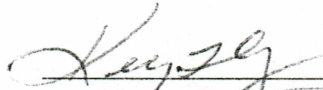# PREDICTORS OF SUCCESS AT A RURAL JUVENILE OFFENDER FACILITY

By

Gunnar Sven Ebbe Ebbesson

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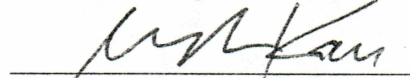
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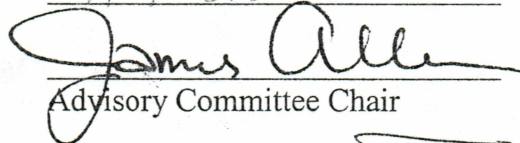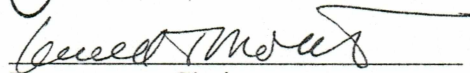Date

PREDICTORS OF SUCCESS AT A RURAL JUVENILE OFFENDER FACILITY

A

Thesis

Presented to the Faculty

of the University of Alaska Fairbanks

in Partial Fulfillment of the Requirements

for the Degree of

MASTER OF ARTS

in Community Psychology

by

Gunnar Sven Ebbe Ebbesson B.A.

Fairbanks Alaska

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Abstract

Although risk factors contributing to failure in treatment of young offenders have

been studied extensively, little is written about what effects success. This study on the

latter takes advantage of data obtained at a local treatment facility. This study uses

statistical strategies to compare 7 different variables from a set of archival data with the

outcome variable, which is "success in treatment". The seven independent variables are

ethnicity, age at entry to treatment, pre-release pass (PRP), days in treatment, FAS/FAE,

sexual offender, and psychiatric diagnosis. This data has been accumulated by a clinician

at the facility and offered to the investigator for the purpose of this project. The first stage

of the analysis was to correlate all of the 7 variables with the outcome variable

(success/no success). The variables with the strongest association were selected, and then

correlated with each other. Variables shown to be correlated with success were further

studied using a Logistic Regression analysis. The results of the statistical analysis showed

that non-minority status was the only variable to be clearly associated with success.

Acknowledgements

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Introduction

Contemporary research and treatment protocols invariably focus on what people are doing wrong in their lives and how we can fix these maladaptive behaviors. In my research, I explored treatment from a different perspective: from the perspective of success. The particular group of people I studied for the purpose of this project was juvenile delinquents in a rural youth facility. I proposed that there were certain factors that can predict success in treatment. To investigate these factors, this study used a database built over 8 years by an employee of the facility, along with publicly available information on the re-arrest of juveniles who appear in the database.

This proposal will include a review of the literature including the history of juvenile justice in the United States, the role of youth facilities in this juvenile justice system, and predictors of success among juvenile justice offenders. Next will be described a rationale for this study, along with accompanying hypotheses. A methods section, and then the results of the research follow. Finally, a discussion section describes the current findings in relation to other contemporary research findings, their limitations, and draws conclusions from the data.

History of Juvenile Justice

The turn of the century in the United States saw the establishment of the first juvenile court in Cook County, Illinois. In 1899, this court was created to allow the state to intervene in the lives of children in a different manner, under a different code than

adults (Bilchik, 1999). The focus of this new court was to allow the state to care for children when it was obvious that their parents could not, and to help the delinquent child to become a better citizen (Bilchik, 1999). By 1925, all but two states had established juvenile courts and children's probation services whose main function was to rehabilitate.

Procedures in juvenile courts were much less formal and allowed significant leeway in both prosecution and sentencing with treatment of the juveniles being the goal. Sentencing was often part of a treatment plan, which might involve training school, probation or just a warning. The Standard Juvenile Court Act of 1959 declared that "each child coming within the jurisdiction of the court shall receive… the care, guidance, and control that will conduce to his welfare and the best interest of the state, and that when he is removed from the control of his parents the court shall secure for him care as nearly as possible equivalent to that which they should have given him" (Bilchik, 1999). This ideal soon lost popularity as juvenile offenders often committed more crime after treatment (Bilchik, 1999).

The 1950's and 1960's saw a series of changes in the system which now allowed for formal hearings, protection from self incrimination, the juveniles' right to have their charges told to them, the right to an attorney, and to have proof beyond a "reasonable" doubt as the standard for adjudication. One change that did not happen was the requirement of a jury trial in juvenile proceedings. The Juvenile Delinquency Prevention and Control Act of 1968 recommended that those juveniles who committed status offenses (non-criminal) should remain outside the court system (Bilchik, 1999).

The Juvenile Justice Act of 1974 dramatically changed the way in which juvenile offenders are handled. It removed status and non-offenders from secure facilities and separated juvenile offenders from adults in institutional settings. The term "status offender" was developed after World War II and describes a juvenile who commits a crime that would not be punishable if he or she were an adult such as curfew violations or underage drinking. This became a major part of policy change in the 1970's with the de-institutionalization of status offenders. Other important features of the 1974 act are that it provides for a legislative commitment to these goals and policies and gives jurisdiction and responsibility to the states. It created the Office of Juvenile Justice and Delinquency Prevention (OJJDP) to conduct research, evaluation and statistical compilation activities and to offer training for professionals. The main goal and rationale behind this act was to create a national consensus and uniformity in juvenile justice policy (Shepherd, 1999). During the 1980's, the public perception of juvenile crime was that it was on the increase in both severity and amount (Bilchik, 1999). This perception gave rise to many new punitive laws. Certain jurisdictions now began to try some offenders as adults and also allowed mandatory minimum sentences to apply to juveniles. This trend continues to this day (Bilchik, 1999). There are 5 areas in which a more punitive stance was taken: (1) it became easier to transfer juveniles to the adult system, 2) sentencing became more severe, 3) confidentiality laws were slackened and, 4) victim rights entered the juvenile justice arena (Bilchik, 1999). Along with the new stiffer laws, the wording in the laws also included purpose clauses, which refer to "restorative justice," or holding juveniles accountable for criminal behavior and restoring what was taken from the victim. Other

