



All Theses and Dissertations

2014-06-25

RealVictory and Recidivism: An Examination of the RealVictory Program

Ronald L. Hubbard Jr.

Brigham Young University - Provo

Follow this and additional works at: <https://scholarsarchive.byu.edu/etd>



Part of the [Sociology Commons](#)

BYU ScholarsArchive Citation

Hubbard, Ronald L. Jr., "RealVictory and Recidivism: An Examination of the RealVictory Program" (2014). *All Theses and Dissertations*. 4139.

<https://scholarsarchive.byu.edu/etd/4139>

This Thesis is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in All Theses and Dissertations by an authorized administrator of BYU ScholarsArchive. For more information, please contact scholarsarchive@byu.edu, ellen_amatangelo@byu.edu.

RealVictory and Recidivism: An Examination of the RealVictory Program

Ronald L. Hubbard Jr.

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Science

Stephen J. Bahr, Chair
Tim B. Heaton
Mikaela J. Dufur

Department of Sociology
Brigham Young University

June 2014

Copyright © 2014 Ronald L. Hubbard Jr.
All Rights Reserved

ABSTRACT

RealVictory and Recidivism: An Examination of the RealVictory Program

Ronald L. Hubbard Jr.
Department of Sociology, BYU
Master of Science

In this thesis I investigate the effectiveness of the RealVictory Program, a juvenile aftercare program combined with a phone coach system, in the state of Utah. Using treatment and control groups, I examine both time to re-arrest as well as number of post-participation arrests to determine how effectively RealVictory reduces recidivism among juvenile participants released from secure care, in foster homes, or while on probation. I found the treatment group was at a 21.7 percent higher risk of being rearrested, but this result was not statistically significant. These results suggest that the program as a whole is not effective at reducing recidivism.

Keywords: recidivism, juveniles, crime, RealVictory

ACKNOWLEDGMENTS

I wish to thank my wife, VaLynn, and our children for their continued support throughout my education. I also thank Steve Bahr for his assistance and guidance throughout my studies at BYU. In addition I wish to thank Tim Heaton and Mikaela Dufur for their much needed assistance and guidance through my research process.

TABLE OF CONTENTS

| | |
|------------------------------------|-----|
| Abstract..... | ii |
| Acknowledgements | iii |
| Table of Contents | iv |
| Table of Figures | vi |
| Table of Tables..... | vii |
| Introduction | 1 |
| Literature Review..... | 2 |
| Desistance from Crime | 2 |
| Evaluating Treatment Programs..... | 13 |
| The RealVictory Program | 14 |
| Research Questions..... | 17 |
| Method..... | 18 |
| Participants | 18 |
| Variables..... | 19 |
| Analysis | 21 |
| Missing Data | 22 |
| Results..... | 23 |
| Discussion | 25 |
| What Can Be Done..... | 25 |

| | |
|-------------------|----|
| Limitations | 30 |
| Conclusion | 31 |
| References | 32 |

LIST OF FIGURES

| | |
|---|----|
| 1. The Reality Model..... | 40 |
| 2. Hazard Estimates by Treatment | 41 |
| 3. Survival Estimates by Treatment..... | 42 |

LIST OF TABLES

1. Variables to Study 43

2. Cox Regressions - Likelihood of Re-arrest Treatment/Control Groups..... 44

3. Cox Regressions - Likelihood of Re-arrest Number of Calls Answered..... 45

4. Cox Regressions - Likelihood of Re-arrest Treatment/Control Groups with
Interactions..... 46

5. Negative Binomial Regression - Number of Re-arrests by Treatment/Control Groups
..... 47

6. Negative Binomial Regression - Number of Re-arrests by Number of Calls..... 48

7. Negative Binomial Regression - Interactions Number of Re-arrests by
Treatment/Control Groups..... 49

INTRODUCTION

Recidivism, or the return to criminal behavior, is a serious problem in the United States. Ninety-three percent of the people who are incarcerated are eventually released and should return to society. Of these, about two thirds will be rearrested during the next three years (Petersilia 2009). This is especially important when considering the United States of America has the highest incarceration rate among the major countries of the world (ICPS 2013). As of 2010, 748 people out of 100,000 were incarcerated in the United States. This is about five times higher than most of Europe and 27 percent higher than Russia.

