Environmental and Personal Factors in a Community-Based Juvenile Offender Intervention

Final Report

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Abstract

Research demonstrates that youth violence is perpetrated by relatively small numbers of repeat offenders (Kennedy, Braga et al. 2001). Low success rates of rehabilitation strategies underscore the need for new intervention models. Evidence supports efficacy of community-based intervention programs, but implementation of such programs has not been consistent, nor has research on factors that promote success been systematic. Further, many programs measure communitywide success, but not the individuals' success. Here we report preliminary findings of a study of youth offenders in Houston, TX within the context of readiness-for-change. In addition to preliminarily evaluating a community-based intervention, the overarching aim of the study was to gain understanding of factors that affect recidivism in order to inform development of successful community-based interventions for juvenile offenders. Findings include support for the effectiveness of community-based intervention on the rate of recidivism in youth offenders, the importance of factors related to readiness-for-change in response to intervention, and the sensitivity of a measure of personal prosocial attitudes in relation to recidivism.

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GRANTEE NAME: Baylor College of Medicine PI Gerri Hanten
GRANT NUMBER: 2012-MU-FX-0003
REPORTING PERIOD: August 1, 2015 to December 31, 2015

1. TOTAL NUMBER OF YOUTH SERVED DURING THE REPORTING PERIOD: N/A

2. EXECUTIVE SUMMARY:

We had 5 primary goals for this project: 1, to obtain individual and environmental data on 75 youth offenders; 2, to relate these data to recidivism; 3, to relate these factors to prosocial change; 4, to relate mentor and officer factors to intervention success (prosocial change + decline in recidivism); 5, disseminate our findings. Our partners included ReVision, a community-based, mentor-centered youth support organization in Houston, Texas, and Harris County Juvenile Probation Department (HCJPD) in Houston, Texas.

Goal 1: Our original enrollment included enrollment and data collection of 75 youth. We fell short of that number by 23 youth, but nonetheless, because effect sizes were generally large, we obtained data sufficient to complete analyses for Objectives 1-3.

Goal 2: Analyses are ongoing on this rich dataset, as well as on the comparison data obtained from Harris County Juvenile Probation Department, but the findings to date include: 1, a strong endorsement of community mentor-based programs (specifically ReVision); 2, the finding that rate of reoffending is a more sensitive and powerful predictor than the number of offenses; 3, there is a very weak relationship between violations of probation and later reoffending; 4, there appears to be a cubic relationship between time in placement (including detention) and rate of recidivism; 5, individual variables including cognitive skills such as memory updating, cognitive styles encompassing processes of thinking about change, and personality-related factors such as self-efficacy appear related to decreases in recidivism. Interestingly, and contrary to our initial hypotheses, a youth's readiness for change did not predict his initial response to the ReVision program or his initial rate of recidivism. However, we believe this is a problem with a restricted range of scores within the initial sample. Future analyses are planned on the longitudinal data to determine if trajectory of readiness for change is related to future decreases in recidivism and a longer-term positive response to the ReVision program (we provide more details regarding this null finding later in the progress report).

Goal 3. As a part of this project, we collaborated with ReVision to develop a ProSocial Status instrument to measure characteristics and attitudes that may signal a youth's movement away from criminal behavior and towards pro-social behavior in youth offenders. Our preliminary findings endorsed the use of the instrument as a strong predictor of decreased rate of recidivism.

Goal 4. Data collection of mentor and officer factors is ongoing (via OJJDP 2014 JU-FX-0001), but was less robust than originally expected for this project. However, steps have been implemented to ameliorate this weakness. To date, 28 mentors have completed measures and interviews, with 5 additional mentors scheduled for January 2016. Due to changes in the ReVision mentor program, the potential for additional mentor participation going forward is high, with 250 mentors in the ReVision database of volunteers. Officer recruitment will continue, but we have also developed new approaches to address the question of the influence of officers on the youth offenders' response to intervention (please see details below).