purpose clauses talk about "victim recompensation" as well as "protection of the public" and "punishment consistent with the crime" all of which show a more severe, and punitive trend in policy (Bilchik, 1999).

Juvenile violent crime has been on the downswing since 1994 when it had reached its peak. Snyder (2000) produced an OJJDP report describing statistics of juvenile arrests of 1999 and comparing them to previous years. The following statistics come from this report. Between 1987 and 1993, juvenile murder arrests increased to about 3,800 arrests per year. The 1999 juvenile arrest report compiled by the OJJDP shows violent crimes have declined by 36% and the arrest rate for murder is down 68% from 1994. The total number of juvenile arrests has declined despite an 8% increase in the population of youth below the age of 21 from 1993-1999. Table 1 further describes juvenile arrests from 1999 and shows the relative decrease in violent crime since 1994 and 1995.

Table 1.

Juvenile Arrests for 1999

Type of Offense	Percent of Total Juvenile Arrests	Percent of Change
Murder	9%	68% Decrease since 1994
Aggravated Assault	14%	13% Decrease since 1995
Burglary	33%	23% Decrease since 1995
Robbery	25%	39% Decrease since 1995

Weapons arrests	24%	27% Decrease since 1995
All Drug violations	13%	132% Increase since 1990
All violent crime	12%	36% decrease since 1994

Ethnic minorities are at greater risk for juvenile arrest:

> The racial composition of the juvenile population in 1999 was 79% white,
>
> 15% black and 5% other races with most Hispanics classified as white. In
>
> contrast, 57% of juvenile arrests for violent crimes involved white youth
>
> and 41% involved black youth. To a lesser extent, black youths were also
>
> over represented in property crime arrests with 27% involving black
>
> youths and 69% involving white youths (Snyder, 2000, p. 4).

Table 2 outlines further statistics relating to the ethnic disparity among juvenile

arrests.

Table 2.

Proportion of Black Juvenile Arrests in 1999

Most Serious Offense	Black Proportion of Juvenile Arrests in 1999
Murder	49%
Forcible Rape	35
Robbery	54
Aggravated Assault	35
Burglary	24
Larceny-theft	26
Motor vehicle theft	39
Weapons	30
Drug abuse violations	29
Curfew and loitering	25
Runaways	18

The aim of future research in juvenile crime hopes to propagate more and better programs for youth. At present, juvenile crime appears on the decrease. Much of the reason for this decline is attributed to increased national awareness about the juvenile offender and the effect of juvenile crime on society, along with more money now put towards prosecution and treatment (Bilchik, 1999). Despite the facts that: (1) the juvenile

crime rate is declining, (2) adults commit seven out of eight violent crimes, and (3)

today's youth do not commit more acts of violence with greater regularity than their

predecessors, almost every state has legislated a view of a juvenile justice system that

mirrors the adult criminal justice system, where a much more punitive and less

therapeutic paradigm exists (Lederman, 1999). This trend is premised within popular

beliefs that the United States is in the throes of a juvenile crime epidemic, which is

counter to the research evidence presented above. Future legislation needs to move away

from this misinformed, punitive stance. These juveniles often come from situations where

they have little chance of succeeding, yet we blame them, and not their parents or society.

Treatment is effective but not available to much of this youth, and movement towards

treatment instead of incarceration would go a long way to improve the quality of life for

these children.

Youth Facilities

Youth facilities are the institutional branches of the juvenile justice programs

found throughout the country. Their primary purpose is to hold juveniles accountable for

their actions and provide an opportunity for rehabilitation. Eight main goals emerge as

themes through the mission statements of several youth facilities[1]: (1) hold youth

offenders accountable, (2) emphasize public safety, (3) provide certain, consistent

sanctions for youth offenders, (4) support the concerns of crime victims, (5) provide

comprehensive youth reformation programs, (6) promote and support juvenile crime

prevention activities, (7) encourage family involvement and responsibility, and (8) select,

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[1] Fairbanks Youth Facility, Oregon Youth Authority, The Maine Youth Center, Delaware State Corrections

train, support, and empower a competent and diverse work force. The overall goal of these facilities is the rehabilitation and reintroduction of healthy individuals into society.

Several studies show the existence of many problems within youth facilities nationwide; these problems are endemic to the entire correctional infrastructure and include an increase in violence, overcrowding, and poor standards of living. In one study of a youth facility during a one-month period in 1991, other inmates harmed more than 3% of all inmates, and more than 1.7% of staff were injured (Parent, 1994). A 1996 study using the Census of Juveniles in Residential Placement and Children in Custody of Juvenile Detention, Correctional, and Shelter Facilities showed that a substantial proportion (40%) of juveniles were in overcrowded facilities (OJJDP, 1996). This is an increase of 4% since 1991. This study also showed that facilities with less than 110 residents accounted for nearly three-quarters of over-capacity facilities. As of October 29, 1997, there were nearly 106,000 juvenile offenders in residential placement facilities in the United States (OJJDP, 1996).