The statistics for juveniles are striking as well. In 2009, while youth between the ages of 10 and 17 made up about 11 percent of the population, they made up 14 percent of all arrests, and most striking about 25 percent of all property crime arrests (Puzzanchera, Adams, and Hockenberry 2012). In addition, in the 24 years following 1985, juvenile court cases in the United States increased by 30 percent and more than 31 million juveniles were under court supervision (Puzzanchera et al. 2012).

While there are many programs to help people stop committing crimes, there is a great need to evaluate these programs to determine the most effective way to help reduce recidivism. While we know some things that make up effective programs, there is still a great need for additional research on why programs are effective and what

makes them most efficient (Greenwood and Welsh 2012; Bushway, Piquero, Brody, Cauffman, and Mazerole 2001; Lynch 2006).

This research evaluates RealVictory, a program whose mission is to “identify, develop, and research methodologies that reduce criminal behavior and increase pro-social behavior among repeat offenders (RealVictory 2013).” The program consists of a series of cognitive training classes and daily follow-up cell phone calls over the course of a year for encouragement and reinforcement of the ideas taught in the class. This research is to determine the usefulness of this type of program in reducing recidivism in juvenile offenders. While preliminary evaluations have been conducted on RealVictory, this research is larger in size and duration. The initial evaluation consisted of 70 participants and included one year of data. This research on the other hand includes 250 individual cases that include participants selected from secure care facilities, foster homes, and probationers. The data also includes up to five years of recidivism data, enabling us to better evaluate the effectiveness of the RealVictory program (Burraston, Bahr, and Cherrington 2013; Burraston, Cherrington, and Bahr 2012).

LITERATURE REVIEW

Desistance from Crime

In the study of crime, desistance has been generally defined as the termination of criminal or deviant behavior. Helping people stop committing crimes is one of the major goals of the criminal justice system. As with the RealVictory program, many

programs have been implemented to help offenders leave the criminal lifestyle and rejoin the law-abiding society. And while it is an important goal of criminal justice policies and practices, there is not a widely accepted definition of desistance, whether it is a complete cessation of criminal activity or if the cessation may be more episodic, with incidents separated by years (Laub and Sampson 2003; Maruna 2001). In an attempt to understand why people stop committing crimes there have been several attempts to recognize why some people stop and others don't. In order to understand desistance, we must also discuss recidivism, or the return to criminal behavior.

Recidivism has been operationalized and measured in many ways, making it more difficult to compare statistics across different jurisdictions (Harris, Lockwood, and Mengers 2009). For example, recidivism has been measured by determining whether people were rearrested within the following one to three years following the initial arrest or release from confinement. For this project we will measure recidivism by the amount of time between starting the phone coach and first felony re-arrest. There are many factors, including parental neglect, abuse, type of crime, psychological disorders, and relationships with peers and adults that affect the likelihood of juveniles reoffending and being arrested again (Mulder et al. 2010; van der Put et al. 2012; Ryan, Williams, and Courtney 2013).

Many theories discuss why some people repeatedly commit crime while others don't. These theories of how people change can help us understand the many facets to

criminal behavior. In the next pages, we discuss several theories and how they are used to explain desistance or reduced recidivism in criminal offenders. These theories include more criminological theories like social learning, social control, strain theory, and integrated theories like life course theory. Then we will discuss more social-psychological theories like cognitive transformation, cognitive behavioral training, and Cherrington's Moral Development Model.