Goal 5. Dissemination of findings. Although analyses are ongoing, we have presented 2 major papers at the American Criminology Society meeting in Washington D.C., which took place in late November, 2015. A paper was also presented at the National Association of Social Workers Texas Chapter conference in Galveston, TX in October, 2015 In addition, we have 3 manuscripts nearing completion, which we hope to submit soon.

In the next phase of the extended project (2014-JU-FX-0001), we will extend follow-up assessments to 24 months as we continue analyses with the data collected to answer many fundamental questions regarding the prediction of intervention response based on cognitive and environmental status.

Table 1		Notes
Total Referrals from HCJPD	**133**	**39 ineligible because not in ReVision service area;** **7 of these were ineligible because of previous history with ReVision (therefore unable to provide true pre-intervention baseline);** **3 declined participation in ReVision** **4 other: did not fit criteria for enrollment in ReVision – pre qualifying IQ, mental disorder, specific type of criminal history (i.e., sex offenders), etc.**
Number eligible	**80**	**8 refused participation in study** **15 parents or youth unresponsive to requests for consent or scheduling** **1 deceased**
Number consented/enrolled	**51**	
Additional number agreed, pending consent	**5**	
Baseline Assessments completed	**51**	**2 dropped – IQ (assessed after enrollment) revealed not eligible for ReVision** **2 deceased (following BL)** **1 reoffended, discontinued ReVision services** **1 refused to continue ReVision or study participation**
3 month assessments completed	**25**	
6 month assessments completed	**12**	
12 month assessments completed	**6**	
Number lost to follow up (or missed assessment)	**6**	
Mentors	**28**	

Other accomplishments.

As a consequence of our findings on this project, HCJPD has taken under consideration certain of our results that inform the calculation of risk with regard to releasing individual youth into the community. We are pleased that we have also been invited to participate in a county-wide initiative to enhance the efficiency and efficacy of HCJPD. As well, several opportunities to aid the rehabilitation of youth in collaboration with the ReVision program and HCJPD are under discussion.

3. STATUS OF PROJECT GOALS/OBJECTIVES:

Table 2 (from the grant submission) shows Objectives, Benchmark Measures, Source and Target Goals for the project.

Table 2: Performance measures by objective, data provided, source and target goal			
Objective	Benchmark measures	Source of data	Target goal
(1) Obtain measurements of youth offenders environment, individual factors	(A) Number of youth screened, recruited and consented for project.	Grantee (BCM research team)	~3 youth per month. 100 in 30 months
	(B) Number of youth completing assessment at baseline, 3-, 6- & 12 months.	Grantee (BCM research team)	74 by 12 month follow-up
(2) Relate factors to recidivism	(A) Bimonthly reports of number of youth who violated conditions of probation.	HCJPD	100% reports
	(B) Bimonthly reports of number of youth who reoffended.	HCJPD	100% reports
(3) Relate factors to pro-social change	(A) Monthly reports on positive tokens of prosocial change	ReVision staff	100% reports for youth in intervention
(4) Relate probation officer /mentor factors to intervention success	(A) Number of Mentors & probation officers recruited and consented for project.	Grantee (BCM research team)	90%
(5) Disseminate information	(A) Description of analyses and preliminary findings	Grantee (BCM research team)	Anticipate prelim findings by end of Year 2
	(B) Number of presentations and manuscripts (in preparation, submitted, in press or published).	Grantee (BCM research team)	2 per year
	(C) Number of collaborative group meetings, teleconferences and in-service presentations with HCJPD & ReVision.	Grantee (BCM research team)	6 per year

Project Objective 1: Obtain cognitive, environmental, and personality measures of youth offenders involved in the ReVision program at (A) baseline, and (B) follow-ups at three, six months, and one year following detainment.

Target Goal 1A: Recruit approximately 3 youth per month to participate in the study. By grant's end, we recruited 51 youth, a shortfall of approximately 30%.

