risk was not a significant moderator of the change in assets over time, implying that time spent in the program is a significant predictor of higher developmental assets regardless of baseline risk.

## DISCUSSION

The objective of this study was to investigate the impact of a therapeutic mentoring program on changes in developmental assets for participants when considering the potential moderating effects of baseline risk exposure. Results indicated that baseline risk was not a significant predictor of the *changes* in developmental assets that result from participation in the program; however, overall, assets significantly increased from baseline to posttest. These findings support the literature that youth with both high and low risk exposure can benefit from mentoring programs (Herrera et al., 2013; Eby et al., 2008) and challenge previous studies that have found risk to be a moderator of program effects (Herrera et al., 2013; Weiler & Taussig, 2017).

I used a generalized estimating equation with a multiplicative variable between time and risk to analyze the effect of risk as a moderator for the changes in assets seen over time. This variable was not a significant predictor of changes in assets, which indicated that risk was not a moderator of the changes from baseline to posttest. Instead, both time and risk were predictors of posttest developmental assets independently, with time spent in the program predicting higher posttest assets and baseline risk predicting lower, but the insignificance of the moderator variable indicated that time in the program still predicted a higher level of posttest developmental assets regardless of baseline risk exposure. This suggests that youth with high risk exposure and youth with low risk exposure can all benefit equally in terms of gaining important developmental assets from mentoring programs. These findings are not consistent with previous studies that have found risk to be a moderator of mentoring program effects, either as a predictor of more (Herrera et al., 2013) or less benefits (Weiler & Taussig, 2017).

These previous studies, however, do not include a therapeutic element like Campus Connections does, which may explain the inconsistency. Even a single session of individual therapy has been shown to be significantly beneficial to adolescents (Perkins & Scarlett, 2008). The therapeutic component of Campus Connections was accessible to every mentee at any point during program sessions, and each mentee was able to choose if/ how often they would utilize this resource. It is possible we saw these results because mentees with higher risk exposure were utilizing the trained therapists on site more regularly, leading to more beneficial outcomes.

It is also important to consider the effects that the therapeutic component has on the mentors, and by extension, the quality of the mentor-mentee relationship. Previous studies have found a few variables that significantly predict both mentoring impact and strength in the mentor-mentee relationship, specifically for youth mentees with higher risk exposure. These predictive variables include mentor self-efficacy (Raposa, Rhodes, & Herrera, 2016) and mentor perception of the program structure and support (Weiler, Boat, & Haddock, 2019). It is possible that in Campus Connections, the reliable presence of the trained counselors and option to utilize their expertise at any time strengthens the mentors' own sense of self-efficacy and perception of support, and this then buffers the effect of youth risk.

Meanwhile, mentees with lower risk exposure still benefited just as much as their peers with higher risk exposure. They were more likely to both enter and exit the program with more assets than those with higher risk, but they were not more likely to see a larger change in assets over the course of the program. With this in mind, it is important to consider the risk profiles of the mentees involved in this study. The average number of risk experiences mentees reported was 7.18, and the standard deviation 4.05. The threshold number of Adverse Childhood Experiences (ACEs) shown to create significantly greater risk is four (Campbell et al., 2016).

The risk profile used in this study was not the ACE scale, but did account for similar experiences. Assuming the risk assessments are similar enough to extrapolate between them, the average mentee in this study was at high risk (i.e., greater than 4 risks), with one standard deviation below the mean still being very close to high risk as well. Although the sample was composed of youth facing multiple adversities, individuals still had unique risk profiles, meaning the type and number of risk exposures still varied. These results would then be consistent with findings from a previous study that youth with differing risk profiles had mentee-mentor relationships of similar strength and duration and derived similar benefits from program participation (Herrera et al., 2013).

In addition, on average, mentee developmental assets increased over time spent in the program, controlling for baseline risk, gender, and age. These findings are consistent with the growing literature finding more and more support for the efficacy of mentoring programs as a means of promoting youth health and wellness (DuBois et al., 2011; Eby et al., 2008).

Interestingly, greater age predicted lower levels of assets averaged between both timepoints, and being male predicted a higher level of assets averaged between both time points. Examination of the correlations indicated that this gender difference was only evidence at baseline. More specifically, there was a relatively small gender difference in baseline assets such that male mentees entered the program with significantly more assets on average than their female peers. There was, however, no significant gender difference in posttest assets, indicating that the relationship between the two shrinks over the course of the program. These results differ from previous findings that male mentees benefit more than female mentees in mentoring programs (Raposa et al., 2019), but may be explained by the finding that female mentees tend to

form stronger relationships with their mentors in less time than male mentees (Rhodes et al., 2008; Spencer et al., 2018).

Finally, age was significantly associated with higher baseline risk and lower assets averaged across time points such that being older indicated having been exposed to more risk and having less assets both before and after completion of the program. This association between risk and age is aligned with previous findings that risk increases across adolescence (Willoughby, 2021). Given the relationship between risk and developmental assets (Scales & Leffert, 1999), it also makes sense that in this study there is a correlation between greater risk exposure and fewer developmental assets. This connection with age is not unusual; previous studies have found that developmental assets do follow a pattern of declining from middle to high school (Scales et al., 2006).

### **Limitations and Future Directions**

Despite strengths such as the large and diverse sample, there were several limitations of the current study. The majority of studies on youth mentoring have so far been pre-post test, non-experimental designs (Eby et al., 2008), and this study is no exception. There remains a need for more rigorous, experimental, and longitudinal studies on the subject of mentoring which future research should consider.

The findings presented are limited by potential cohort effects on multiple levels. This study used data collected from multiple semesters and from a program that operated four nights per week with an entirely different group each night. Additionally, each night's group was split into a "mentor family" consisting of a few mentor-mentee pairs. However, the larger study that this data is pulled from found that this embedding of mentor-mentee pairs into larger groups had no advantage or disadvantage on overall program outcomes (Haddock et al., 2020).

Future research may want to consider the potential moderating effects of risk in non-therapeutic mentoring programs. The present study used data collected from a therapeutic mentoring program, and it is possible that these results do not generalize to programs that lack this component. Considering the success therapeutic mentoring programs have had in reducing trauma symptoms (Johnson & Pryce, 2013) and the previous findings that risk is a moderator of mentee outcomes in non-therapeutic mentoring programs (Herrera et al., 2013; Weiler & Taussig, 2017), the possibility that non-therapeutic mentoring programs see a greater differential in benefits obtained from the program based on participant risk exposure is worth exploring.

Lastly, it is possible that dosage of the program in general, as well as dosage of the therapeutic element of the program, had a moderating effect. The present study was unable to include this possibility in the analysis as attendance was not included in the dataset. Not all participants attended every session in a given semester and it is possible we would have seen different results if we had controlled for attendance. However, other studies indicate that the length of time spent with a mentor is not a significant predictor of mentee outcomes (Kolar & McBride, 2011).

## **Conclusion**

The present study found that in general, there was an increase from baseline to posttest in developmental assets for youth after participating in the mentoring program, Campus Connections. In addition, baseline risk did not predict greater change in assets across the program. Those who entered with higher levels of risk and those who entered with lower levels of risk were both equally likely to experience gains in developmental assets over the course of time spent in Campus Connections. This pattern was found when controlling for mentee age,

gender, and ethnicity. These findings suggest that youth with a variety of risk exposure are equally likely to benefit from therapeutic mentoring programs.

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