Social learning theory. Social learning theory explains that the people an individual is associated with, as well as how strong that association is, can influence that individual's actions either lawfully or criminally. These associations can be friends, family members, neighbors, teachers, clergy, or any people an individual associates with. They not only give models of behavior to imitate, but also provide what Akers (1979, 1985, 1998) refers to as definitions, or the meanings the individual ascribes to various situations, whether acts are considered right or not, desirable or not, or ethical or not. People can hold definitions that seem incongruous, like if they feel hurting someone is wrong, but stealing something from the same person is perfectly fine. If a person already accepts a set of definitions that oppose criminal behavior, they will be less likely to commit criminal acts. In addition to associations and these definitions, the reinforcement, or rewards and punishments that ensue affect the likelihood of continuing criminal activities. If a person avoids punishment after criminal behavior, they will be more likely to commit more crimes, whereas people who receive some

punishment for their criminal behavior may be less likely to commit more crimes in the future. Lastly, if the behavior of associates is perceived as acceptable both in the group and in the media, it is more likely to be imitated (Donnerstein and Linz 1995).

When examining social learning theory in treatment and desistance, it is important to remember that the associates an individual has, greatly impacts the behavior models they are influenced by. Treatment programs that focus on learning should help participants understand the friends they keep will almost certainly affect their behavior. This is why many programs aiming to stop addictive behavior set up sponsor relationships with more experienced associates. These relationships enable the less experienced offender to rely on the assistance of the experienced person in times of weakness.

Social control theory. Like social learning theory, social control theory emphasizes the importance of the strength of the bonds people have with others. There are four main elements to Hirschi's (1969) social control theory, attachment to others, commitment to conventional behavior, involvement in conventional activities, and the belief in the norms of society.

The stronger the bonds we have with others, the more sensitive we are to their opinions of us, the less likely we are to act in ways they disapprove of. Hirschi (1969) also noted that it didn't necessarily mean if a person had stronger ties to criminal others, they would be criminal. He stated that strong ties with most people would result

in more law-abiding behavior, but if a person had no strong ties, they would be more likely to act criminally. When examining the level of commitment people feel to conventional behavior, as people increase their “stake in conformity” by going to school, getting better jobs, and having a family, their likelihood to act illegally decreases because they see what they would lose if they acted criminally (Toby 1957).

Involvement, or the level of immersion in conventional activities like studying, working, playing with family, can limit criminal activity. The more time is spent on lawful activities, limits the time that can be spent on illegal acts. Lastly, when people accept the norms and values of society that include avoiding illegal activities, they are less likely to act criminally because they feel the societal norms are important.

The social bonds people have, like in social learning theory, are very important when looking at ways to reduce recidivism. If people have strong friendships with people who feel that illegal activity is wrong, they are more likely to adopt their friends’ view and act lawfully. Also as people increase their stake in conformity, they are less willing to lose the positive benefits they have from positive behavior. Treatment programs focusing on social control should attempt to include close friends or family members of the participant who believe lawful activities are important and are willing to help increase the participants’ stake in conformity. It is through their ties, commitment, involvement and belief that participants would show the most promise when using this theory.

While social learning theory and social control theory are closely related there is one major difference. Hirschi (1969) explained that if a person has strong bonds with others, even if the others act criminally, they will be less likely to act criminally. Learning theory on the other hand argues that peoples' associates influence their behavior. The connections people have with others can be useful in reducing criminal behavior. According to both learning and control theories, regular meaningful contact with others who act lawfully can reduce the likelihood of criminal behavior. RealVictory uses phone calls to replace this contract which decreases the program's ability to affect change through associations.

Strain theory. According to Agnew's (2006) strain theory, crime is a transformation of stress. He identified three major types of strain, the inability to achieve personal goals, loss of positive stimuli, and introduction of negative stimuli. First, attempting to achieve personal goals, if people feel their opportunities have been blocked, or if they feel inadequate in their abilities, they may turn to criminal activities to bridge the gap. This could be through stealing then selling high-priced electronics, in order to have more spending money, or using drugs to increase athletic performance. Second, the loss of positive stimuli is important in that if people lose someone or something close or important to them they could turn to people who would have a more negative impact on their behavior, but a more positive influence on their emotions. Last, if people, especially adolescents, are exposed to abuse, victimization, or

other negative stimuli, they may be unable to escape from the situation legally so they act out criminally to avoid strain from the people causing the stress. Agnew explained that people reacted to the negative emotions from stress. While some individuals react lawfully, others act criminally to eliminate those negative feelings.