Status: Completed ☐   Partially met ☒   Not met at all ☐

Indicate Number of Youth Served: N/A

Activity: Referral, recruitment, consenting, and testing participants.

Postmortem: Largely, the shortfall we experienced was a product of policy change by Harris County Juvenile Probation Department that in turn affected ReVision by directly, and dramatically reducing the number of youth who qualified for referral to ReVision. Specifically, HCJPD changed the pattern of placement of youth so that the youth to be placed in facilities within our and ReVision's purview included a much greater proportion of youth referred to treatment for mental disorder and for intervention specific to sex offenders, both of which were excluded from our study. Due to this change in referral policy of HCJPD, we suffered a steep decline in recruitment shortly after our process was fully established. Because we were not notified *a priori* of this change, there was a lag between the implementation of the new HCJPD policy and our realization that our numbers falling off was not just a seasonal cycle. Once we uncovered the cause of the decline, discussions and plans we implemented with ReVision and HCJPD to correct this situation proved effective, and baseline recruitment generally returned to predicted levels, although did not increase enough to allow us to make up for the incurred shortfall. Of note, we will continue baseline testing duration of the current project (2014-JU-FX-0001) until we reach our recruitment objectives, which will add to the means of the early time points and reduce variability, as well as allow for secure findings for the predictive models we developed.

In addition to reducing the power of in our analyses, as mentioned in earlier Progress Reports, we had concerns about the new HCJPD policies possibly creating a bias in recruitment. Although discussions with all parties led us to tentatively conclude that the methods used to restrict the number of participants in ReVision were not likely to lead to bias in the data, (that is, they use a first-come-first serve policy for youth when a opening is available, we nonetheless felt compelled to perform analyses on the data to establish that the nature of the study sample did not fundamentally change over time. To that end, we examined the factors that emerged as predictors as well as selected study-specific factors (please see Table 3).

Target Goal 1B: Obtain follow-up data on youth participants at 3, 6, and 12 months after enrollment. Following directly from the situation with the baseline testing, we experienced a shortfall in follow-up assessments.

Status: Completed ☐   Partially met ☒   Not met at all ☐

Indicate Number of Youth Served: N/A

Activity: Follow up testing.

Progress: We have completed 25 three-month follow-ups, 12 six-month follow-ups, and 6 twelve-month follow-ups. There are 3 six-month, and 10 twelve-month assessments due for follow up (via 2014-JU-FX-0001) in the next several weeks.

Postmortem: A portion of our difficulty in obtaining follow-up data was a consequence of the HCJPD policy change, as reported above. The approximate percentages are shown in Table 1. Further, many youth transitioned out of ReVision programming as probation requirements became less demanding, e.g. number of PO check-ins decreased, etc. Over this time, youth became more engaged in family and school activities, and scheduling became difficult. Youth often viewed assessment scheduling as competing with other preferences for free-time activity (despite gift cards for their time and participation). Another challenge was the transient nature of youth's housing and changes to phone numbers, which made it difficult to continue contact. Lastly, despite much of the success of community-based programming, some youth committed additional charges which placed them in-out-of-state treatment facilities or the adult criminal justice system.

Project Objective 2: Relate cognitive, environmental, personality, and relationship factors to recidivism.

Target Goal 2A and 2B: Obtain information from HCJDP on number of youth who have violated terms of probation and who have reoffended.

Status: Completed ☒   Partially met ☐   Not met at all ☐

Indicate Number of Youth Served: N/A

Activity: Obtain information on re-offenses and probation violations for study youth from HCJPD.

Postmortem: We were able to obtain all variables of interest for the demographically matched non-ReVision control participants and participants in ReVision. These datasets were large and comprehensive, and unexpectedly required a great deal of time to verify (as there was significant variability in data quality, possibly due to the number of persons entering data), organize, code, and format. We conducted extensive analyses of the two groups (ReVision youth and non-ReVision youth) and were able to ascertain that the groups were largely closely matched on demographic variables, and also on history variables and other proximal and distal influences (please see Table 3). We also verified that the ReVision program was associated with a significantly **decreased** rate of recidivism over time.