The Relation of Risks and Assets to Recidivism

A review of the literature was made, focusing on the variables available in the current data set as predictors of success. A problem with the research done on youth in correctional facilities is that, in general, it focuses on risk factors that predict recidivism and ignores assets that can lead to success. One area of the research that does hold promise for the current study is the research on resilience. Masten (2001) describes risk and asset as being polar opposites of the same construct. For example, while low socio-economic status (SES) is a risk for delinquent behavior, high SES is an asset. She astutely

recognizes that there are few "pure" risks or assets, such as a car accident as a risk for injury, or talent as an asset for achievement in the arts (Masten, 2001). Therefore, this review of the literature will explore risk factors identified in the literature and their corresponding assets that are relevant to the variables available in the data set under study. These variables are: age at entry to treatment, length of treatment, sex offender status, psychiatric diagnosis status, FAS/FAE diagnosis status, minority status, and early release under heightened supervision (Prerelease Pass) status.

The most consistent predictor of recidivism found in the literature is age of first offense. Research indicates that age of first conviction and sentence length are predictive of re-incarceration, the younger the age the more likely they are to recidivate (Farrington, 1991; Bonta, 1995; Hawkins, 1992). Bonta found age at first adult conviction to be correlated to recidivism ($r = .34$, $p < .01$); he also found length of incarceration to be predictive ($r = .30$, $p < .01$). Howell (1995) reports on two longitudinal studies of children in Rochester, New York, where 39% of youthful offenders whose age at first offense was less than 9 years old became chronic re-offenders in adolescence. In the other study, which took place in Denver, 69% of the same age group became chronic recidivists (Huizinga, 1994; Huizinga, In press). Although there is some variance in the strength of these correlations, it is clear from these studies that age of initial offense has bearing on the success of these juvenile offenders; the older they are when they first get arrested, the better the outcome for them in the long run.

It is an assumption that is common among the general populace that sex offenders re-offend at a higher rate than do non-sex offenders. The current research disputes this.

Only 10% of sex offenders who complete treatment go on to become chronic re-offenders of sexual crimes (Kahn, 1991). This number may be low due to the under reporting of sex crimes by the victims, but is far beneath what is commonly believed. If we look at re-offending by these perpetrators in areas other than sexual crimes, the rate jumps up to approximately 50% one year after release from treatment (Shram, 1991). Another study done in Sweden found that the base rates for sexual and general recidivism were 20% and 65% respectively. It is therefore unlikely that there is a measurable difference in recidivism rates between juvenile sex offenders and offenders with other types of serious offenses.

A review of 34 studies on the prevalence of mental illness in youth within the juvenile justice system found a substantially higher rate of mental health disorders than in the general population(Otto, 1992). This finding does not however, necessarily translate to recidivism; some studies have shown mental health diagnosis to have no effect on recidivism. Anderson (1998), in a study of 121 juvenile offenders, found no measure of psychopathology predicted recidivism as an adult. However Quist (2000) found mental health functioned as a predictor of recidivism in a juvenile treatment sample, but the measure used did not identify specific psychiatric diagnoses and instead, described mental health in general. Research has linked specific clinical diagnoses with recidivism. Conduct disorder was found to correlate with recidivism (Ganzer, 1973; Kazdin, 1995). There is also evidence that incarcerated juvenile delinquents tend to have a higher rate of attention deficit hyperactivity disorder (ADHD) than their non-delinquent peers (Wierson, 1995). Additional clinical diagnoses related to re-offending include affective

disorders, especially depression (McManus, 1984). It is therefore likely that not having a psychiatric diagnosis is an asset.

The literature as it pertains to ethnicity and recidivism also varies in its views and findings. Several studies have shown ethnic minority status is associated with recidivism. Anderson(1998) showed that North American Native status was correlated with later adult criminal classification. The participants in this study were juvenile offenders at the time this study took place. Other studies show that minority status has no effect on recidivism. Bonta (1989), using the Manitoba's Risk-Needs scale, showed little difference between non-Native and Native offenders in scores on scale items demonstrated to predict chance of recidivism. Though some research points to there being little difference between success rates of minorities and non-minorities, I question whether rehabilitation for minorities is as successful as it could be using an exclusively western paradigm for healing. Because Fairbanks Youth Facility uses this western paradigm, it is likely that non-minority status is an asset for this population.

Length of sentence as a risk factor displays contradictory findings in the literature. One study of male offenders in a cognitive restructuring program within a jail, found that length of sentence was not correlated with recidivism (Malone, 2001). In contrast, Bonta (1992), in a study of 282 male offenders, found length of sentence had bearing on rates of recidivism. No research could be located in this review on the association of FAS/FAE with recidivism, and no studies could be identified on the relation of early release with heightened probation supervision to recidivism.