Training programs seeking to use strain theory as a way to reduce recidivism would teach individuals ways to set reachable goals and improve the reactions to the stress they experience. When combining several approaches, the overlap with learning and control theories it is interesting to note that the three bodies of theory overlap making it possible for a program to use strategies that increase associations, the strength of those associations, goal setting and stress reduction making it possible to improve recidivism rates for individuals. RealVictory's training program teaches participants to set reasonable goals as a way to reduce stress. When goals are reachable, there is less strain from the inability to achieve their goals.

Life course theory. Life Course theory helps us understand this phenomenon by explaining how as people age, different influences affect them. Moffitt (1993) explained that most criminal offending happens during the adolescent years. She separated adolescent offenders into two distinct groups, those who act out during adolescence and those who commit crimes across the life course. The adolescent limited group, consisting of about 90 percent of the male population, stopped criminal behavior as they transitioned into adulthood. She called the other 10 percent, life-course-persistent

offenders, those who continued committing crimes throughout their adulthood. The life-course-persistent group was those who exhibited anti-social behavior during childhood and continuously commit crimes throughout their lives (Caspi and Moffitt 1995).

Sampson and Laub (2005) on the other hand argue that as people age, they may develop meaningful bonds with others that help anchor them to legal behavior. Some of the bonds they included were marriage, education, good work and military service, They also pointed out that if people do not make these meaningful relationships, they will be more likely to continue their criminal offending (Sampson and Laub 2005).

While these theories are important in understanding why people stop committing crimes over time, they don't explain how to help people stop criminal behavior before they "age out." After-care programs like RealVictory attempt to fill that gap. They do that by training people to make lawful choices and following up to assist in retention of goals and law-abiding behavior.

Cognitive transformation theory. Giordano and her associates (2002) argued that desistance was a result of four cognitive transformations. These transformations include (1) openness for change, (2) exposure to an opportunity to change, (3) the ability to make a replacement self that avoids criminality, and (4) a transformation in how they view criminal behavior. The first step, openness for change doesn't mean they have stopped committing crime, but that they see that change might be helpful. In the second

step, once they see that change might be beneficial, if they see an opportunity to change the offender could change the way they see their behavior. As they decide that they are now law abiding people, they begin to change how they see the illegal behaviors they used to use. As they see their old behaviors as criminal and they distance themselves from those behaviors, they are more motivated to act in pro-social ways to fit the new view of themselves. This approach relies heavily on emotions and how the individuals' emotions make them more or less likely to see and act on the opportunities to change.

A treatment program that uses the cognitive transformation theory would help people who want to change. The program would help people realize they need to change and help them through the process. They would teach individuals how to create a replacement self that sees lawful behavior as preferable, and teach them how to change the way they view crime and criminal behavior in order to stay attached to the replacement selves they created.

Cognitive behavioral approach. Real Victory uses a Cognitive Behavioral approach to treating participants. Cognitive behavioral training covers many different types of treatments that share some similarities. It combines theories like social learning theory, cognitive treatments and behavioral therapy (Weishaar 1993). Cognitive theorists describe how individuals have a personality that has developed from values learned early in life from a person's environment. These values help individuals decide how to assess and categorize their experiences. Cognitive theorists hypothesize that

psychological problems originate from deficient learning, making wrong assumptions about incorrect information, and not knowing the difference between reality and fiction (Freeman and Dattilio 1992). Cognition and how it shaped people's ideas about the world has been studied for centuries. As far back as Plato, people have been examining how what people perceived was influenced by their concept of the world (Milkman and Wanberg 2005; Reis 2010).

This approach combines changing the behaviors of people using different conditioning methods with cognitive training re-teaching people how to view themselves and the world. As people change their values and their view of the world around them, their behaviors change, thereby reinforcing their cognitive changes, which in turn reinforces their behavioral changes. This feedback loop is the key part of the process that helps people understand "the process and maintenance of change" (Milkman and Wanberg 2005). This feedback loop is used in both the Reality Model and the Character Development model used by RealVictory. As participants make decisions based on their world views, they experience the consequences of those choices. They examine the results and change their views based on the feedback. As their views change, so do their choices, which should then improve their chances of avoiding future criminal behavior.