An ancillary activity was to create and test models that best predict recidivism, which was successfully completed. This involved testing the effect of important potential predictors by including the specific variable in models with group and follow-up-time controlled. The potential predictors were: age-at-first-offense, age-at-index-offense, race, severity-of-first-offense (felony vs. non-felony) , severity-of-index-offense (felony vs. non-felony), most-severe-offense-before-index-offense(felony vs. non-felony), number-of-offenses-in-the-past, number-of-placements-in-the-past, cumulative-time-stayed-in-placement-in-the-past. Although , age-at-first-offense, severity-of-index-offense, most-severe-offense-before-index-offense, cumulative-time-stayed-in-placement-in-the-past and number-of-placements-in-the-past were significantly related the recidivism, when follow-up-time, linear and quadratic form of age-at-index-offense, race and number-of-offenses-in-the-past were included in the model, the effect of other variables were no longer significant. Therefore those variables were dropped from the model. The model was then used to test various of environmental and personal predictors of recidivism and prosocial status.

Table 3 Characteristics of ReVision vs Control Youth.				
Variable	Control Mean (SD)	ReVision Group Mean (SD)	Significance test value	P value
Age at first offense	13.0 (1.22)	14.07 (1. 52)	t = -0.73	0.468
Age at index event	14.90 (1.14)	15.17 (1.12)	t = -1.36	0.176
Severity of 1st event % felony	29.75	30.95	Chi-square = 0.021	0.883
Severity of index event % felony	33.06	26.19	Chi-square = 4.86	0.087
Race (% Black vs other)	57.02	45.24	Chi-square = 1.74	0.187

Notable Findings:

Using the model created (described above), examination of number of offenses committed per month (rate) revealed that the youth in the ReVision community-mentoring program had a lower re-offense rate than did the control group, and that the difference in rate did not change significantly with time (please see Figure 1). Our analyses also revealed that the re-offense rate for both groups changed with time out of placement (Free Follow-up Time) and is associated with age at the index event (please see Figures 1& 2).
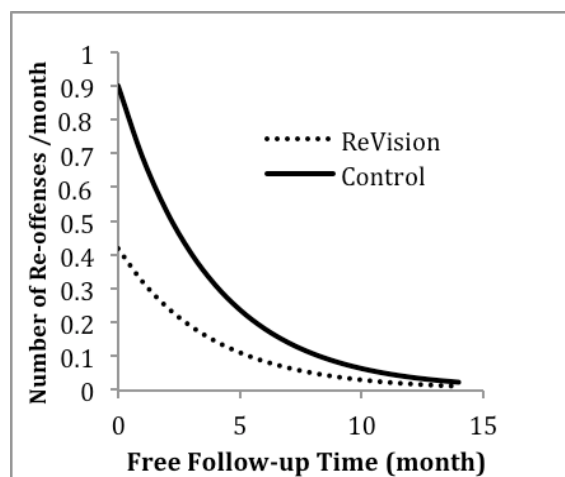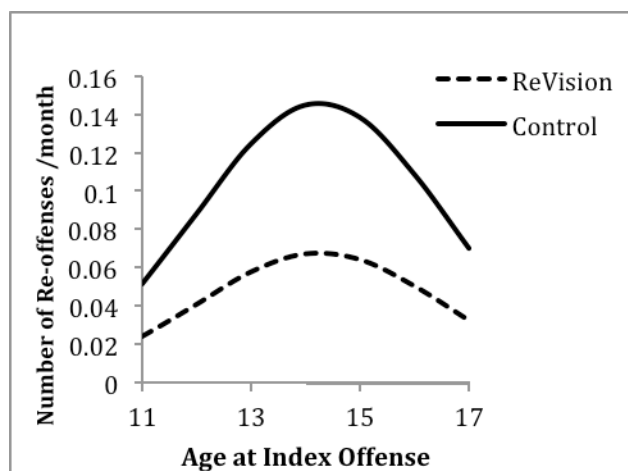
Cognitive variables were less consistently related to recidivism. We had predicted that basic academic skills, specifically the Woodcock-Johnson tests of reading, would be related to recidivism, following the general literature. However, for our youth in the ReVision study, reading fluency did not emerge as a significant factor in recidivism.