Several conclusions can be drawn from the existing risk factor research on the recidivism of juvenile offenders in treatment that have relevance to consideration of the variables in the current data set as assets. First, the older an offender at first arrest, the better the chances of not re-offending. High rates of mental health problems have been documented in jail populations; this suggests absence of psychiatric diagnosis may be an asset that predicts positive outcome, though at least one study found psychiatric diagnosis was not correlated with recidivism. Sexual offender status has not related with recidivism, despite public opinion to the contrary. Length of treatment, and ethnicity have been shown to be both risks and assets, but given the western paradigm of the treatment setting, non-minority status is likely to be an asset. The lack of research on FAS/FAE and its relation to recidivism is perhaps due to the under diagnosis of this problem and also the fact that this particular diagnosis is identified more frequently among the poor, who are more likely to be of ethnic minority status, and the poor come under the scrutiny of the public health system.

Rationale

While variables such as length of incarceration, type of offense, age at entry to treatment, ethnicity, sex offender status, and psychiatric diagnosis have been studied as risk factors associated with recidivism, this study will explore the relationship of these factors as assets to successful outcome. The study will use archival data from a four-year period to discover predictors of success in boys at a residential youth correctional facility. This project has the potential of serving two purposes: (1) to identify variables that might

have an influence on success, and (2) to make this information available to the facility for program planning.

Hypothesis

The study hypothesizes that a unique set of seven demographic and treatment variables will relate to outcome and will predict a substantial portion of the variance in juvenile outcome at a residential youth correctional facility. Furthermore this study hypothesizes the following:

1) Non-minority status is associated with success.

2) Higher age at treatment is associated with success.

3) Shorter length of sentence is associated with success

4) Receipt of PRP is associated with success

5) Absence of FAS/FAE is associated with success

6) Absence of psychiatric diagnosis is associated with success

7) Absence of sexual offense is associated with success

Methods

Participants

Participants include 87 male juvenile offenders who were placed in the Fairbanks Youth Facility (FYF) from 1995 through 1998. Ethnic composition of the sample includes six African American, forty-five White, twenty-two Alaska Native, eight Hispanic, five Asian American youth. Age in the sample ranges from 13-20 years old.

Setting

FYF is a treatment center for youth operated by the Division of Juvenile Justice for the State of Alaska Department of Health and Social Services. The mission of the facility is to "provide a secure and structured environment for institutionalized delinquent youth, which combined with an array of differential program components, will assist each juvenile in attaining rehabilitative objectives" (Fairbanks Youth Facility, 1995).

The residents of FYF are adjudicated delinquent youth who have been determined by the court to require secure institutional placement. Residents in the program are generally between the ages of thirteen and twenty. Committed offenses may include property crimes, sexual assaults, probation violations, arson, murder, robbery and physical assaults. A full range of mental health, organic, emotional and substance abuse issues that require specialized care and treatment often complicates delinquency issues. The facility strives to balance offender accountability, offender competency development, and community protection in keeping with the tenets of Restorative Justice.

The staff creates highly individualized treatment plans that embrace a developmental approach to risk/need assessment. Various and eclectic treatment approaches are used including behavior modification. New to the program is an attempt at incorporating community involvement as way to keep the youth in contact with their community while living within the walls of the institution. Table 3 outlines the basic stages, focus, tools and desired outcomes of the program.

Table 3.

Stages, Focus, Tools and Desired Outcomes of the Program

Stage	Primary Focus	Tools	Desired Outcome
Orientation	• Assessment • Case planning • Behavior modification	• Interviews • Testing • Staffing • Observation • Behavior contracting	Comprehensive treatment plan is developed that identifies specific benchmarks/goals the resident will accomplish to move through the program, ultimately earn release.
Rehabilitation	• Competency development	• School • Individual counseling • Group counseling • Psycho-educational	Resident begins completion of identified benchmarks and has demonstrated stable behavior/ reduced risk to the community.
Reintegration	• Competency development • Accountability	• School • Voc-tech/school to work • Victim/offender dialogue • Community service • Passes	Resident continues to develop skills, make amends for damage, and demonstrate change/mitigated level of risk conducive to reintegration and release.
Aftercare	• Re-admission to the community	• School and/or work • Graduated FYF withdrawal • Probation supervision	Resident is successfully released and supported in the community through an appropriately individualized aftercare network.

Procedures

Shawn Marsh M.A., a clinician on staff at Fairbanks Youth Facility (FYF) collected the data set I used in this research. Mr. Marsh developed this database beginning in 1994 to track outcomes of clients who came through the FYF program. He collected the data from the client files at the facility and inputted them onto his computer as the information became available. For the purpose of this study, Mr. Marsh gave this investigator a spreadsheet that included data for the following seven variables: ethnicity, age at entry to treatment, pre-release pass (PRP)[2], days in treatment, FAS/FAE, sexual offender, and psychiatric diagnosis. The data included no names, or any other identifying information. The database Mr. Marsh possesses is set up with the name and case number of each individual followed by columns of demographic and treatment data. This data will allowed Mr. Marsh to research the statewide offender database and determine if any individuals in the FYF database appear again on the statewide offender database. The statewide offender database was used as indicator that an FYF client has re-offended within two years of release. Mr. Marsh assigned an ordinal number "1" for "re-offender' or "0" for "no re-offense." Mr. Marsh then printed out the resulting abridged database without identifying information for the research project. At no time did the investigator have access to any of the identifying information from this database. Given the nature of this research as archival research, and the protection of confidentiality procedures

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[2]PRP is an early release under heightened supervision

instituted by this project, the project was approved through exempted review by the UAF

IRB.