Character development model. The character development model by J. Owen Cherrington (2000) combines psychology and ethics to help understand how moral

values become part of an individual's identity. Cherrington discussed how attitudes affect why an individual acts the way they do. Their intentions in turn affect their behavior which is then evaluated to determine whether the behavior fell in line with the attitude of the person. Adjustments are made as people see how their attitudes, behaviors, or intentions fit into their identity. The feedback loop used in the character development model shows that as adjustments are made to a person's identity and the values they accept, their intentions and behaviors change to reflect those new values.

This model explains how attitudes, intentions, and behaviors improve. It also explains how behavior change can happen the opposite way. If an individual accepts that criminal behavior is good, their intentions and behaviors will lead to more negative values and behaviors. As part of a treatment program, this model would help participants see how changes in any of the steps in the process affect the whole process. This model would work well in conjunction with another program designed to focus on other areas of life as well as in the case of a program focusing on strain, learning, or control theories.

Summary of theories. While social learning, social control, and strain theories focus on different aspects on an individual's life and interactions, they also overlap when discussing how important a person's associations or relationships are. Learning focuses on what people learn from their relationships while control focuses on the strength of the relationships. Strain on the other hand examines how relationships can either

increase or decrease strain. Life course theory focuses on the changes that happen in life that may increase desistance. As people make meaningful relationships, through work, school, or marriage, the relationships may affect whether offenders return to criminal behavior or turn away from it. The cognitive transformation theory, cognitive behavioral approach, and character development model all focus on changing how people see their world, and helping them understand how to change their behavior to meet the new world view.

Evaluating Treatment Programs

Before the 1970's many people both in and outside the justice system thought there were no programs with the ability to reduce recidivism. Lipton and Martinson (1975) strengthened that belief in which they concluded that nothing could help reduce recidivism. Fortunately over the past 39 years, there has been continued research into what can help people stop reoffending. Meta-analytic studies have suggested several ways to make the treatment programs more effective. Effective programs utilize cognitive behavioral approaches that center on changing thinking patterns and increase skill development, target those at highest risk, focus on the specific needs of the people being treated, and are intensive therapies. In addition, like most treatment programs, they should be implemented well and be conducted by people who have been trained in the training approach (Agnew and Brezina 2009; James et al. 2013; Lipsey and Cullen 2007; Lipsey, Landenberger, and Wilson 2007; James et al 2013; Wilson and Hoge 2012).

The RealVictory Program

The RealVictory training program was created by combining a cognitive training program with a phone coach system. The class was introduced by Carl Reddick, an Oregon parole officer and is based on the Reality Model created by Senator Robert Bennett. His model claims that everyone needs to satisfy four basic needs (1) to live, (2) to love and be loved, (3) to feel important, and (4) to experience variety. According to Bennett (1987), individual behavior is based on how they think their beliefs should be fulfilled, keeping in mind there are consequences attached to their actions (see Figure 1). When individual actions don't fulfill our needs, it is because of erroneous beliefs needing to be reevaluated. Criminal behaviors can be explained as resulting from these erroneous beliefs (Bennett 1987). Reddick believed the Reality Model was very useful in teaching difficult-to-reach people. It is value neutral and lets offenders choose what is right and wrong instead of having someone dictate their morality.

(Figure 1 about here)

The Reality Model closely follows the character development model in that instructors teach participants to change how they see the world. As participants' values and conceptions about the world change, the choices they make tend to follow their new values. When their behavior meets their needs, their new beliefs reinforce their values, thereby strengthening them in the feedback loop.

Goal setting program. In addition to the cognitive training, the participants engage in a goal setting process with assistance from a trainer. First, they establish a primary goal, then they identify daily tasks that help them achieve their primary goal. For example, to learn a new skill, the steps could include practicing the skill in different settings. When overcoming an addiction, the steps may come from an established process like a Twelve Step program.