However, we did find that a measure of updating memory, a challenging executive memory measure, was predictive of recidivism, in the expected direction. That is, the better able a youth was to update his memory in a continuous task, the less likely was he to re-offend, estimate = - 0.0124, z = -2.20, p = 0.0281.

Surprises: Our hypotheses included a predictive role for Readiness for Change, as measured by a modified version of the University of Rhode Island Change Assessment (URICA). In our preliminary analyses, we saw a strong relationship between a high Precontemplative Score and subsequent recidivism. This, it turns out, was an artifact of the HCJPD database system, in which the "index event" that is, the event that caused the youth to be referred by HCJPD to ReVision, was tagged, and any infractions entered after that were labeled as "recidivism". The artifact arose when charges ancillary to the index event were considered later than the index event, and so were entered into the "subsequent offenses" column. Once we discovered the problem, we went through the data line-by-line, to ensure that charges were appropriately categorized. Analyses of the re-classified data revealed a notable lack of relationship between Readiness for Change and recidivism. However, pending completion of all of our twelve and twenty-four month follow-up we intend to re-analyze the data examining the influence of the trajectory in readiness for change to determine if this influences the rate or likelihood of recidivism.

In contrast, in one instrument, Processes of Change, which is theoretically linked to Readiness for Change (Prochaska & DiClemente, 1992), several subscales were associated with recidivism even after controlling for the above-mentioned variables. These were: 1) Counter Conditioning (that is, learning prosocial behaviors as substitutes for antisocial ones), estimate = - 0.1612, z = -3.10, p = 0.0019; 2); Dramatic Relief, estimate = -0.1760, z = -2.32, p = 0.0203; Environmental Reevaluation (marginal), estimate = - 0.1033, z = -1.80, p = 0.0719; Self Reevaluation, estimate = - 0.0993, z = -2.04, p = 0.0413; Self Liberation (marginal), estimate = - 0.0873, z = -1.77, p=0.0775.

In addition, Self-efficacy (consistent with the Transtheoretical Model of Change) was found to be significantly and negatively related to recidivism: estimate = - 0.0810, z = -2.11, p = 0.0345.

Project Objective 3: Obtain information on prosocial change from participants in the study.

Target Goal 3A: Obtain prosocial change data on all youth enrolled in the study for assessment time point period. This dataset was limited to youth enrolled in ReVision, as we did not have the resources to administer the Prosocial Status instrument to all HCJPD youth.

Status: Completed ☒   Partially met ☐   Not met at all ☐

Indicate Number of Youth Served: N/A

Activity: Acquire data on prosocial status and examine its efficacy in prediction of recidivism.

Postmortem: Although work remains to be done on this instrument, it shows great promise in the identification of youth at least risk for recidivism. Of the measures we administered, it was among the most powerful predictors of decreased rate of recidivism. The measure included an internal validity scale, comprising elements unrelated to prosocial status.

On this measure, we found that within our initial model (which did not account for variables of interest related to recidivism), ProSocial Status was negatively associated with recidivism, estimate = -0.02, z = -3.75, p = 0.0002. In contrast, the internal validity measure showed little associated with recidivism, estimate = 0.04, z = 0.48, p = 0.6284, as would be expected.