Variables

The dependent variable for this study is treatment success. The criteria for

treatment success are as follows: Youth are considered successful if they do not obtain a

juvenile adjudication, criminal conviction or institutional order within two years of their

release for institutional treatment. Therefore, youth are considered recidivists if they do

obtain a new juvenile adjudication, criminal conviction or institutional order within two

years of their release from institutional treatment. Based on the original baseline criteria

established for this measure, traffic offenses are included in recidivism calculations for

FYF. Also, institutionalized youth that were reclassified to other institutions were

considered released. Two years as a time frame is used by FYF in its definition of

success. Success was established through review of publicly available state databases

searching for any offenses committed by program graduates during the two-year period

following release.

The seven independent variables are ethnicity, age at entry to treatment, pre-

release pass (PRP), days in treatment, FAS/FAE, sexual offender, and psychiatric

diagnosis. In order to perform the most appropriate statistical analysis with this data, I

coded the categorical variables numerically, replacing categories with numbers as

follows:

Table 4.

Coding of Variables

Variable Name	Type	SPSS Variable	Coding	
			1	0
Treatment				
Success	Categorical	Success	Success	Failure
Ethnicity	Categorical	Ethnicity	Minority	Non-Minority
FAS/FAE	Categorical	FASFAE	Present	Not Present
Psychiatric				
Diagnosis	Categorical	MH	Diagnosis	No Diagnosis
Sexual				
Offender	Categorical	SO	Offender	Non-Offender
Age at			n/a (age in	
Treatment	Continuous	Age at Tx	years)	
Pre-Release				
Pass	Continuous	PRP	n/a (days)	
Days in				
Treatment	Continuous	Sentence	n/a (days)	

Note: FAS/FAE = Fetal Alcohol Syndrome/ Fetal Alcohol Effects

Results

Thirty-seven per cent of the sample attained success at outcome. Means and standard deviations for the successful outcome and no success group are reported in Table 5 for the continuous variables of age at treatment, length of pre-release pass, and length of sentence.

Table 5.

Means and Standard Deviations for Age at Treatment, Length of Pre-Release Pass, and Days in Treatment

Variable	N	Mean	Std. Dev.	Mean Success
Age at TX	87	16.84	1.01	17.36
PRP	87	11.84	24.37	13.58
Days in TX	87	354.50	136.93	378.55

Note: Age at TX *= Age at Treatment:* PRP *= Length of Pre-Release Pass:* Days in TX *= Days in Treatment*

Percentages of youth displaying presence of each dichotomous variable (minority status, sexual offender status, mental health diagnosis, and FAS/FAE diagnosis) are presented in Table 6. Absence of these variables is predicted associated with success. Also presented in Table 6 is percentage of youth with successful outcome who displayed each variable.

Table 6

Percentage of Sample and Successful Outcome Group with each Categorical Independent

Variable

Variable	% Of Sample	% Successful
Minority	47	22
FAS/FAE	18	13
Sex Offender	7	33
Psychiatric Diagnosis	33	26

Note: Minority = *Ethnic Minority Status:* FAS/FAE = *Fetal Alcohol Syndrome/Fetal Alcohol Effects:*

Correlations were calculated among the independent variables themselves to examine

whether any underlying confounding relationships existed. The only significant

relationship between any of the independent variables was a negative correlation ($r = -.31, p < .01, p_i < .01$) between age at treatment and length of sentence. However, as

described below, neither age at treatment nor length of sentence was associated with

success.

Correlations were calculated for all independent variables with the dependent variable

as tests of individual hypotheses. These correlations are presented in Table 7. Bonferroni

corrections ($p_i = p/i$ where i is the number of tests used, to compute a corrected

significance level for p adjusted for the family-wise error rate associated with i tests)

were used for all tests of significance.

Table 7

Correlations of Independent Variables with Success at Outcome

Variable	r
Age at Treatment	-.02
PRP	.04
Minority Status	-.29**
Length of Treatment	.07
FAS/FAE	-.24*
Sex Offender	-.02
Psychiatric Diagnosis	-.14

$p < .05$; **$p < .01$
Note: PRP = *Pre-release Pass*: FAS/FAE = *Fetal Alcohol Syndrome / Fetal Alcohol Effects*

To test the first hypothesis, that non-minority status is associated with success, the

correlation of minority status to treatment success was computed. This correlation was

significant following Bonferroni adjustment (r = -. 29, p = .01), therefore, the hypothesis

that non-minority status increases the likelihood of success in treatment was not rejected.

To test the second hypothesis, that higher age at treatment is associated with

success, the correlation of age at entry to treatment to success in treatment was computed.

This correlation was not significant following Bonferroni adjustment (r = -.02, p = .88

ns), therefore the hypothesis that the older the age at entry to treatment increases the likelihood of success is rejected.

To test the third hypothesis, that shorter sentence length is associated with success, the correlation of sentence length to treatment success was computed. This correlation was not significant following Bonferroni adjustment ($r = .07, p = .53$ *ns*), therefore the hypothesis that a longer sentence increases the likelihood of success in treatment, is rejected.

To test the fourth hypothesis, that pre-release pass is associated with success, the correlation of pre-release pass to success in treatment was computed. This correlation was not significant following Bonferroni adjustment ($r = .04, p = .70$ *ns*), therefore the hypothesis that the length of a pre-release pass increases the likelihood of success in treatment, is rejected.