Studies have demonstrated the benefits of goal-setting programs for motivating behavioral changes. Considerable reviews of research on goal-setting (Latham and Lee 1986, Locke 1968) find that that over ninety percent of both laboratory and field studies show that specific, challenging goals lead to higher performance than do-your-best or no goals. Goal setting is especially powerful when it is combined with feedback that tells the participants how well they are succeeding (Kopelman 1986). Benefits of goal-setting have been demonstrated in a variety of rehabilitation programs including physical therapy, back pain, strokes, and aphasia (Baker, Marshak, Rice, and Zimmerman 2001; Coppack, Kristensen, and Karageorghis 2012; Levack, Dean, Siegert, and McPherson 2001; Hersh, Worrall, Howe, Sherratt, and Davidson 2012).

The phone-coach program. Many technological advances have created excellent opportunities for the implementation of new interventions to facilitate behavioral change. Prior research in the United States, and Europe has shown that phone calls can effectively assist people overcoming addictions to alcohol, tobacco, and drugs (Cacciola,

Camilleri, Carise, Rikoon, McKay, McLellan, Wilson, and Schwarzlose 2008; Mundt, Moore, and Bean 2006; Weitzel, Bernhardt, Usdan, Mays, and Glanz 2007; Gilbert and Sutton 2006; Oudejans, Schippers, Merkx, Schramade, Koeter, and van den Brink 2009). Telephone calls have also been effective in providing exercise training and motivation (Castro and Ling 2002) as well as depression counseling (Datto, Thompson, Horowitz, Disbot, and Oslin 2003).

The phone-coach part of the RealVictory program is an intervention that focuses on changing behavior by providing support for people who accept help by answering the program phone calls (Cherrington, Bahr, Kawai, Bennett, & Burraston 2011). The phone coach can be used to monitor behavior during the change intervention as well as after the intervention has been completed and the person is no longer under the direct supervision of a counselor.

RealVictory participants decide when they will be called and the questions they will be asked. Most participants receive two calls per day at times they feel will be most effective for supporting them in their goal achievement. They also decide the questions asked as well as what behaviors will be rewarded. They are also able to track their progress on the internet to receive immediate feedback. The participants answer questions on their phone keypad and the responses are recorded and they receive pre-recorded messages to reinforce progress. If participants respond negatively,

encouraging messages are played. These pre-recorded messages can be updated by friends or family members to ensure they are relevant and meaningful.

Research Questions

On the surface, RealVictory appears to meet most of the criteria that Agnew and Brezina brought up. As was stated, effective programs (1) center on changing thinking patterns and increase skill development, (2) target those at highest risk, (3) focus on the specific needs of the people being treated, and (4) are intensive therapies. First, RealVictory teaches participants to change the way they view their needs and how they try to meet those needs. They also teach participants how to set and achieve goals. Second, many participants of the RealVictory program were at higher risk of reoffending. The average number of arrests before starting the program was over nineteen with the largest being seventy arrests. The areas RealVictory appears less strong in were focusing on specific needs of individuals and having an intensive program. Group training programs are by their nature less effective at focusing on individual problems, but RealVictory focuses specifically on teaching how to make decisions and set goals and not what people can do specifically to reduce their recidivism. In addition, while RealVictory does have the phone call component lengthening the treatment, intensive therapies have more in-person meetings focusing on individual problems.

This study will evaluate the effectiveness of the RealVictory program by answering the following questions:

1. Does participation in the RealVictory program impact recidivism rates?
2. If so, is there a long-term effect to this program?

METHOD

Participants

The participants were recruited from juveniles in three juvenile corrections programs throughout the state of Utah. First, a district court identified 73 individuals on probation who might benefit from the program. Five groups were included: the first two groups were low to moderate risk offenders randomly assigned to treatment or control groups. Groups were randomly selected by listing available participants and having a computer randomly select whether participants would belong to the treatment or control groups. For the other three groups, the court assigned moderate to high risk offenders to the treatment group and allowed researchers access to court records to identify a matched control group of youth.

Second, Rural Programs administrators selected youth who might benefit from the program and invited them to participate. These participants live in foster homes in rural communities and were randomly assigned to treatment and control groups. Groups were randomly selected by listing available participants and having a computer randomly select whether participants would belong to the treatment or control groups.