Even when all variables related to recidivism were entered into the model, ProSocial Status remained powerfully associated with recidivism, in the expected direction, that is, the greater the ProSocial score, the lower the recidivism, estimate = - 0.0195, z = -3.75, p = 0.0002.

Finally, we found that ProSocial Status was related (Pearson Correlation Coefficient) to elements of Readiness for Change as listed below:

Overall Readiness for Change Score: r = .368, p = .0092
PreContemplative Stage: r = .274, p = .056
Contemplative Stage: r = .311, p = .029
Action Stage: r = .375, p = .008
Maintenance Stage: r = .154, p = .310

Barriers to Obtaining Objectives:
None.

Corrective Action:
None indicated.

Project Objective 4: Relate probation officer/mentor factors to intervention success.

Target Goal 4A: Obtain data from probation officers and mentors assigned to the youth study participants.

Status: Completed ☐   Partially met ☒   Not met at all ☐

Indicate Number of Youth Served: N/A

Activity: Recruit and obtain data from probation officers, peer outreach workers and community mentors regarding their interactions with and attitude towards study participants.

Postmortem: As stated in previous progress reports, there was a much higher than expected turnover among ReVision mentors and JPOs involved in the ReVision program. This made it significantly more difficult to recruit and establish a consistent relationship with these individuals. Despite repeated attempts to recruit sufficient numbers of JPOs and mentors to participate in the study, concerns regarding the time necessary to complete study measures and frequent turnover of JPO staff involved in the ReVision program could not be overcome.
Officers: we had proposed to survey juvenile probation officers (JPOs) regarding their relationships with the youth and determine if this relationship influences outcomes. Despite repeated attempts to recruit JPOs and the support of Harris County and ReVision, we were largely unsuccessful in recruiting more than a handful of extremely motivated JPOs to participate in the current study. Further, regular and frequent turnover in JPOs staff made it difficult to build long-standing relationships with specific JPOs therefore limiting our ability to recruit over time. Nonetheless, in order to address this goal, with the support of the Harris County Juvenile Probation Department, we have obtained data regarding the types of JPO contact with ReVision youth (e.g., face-to-face contacts, officer home visits, quick curfew checks, etc.) and are in the process of preparing these data for analysis to determine if the type and frequency of contact influences outcomes among ReVision youth. Additionally, we are examining another variable thought to influence the JPO youth relationship that is the number of JPOs assigned to a youth during their time in the system. By analyzing both of these types of data (i.e., number and types of contacts and total number of JPOs assigned to a youth) we anticipate being able to sufficiently address this goal of the proposal.
Mentors: Partly as a consequence of the data we provided, ReVision has changed its process for recruiting and training mentors and we have received a much stronger response from new mentors entering the ReVision program as part of the follow-up study (2014-JU-FX-0001). In the original

proposal, we indicated we would develop a smart-phone based application in order to facilitate the tracking of mentor-mentee contact and the quality of the relationship. Although this application was subsequently developed, pilot testing indicated that it was not regularly accessed and used by mentors despite repeated requests both from ReVision and from research personnel. Thus, the data that was obtained through this approach was non-random and highly influenced by specific mentor characteristics. In order to address aspects of this aim, we have proposed to analyze qualitative data from interviews with mentors regarding their relationships with ReVision youth. Further, we are in the process of obtaining the records logging official contact between mentors and ReVision youth in order to determine if the number of contacts influences a youth's response to ReVision, changes in prosocial behavior, and rate of recidivism. Additionally, we are in the process of analyzing data from the Mentor Youth Alliance Scale to determine if the quality of the relationship from the youth's perspective influences the effectiveness of ReVision, changes in prosocial behavior, and decreases in recidivism.

Project Objective 5: Disseminate information regarding the study and its findings.

Target Goal 5A: Description of analyses and preliminary findings

Status: Completed ☒   Partially met ☐   Not met at all ☐

Indicate Number of Youth Served: N/A

Activity: Disseminate information about the study and its findings.

Barriers to Obtaining Objectives:
No significant barriers.