To test the fifth hypothesis, that absence of FAS/FAE is associated with success, the correlation of FAS/FAE diagnosis to success in treatment was computed. This correlation was found to be significant following Bonferroni adjustment($r = -.24, p = .03$), However, a cross tabs of ethnicity and FAS/FAE diagnosis revealed a direct association of the two explanatory variables since there were no non-minority clients with a FAS/FAE diagnosis admitted to the treatment program. Because of this, it is not possible to discern the nature of the relationship of successful treatment outcome to FAS/FAE diagnosis, and the hypothesis that not having an FAS/FAE diagnosis increases the likelihood of success, is rejected.

To test the sixth hypothesis, that absence of psychiatric diagnosis is associated with success, the correlation of psychiatric diagnosis to success in treatment was computed. This correlation was found to not be significant following Bonferroni adjustment ($r = -.14$, $p = .21$ ns), therefore the hypothesis that not having a psychiatric diagnosis increases the likelihood of success, is rejected.

To test the seventh hypothesis, that sex offender status is associated with treatment success, the correlation of sex offender status to success in treatment was computed. This correlation was found to not be significant ($r = -.02$, $p = .86$ ns) therefore the hypothesis that not having sex offender status increases the likelihood of success, is rejected

The most appropriate statistical test for understanding the relations of the independent variables to the dependent variables in the current data set is logistic regression analysis. The rationale for this choice is as follows:

1) The dependent variable is a dichotomous variable (e.g., success, failure)

2) The independent variables are composed of both continuous and categorical variables

Logistic regression is an appropriate statistical test when a dichotomous outcome variable and both continuous and categorical independent variables are present (Cizek, 1999). Performing a logistic regression will achieved the following outcomes:

1) It indicates whether or not a variable has an impact on the outcome (dependent) variable.

2) It indicates the probability of success associated with each independent variable.

In addition, logistic regression uses more information through simultaneous consideration of all the variables under consideration in a multivariate analysis, while partialling and controlling for any shared variance among the independent variables.

Risk ratios and odds ratios were also calculated for each of the dichotomous categorical explanatory variables and the response variable of success. Next, a direct logistic regression analysis was performed on success in treatment as outcome and seven demographic and treatment predictors: mental health diagnosis, FAS/FAE, sexual offender status, length of treatment, age at entry to treatment, minority status, pre-release pass. Analysis was performed using SPSS. An individual main effects logistic regression models were calculated for each of the explanatory variables. Then a main effects model including all of the independent and dependent variables available was calculated. The results of the correlation, odds ratios, risk ratios and main effects logistic regression models were compared to identify variables that should be included in the final predictive model. Lastly, the final main effects model was fit, including any explanatory variables that were indicated to be significant in all prior steps of the analysis. The test statistic used to assess the adequacy of model fit in all logistic regressions is Pearson's Chi-Square statistic, χ^2. The likelihood ratio Ch-Square statistic, G^2, is also a recognized measure of goodness of fit, but Pearson's Chi-Square statistic is valid with smaller samples sizes and more sparse tables than the likelihood chi-square statistic (Agresti, 1990), and so was most appropriate for the current research. To verify that the logistic

regression model assumptions were met, the standardized residuals were used to identify any outliers and examine any trends in lack of fit, using the criteria that a residual with absolute value greater than two indicates lack of fit (Stokes, Davis, & Koch, 1995).

The results of the direct logistic regression are congruent with the results of the relative risk, odds ratios and correlations calculated previously. Only the logistic regression model for the single main effect of ethnicity fit the data relatively well ($p <$ .01) and also was shown to be a valid model.

Associations between each of the explanatory variables and the dependent variable of success are shown in the following tables. The relative risks, odds ratios and correlations between the dependent variable of success and each of the explanatory variables is found in the Table 7.

Table 8.

Risks and Odds Ratios for Categorical Independent Variables

Variable	Value	95% Confidence Interval	
		Lower	Upper
Ethnicity	.28	.11	.72
FAS/FAE	.20	.04	.92
Sex Offender	.85	.15	4.92
Psychiatric Diagnosis	.54	.20	1.42

Note: FAS/FAE =*Fetal Alcohol Syndrome/ Fetal Alcohol Effects*

Table 9 shows the direct logistic regression fit for all of the independent variables simultaneously which was not significant χ2 (11, $N = 87$) = 14.54, $p = .21$. Even though the direct logistic regression model is not significant at the $p = .05$ significance level, there is still some support for the effect of ethnicity since this was the only parameter in the model that came close to being significant, with Wald criterion $z = 3.54$, $p = .06$.

Table 9.

Logistic Regression of Success as a Function of Treatment and Demographic Variables

Variable	B	S.E.	Wald	df	Sig	r	Exp (B)
Psychiatric Diagnosis	.82	.62	1.72	1	.19	.00	2.26
Ethnicity	1.11	.59	3.54	1	.06	.12	3.03
Age at Treatment	-.04	.29	.02	1	.89	.00	.96
PRP	.01	.01	.27	1	.61	.00	1.01
Sentence	.00	.00	1.39	1	.24	.00	1.00
FAS/FAE	.79	.99	.65	1	.42	.00	2.21
Sex Offender	.61	1.13	.29	1	.59	.00	1.84

Note: PRP= Pre-release Pass, FAS/FAE = Fetal Alcohol Syndrome / Fetal Alcohol Effects

Parameter Estimates Direct Logistic Regression with an overall significance of $p = .21$

Several independent variables in the previous analysis were unrelated to the dependent variable and introduced additional measurement error in the model, potentially

obscuring the significant relationship suggested by the correlation and odds ratio calculations performed earlier between success and ethnicity. This can be explored through stepwise logistic regression or logistic regression with a single variable. To explore the possible association of success and ethnicity in this study, a direct logistic regression with the single independent variable of ethnicity was performed and is shown in Table 10.