Third, administrators of four secure-care facilities identified offenders in their facilities who would benefit from the program and who were anticipated to be released within the next year. The youth were randomly assigned to treatment and control groups, and participants in the treatment group underwent the training and on release attended a transition meeting to explain the phone coach program.

Using this method, 254 participants were selected for participation in the RealVictory Program. The treatment group received both the cognitive training and cell-phones. Both treatment and control groups continued to receive the normal services provided by the court system to offenders. Ninety-one percent of participants were male. Those in the study were between the ages of 12 and 20 at the end of the study period. Fifty-five percent were white, two percent were black, thirty-one percent were Hispanic, and the rest were categorized as other. Twenty-seven percent of the sample were probationers from the district court, twenty-three percent were recruited from rural programs, and fifty percent were recruited from secure care facilities. The treatment group consisted of 55 percent of the sample.

Variables

Dependent variables. This study examines the length of time from when participants began receiving phone calls from the phone coach and their first felony arrest. If participants were not arrested, the date at the end of the study will be used. Time to re-arrest or the end of the study ranged from 5 to 2,995 days with a mean of 997.

In addition, we will examine how the treatment program is related to the number of post-program felony arrests and post overall arrests. Felony arrests are used because they are more likely to result in incarceration even if the charges are downgraded. Total rearrests is a good measure of recidivism since it is an indicator of seriousness—a juvenile who has been rearrested five times is more serious offender than one who has been arrested only once. The number of overall arrests ranged from zero to forty-four with a mean of three, with felony arrests ranging from 0 to 13 with a mean of 1.

Independent variables. The independent variables of most interest is whether the individual was part of the treatment or control group, and the number of phone coach calls members of the treatment group answered in the first four weeks of their participation. We hypothesize that the more calls people answer, the less likely they are to be rearrested. Like with many medical treatments, the more treatments an individual has, the less likely they will be re-arrested. We use phone calls from the first four weeks of participation in order to reduce likelihood that a participant would be re-incarcerated during that time and be unable to answer phone calls. Phone calls from the first four weeks of the program ranged from 0 to 53 with an average of 18 per member of the treatment group.

Control variables. Previous research has shown that criminal history, gender, and race are associated with recidivism (Agnew, 2005; Laub & Sampson, 2003; LeBel, Burnett, Maruna, & Bushway, 2008). Therefore, we controlled for these variables in this

analysis. Since the sample sizes for different ethnic groups were small, we categorized race into “white,” “black,” “Hispanic,” and “other” Finally, since this study occurred over a period of 8 years, we included a variable “time tracked” to measure exposure. Thus, a youth who was part of the first group could have been exposed to re-arrest for up to seven years. On the other hand, a youth from one of the later classes who was in secure care may have been exposed to the possibility of re-arrest for only a few weeks. To measure criminal history we included number of prior arrests and number of prior felony arrests. The number of overall prior arrests ranged from 1 to 70 with a mean of 19 and felonies ranged from 0 to 19 with an average of 3

(Table 1 about here)

Analysis

We used both survival analysis and negative binomial regression (NBR) to examine the RealVictory program. Survival analysis is often used in medical drug studies to determine whether treatment regimens are effective in reducing the hazard of experiencing the phenomena. In the same way, we used survival analysis to determine whether level of participation in the RealVictory program reduces the risk of re-arrest. When examining the effect of the RealVictory program over time, we used a Cox regression to determine how participation in the program is related to the length of time between starting the program and either the study end date or their arrest date.

(Figure 2 about here)

(Figure 3 about here)

In addition to survival analysis, we examined the data using number of post program arrests. Because we used number of rearrests, a count variable, we used NBR to understand the relationship (Hilbe 2011). Using survival analysis we are able to determine if the program increases length of time to re-arrest, and with NBR, we are able to determine if the program may reduce the number of times people are re-arrested. Both survival analysis and negative binomial regression help us understand recidivism, but from different perspectives. Survival analysis shows length of time to and likelihood of re arrest. Negative binomial regression on the other hand enables us to understand whether someone has actually stopped their criminal lifestyle or continued their illegal behavior.