Target Goal 5B: Presentations and manuscripts (2 per year).

Status: Completed ☒   Partially met ☐   Not met at all ☐
Indicate Number of Youth Served: N/A

Postmortem: We have presented several conference presentations regarding our findings including presentations at the Annual Neurotrauma Conference in 2014 and two recent presentations at the American Criminology Society annual meeting in late 2015. We have also presented our findings on several occasions both to ReVision staff in order to facilitate improvements in the program as well as to staff including executive staff at Harris County Juvenile Probation. These presentations have contributed in a great deal of cross-talk between researchers, Harris county, and ReVision and have resulted in re-evaluation of policy / procedural changes at Harris County based upon our data. Further, we are in the preparation phase of several manuscripts based upon our baseline data. We anticipate these being submitted for publication in 2016 after which time we will begin work on papers relating to predictive models and longitudinal analyses. Finally, our initial paper relating to this population was positively reviewed and we are in the process of revising that paper based upon these initial comments and resubmitting it for publication.

Target Goal 5C: Collaborative Group Meetings (6 per year)

Status: Completed ☒   Partially met ☐   Not met at all ☐

Indicate Number of Youth Served: N/A

Postmortem: Throughout the project period, cooperation and collaboration between researchers, ReVision, and Harris County has remained strong, collegial, and beneficial. Following some initial difficulties in maintaining consistent communication between the parties leading to the dip in recruitment described elsewhere, communication and interactions have remained consistent and regular. Further, both ReVision and Harris County Juvenile Probation appear committed to and motivated to ensure the success of the research project. This level of enthusiasm and collaboration has carried through past the current project to include work on the follow-up study (2014-JU-FX-0001), and we anticipate the relationship between all three parties will continue and include other programmatic, research, and policy related endeavors.

4. MODIFICATION IN THE IMPLEMENTATION OF THE PROJECT STRATEGY:

As this project has progressed, it may have been necessary to request approval from your Program Manager to modify the plan presented in the approved proposal. Please describe any APPROVED changes that occurred during this reporting period and discuss the factors that precipitated the changes. Provide details on how changes will be monitored to ensure program goals are effectively met.

No significant modifications of the experimental design or research plan were requested.

5. CURRENT TIMELINE:

As this project has progressed, it may have been necessary to adjust the APPROVED timeline to more accurately reflect the program implementation schedule. Please indicate below if your timeline needs to reflect substantial alteration, and attach the revised timeline with the submission of this progress report.

As described in previous progress reports, initial delays in funding implementation from BCM and changes to the referral stream delayed recruitment and baseline testing. However, once these issues were resolved, recruitment returned to baseline levels although we were unable to recruit sufficient numbers to make up these delays. Nonetheless, we obtained a high-quality robust dataset on a relatively large number of youth. More importantly, our access to the Harris County Juvenile Probation database has enabled us to match these participants on a variety of demographic factors thereby making our analysis of the ReVision program and related to probation officer interactions persuasive. The use of a non-intervention control group in the current project is unique and makes this project stand out among other programmatic interventions.

6. PROBLEMS and requested TECHNICAL ASSISTANCE

No additional problems other than the issues discussed in the above sections have been encountered.

7. DISCUSSION OF ADDITIONAL PROGRAM MANAGEMENT ACCOMPLISHMENTS AND CONCERNS.

Overall, we have been very happy with the support and collaborations between ReVision, BCM research staff, the Harris County Juvenile Probation Department, and OJJDP. We are excited to continue analyzing data and preparing the process of submitting manuscripts on this unique project. Further, we look forward to the continuation of the follow-up study (2014-JU-FX-0001) and believe this extended follow-up and the information we have and will gain from mentors will prove invaluable for

understanding these initial results, improving the efficiency and effectiveness of ReVision and other mentor-based programs, and guiding policy and procedural changes at Harris county and potentially within other jurisdictions.