Table 10.

Logistic Regression with Single Main Effect of Ethnicity

Variable	B	Std. Error	Wald	Df	Sig.	Exp. (B)	95% Confidence Interval for Exp (B)	
							Lower Bounds	Higher Bounds
Ethnicity	1.27	.48	7.02	1	.01	3.56	1.39	9.09

The correlations and odds rations also showed support for other associations, such as FAS/FAE and mental health diagnosis, however these were not significant at a $p < .05$ significance level. However, in future research, larger sample sizes may allow for the detection of a significant difference, if any.

A subset of one unique variable from the treatment and demographic variables predicted a substantial portion of the variance in juvenile outcome at Fairbanks Youth Facility. Of all the explanatory variables, the only one that was consistently found to be associated with success was ethnicity. However, this finding must be qualified, as it did not maintain stability in the case of analysis with the other independent variables. In the

later case, the unique and non-overlaping variance associated with the variable of minority status was non-significant as a predictor of success. In other words, the finding did not hold for the case when analyzed with other variables that shared a component of the variance associated with ethnicity. This suggests that the relationship between minority status and outcome is a complex one, and that minority status overlaps systematically with one or more of the other variables that were hypothesized to influence outcome. The results suggest that if the direct logistic regression was redone, as a stepwise logistic regression significance would be obtained for minority status with the other variables. However, if this was found, replication of the results would be necessary, as is the case in the use of stepwise procedures.

Treatment success was not found to be associated with age at treatment, length of sentence, length of pre-release pass, sexual offense conviction or mental heath diagnosis. There was some weak evidence to suggest a relationship between FAS/FAE diagnosis and success. The only clear result of the statistical analysis is that non-minority status is associated with a successful treatment outcome.

Discussion

The main finding in this study was that non-minority status is a predictor of success with this sample. The potential reasons for this finding could be linked with any number of treatment variables, which might range from cultural appropriateness of treatment to client-counselor matching and any number of other factors which are found with in the program. Other considerations might be more universal in nature. A

disproportionate number of ethnic minorities are arrested nationwide, which could have bearing on re-arrest as well. Other issues such as poverty and racism could also have an impact on recidivism, as more risk factors may be present in the environments where these children live. This finding is supported by the research Anderson (1998) that showed that ethnic minorities recidivate more than non-minorities.

That non-minority status is an advantage in treatment outcome was overtly identified in this study. What is not overtly identified are the reasons for this general advantage many people of non-minority background enjoy in contrast to people of color. People of light skin hue can count on seeing other people of their ethnicity in positions of power where ever they go, can see them also as role models in the media and elsewhere, and can count on being taught by them in school. McIntosh (1998) enumerates a total of 26 examples of these advantages in her article on white privilege. These advantages are shared by most of the majority culture, typically without their awareness. It seems reasonable to conjecture that a number of these societal-wide advantages of being white also translate into advantages in navigating the juvenile justice system as well. McIntosh argues that key to changing this paradigm of oppression is that people in the ethnic majority work on their awareness of these disadvantages that people of color face and help to equalize the disparity, first with self-awareness and then with overt action. Similar self-examination prove helpful within the entire juvenile justice system as well.

The largest single minority group in the sample was Alaska Native, it is important to address the issues surrounding Native Americans in treatment. Based on research by Duran (1995), treatment of Alaska Natives in a non-traditional setting may not be

beneficial, especially when they are far from their families as in the case of many children who are arrested in their villages and sent to treatment in Fairbanks and other places. This may need to be a consideration when mandating Alaska Natives to the youth facility. There are several youth programs for Native youth such as Raven's Way in Sitka and Old Minto Recovery Camp in Old Minto on the Tanana. FYF refers some of their Alaska Native youth to these settings at the current time; evaluation of the outcome of these juveniles in these alternative settings would be beneficial. Similar issues related to the cultural appropriateness of services to juveniles of other non-Native ethnic backgrounds are likely relevant.

The results of the statistical analysis showed some weak evidence that FAS/FAE could be associated with success in treatment. However, there were no cases of juveniles of non-minority status who had a FAS/FAE diagnosis, making analysis of the existing data with empty cells problematic. This absence of FAS/FAE diagnoses among non-minorities may testify to the lack of consistency in diagnosing across ethnicity and socio-economic status. One other potential confounding factor in all this data is the training level, in current diagnostic methods and criteria, of the clinician making the diagnoses. Diagnosis of this complex set of features associated with the teratogen alcohol is an ever-changing specialty. For example, until recently, one of the necessary components of the diagnosis was documented history of alcohol exposure to the fetus. This alone has vast implications in the under diagnosis of some segments of the community. Interdisciplinary team approach to FAS diagnosis was not in use when this sample was in treatment. The role of FAS in outcome deserves further study as many of the characteristics of this

syndrome such as low impulse control and reduced ability to focus thought, might increase the likelihood of delinquency.

The prediction that psychiatric diagnosis is associated with success in treatment, was not supported by this study. This is supported by research by Anderson (1998), who found that there was no evidence that psychopathology was related to recidivism, but contradictory to research by others (Otto, 1992; Ganzer, 1973; Kazdin, 1995; Wierson, 1995; McManus, 1984), who showed that psychopathology, especially conduct disorder, attention deficit hyper activity disorder, and depression are linked to recidivism. The lack of information as to actual diagnoses for these juveniles may contribute to this finding. For example, externalizing disorders, such as conduct disorder and attention deficit disorder with hyperactivity, may be associated with greater recidivism, as compared with internalizing disorders such as depression or anxiety disorders.

Sex offender status was not associated with outcome. When recidivism for all types of offenses are taken into account, no association between sexual offense and re-offending has been demonstrated in the literature (Shram, 1991; Kahn, 1991).

Age at entry to treatment was found to not be associated with success in the sample. This is contrary to the findings much research (Farrington, 1991; Bonta, 1995; Hawkins, 1992 Howell, 1995). This finding may very well have to do with the fact the data does not include prior convictions and therefore these may not be the actual age of first offence which is what the literature refers to as being the most consistent predictor of recidivism.

Length of treatment was shown to not be associated with success in treatment. This is supported by the findings of Malone (2001) and counter to the findings by Bonta (1992), which showed a relationship between length of treatment and recidivism. The data for this study may be limited by the fact that actual sentence length is not reported in the data, instead, length of stay at the facility is reported and if a juvenile transitions out of the program, either to a different facility or to adult incarceration, it is not known how much longer they remain in treatment.

The reason for the contradicting findings is not clear, as the analysis was done from archival data and very little other information about treatment can be gleaned from the research. What this information does provide is the knowledge that the ethnic minority juveniles in this particular setting recidivate more, and treatment may need to change for this population either in quantity or quality or both. Further investigation is needed to ascertain exactly what is needed to achieve the highest possible quality of treatment for this population.

Limitations

The limitations of this study include, sampling and generalizability and stem from the use of archival data, which further limits the types of questions I could ask in this study. The nature of the data is that there was little choice about what variables were included in the study. If this study had been designed to ascertain variables that have a positive effect of treatment success, the variables might have been different. Archival data might not be the best way of gaining an understanding of the inner workings of a treatment facility; they lack context. Using qualitative methodology, or other types of

quantitative methodology such as survey and or interviews can make up for lack of context. This research was limited by the fact that it was designed after the data was collected, there is little depth to many of the variables in terms of describing the population, and has a relatively small number of cases, therefore the findings should not be assumed to be valid for other populations.

The archival data set was limiting in the scope of procedures that could be done. The small sample size may have been a factor in not having any examples of non-minority juveniles with an FAS/FAE diagnosis. It would have been valuable to have a picture of the relationship between FAS/FAE and success. Sample size also affected the ability to further break down the sample into ethnic groups. There were forty-five white and twenty-two Alaska Native youth, and only six African American, eight Hispanic, and five Asian American youth therefore, I had to collapse the sample into only two categories, ethnic minority status or non-minority status. This limited the findings.

Another limit to the methodology is that many of the factors under study, such as ethnicity or age of first offense are factors cannot be changed easily through treatment interventions. Knowledge about variables that are effected by treatment (dynamic), such as self-knowledge, cultural knowledge, coping skills, would have more impact on the treatment facility's ability to change their program and better help people.

Recommendations for Future Research

There is much that could be learned about the relationship between success in treatment and factors that are a part of treatment. The current research focuses heavily on recidivism and risk as way to prevent re-offending. It is easy to fall into this pattern, as

deficit based research is the norm, and the field of psychology and psychiatry are driven by a diagnosis based system. It is this investigator's opinion that a paradigm shift from the understanding of deficit to an understanding of strength is necessary. In my opinion, if we can focus on what works in people's lives, we can achieve much more than we currently do. Many countries such as Sweden, Denmark and Canada, use this system of research and treatment with much success. Their medical delivery systems are not insurance company driven however, which allows for working on strengths instead of problems.

In terms of this project, it would be very interesting to further investigate the role of FAS/FAE as it relates to treatment outcome. The presentation of this disorder brings with it characteristics such as low impulse control, which might be a risk factor for getting into trouble with the law. I would be interested in developing a controlled study where a team approach to diagnosis of FAS/FAE is used to ensure accurate assessment across ethnicity. A larger sample size would also be beneficial to better establish the validity and reliability and increase the likelihood of examples of juveniles of all races of having this diagnosis.

Another avenue of investigation that could prove interesting understands more about the role of psychiatric diagnosis as it relates to success. Due to the paucity of details surrounding the diagnoses in this study, not much could be gleaned. Having specific diagnoses would have been beneficial. Further research with this data set, and perhaps in conjunction with other types of methodologies might help this treatment center to better serve their clients.

Creating research which focuses on positive outcome would best be served by studying factors that are strengths. Resilience factors, such as self-awareness, family involvement, cultural awareness, and any number of other strengths, which could be augmented in treatment, would be appropriate for further research. This type of research could increase the efficacy of treatment and improve the lives of these children.

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