Missing Data

Among all the variables used in this study, there were twenty-two cases containing missing data making up 8.7 percent of the total sample size. The cases with missing data were compared to cases without missing data on race, age, gender, and prior criminal history and we found no significant differences between groups. Because the number of missing cases was less than 10 percent of the sample, they were discarded.

RESULTS

When looking at rearrests among all participants in the study, 34.1 percent were never rearrested. In the control group 35.2 percent were not rearrested, and 33.1 percent of the treatment group were never rearrested. About 61 percent of the sample were not arrested for felonies, 61.2 percent of the control group were not arrested for felonies, and 59.8 percent of the treatment group were not arrested for felonies.

When examining the results of the Cox regression, the hazard ratio for the treatment group was 1.217, suggesting members of the treatment group were at a 21.7 percent higher risk of being rearrested for a felony than members of the control group. However because the result is not statistically significant, both treatment and control groups showed similar results. As age increased though, risk of re-arrest decreased 19 percent for each year older an individual was and this result was significant. We created interaction terms to examine how race interacted with the treatment program. The treatment was less effective for blacks (HR=1.570), Hispanics (HR=1.301), and all others (HR=1.742) than it was for whites, but again as the results were insignificant, there was little variance between the treatment and control groups. In addition, we created interaction terms examining how the program they were recruited from interacted with the treatment program. For people recruited from Rural Programs, the program was more effective than for those recruited from the probation programs (HR=.707). For people recruited from secure care facilities the program was less effective in reducing

risk for re-arrest (HR=1.161), but as these results were not significant either, little variation between groups was observed.

(Table 2 about here)

(Table 3 about here)

(Table 4 about here)

The Negative Binomial Regression model, showed that members of the treatment group had about 19.4 percent more total post program arrests while this finding was not significant, the treatment group had about 54.1 percent more felony arrests than the control group, which was significant. In addition, each call answered in the first four weeks was significantly related to an increase of 2.2 percent in the number of felony arrests. This analysis showed that those sampled from the either secure care facilities or Rural Programs had at least one fewer post arrest than the probationers. Interestingly, those results were significant showing that individuals released from secure care or Rural Programs were arrested less than probationers. Race also influenced the number of times people were rearrested, blacks had higher numbers of re-arrests than whites, while Hispanic and all others had lower numbers of re-arrests than whites. Like the survival analysis, as age increased, the number of re-arrests decreased. When examining the interactions between race and treatment, we found that the treatment had little impact on total rearrests and felony rearrests. Also when looking at facilities

participants were recruited from there was little effect on number of re-arrests, both overall arrests and felony arrests.

(Table 5 about here)

(Table 6 about here)

(Table 7 about here)

DISCUSSION

When looking at the RealVictory program, it sounds like it should reduce recidivism rates among offenders. Unfortunately though, with the data we have analyzed it is not possible to say it is an effective program in reducing recidivism. When looking at the risk of re-arrest using event history analysis, members of the treatment group were at a higher risk of re-arrest, and when looking at the results of the regression, members of the treatment group had more arrests after participation in the program than members of the control group. Because of the large variance in data though most of the results are not statistically significant. This means that while the results of this study suggest the program doesn't work, it is not able to be generalized across the population.

What Can Be Done?

While the RealVictory program is not effective at reducing recidivism in the sample for this study, there are ways that could be used to improve the program based on theories discussed in this study. Each theory speculates what can be done to reduce

recidivism from different perspectives. We will discuss what each theory recommends to improve this program and other programs seeking to reduce recidivism and crime in general.

Social learning theory. Social learning discusses how associates help shape how individuals think and act. If they closely identify with lawful associates, they are more likely to act in lawful ways, with the opposite being true as well. RealVictory uses associates to reinforce the goals people set. When participants receive calls, they are given prerecorded feedback encouraging them to continue working towards their goals. Because the participant can change who is giving them encouragement, if they distance themselves from the original encourager, they can pick a friend or family member they have a better relationship with.

Social control theory. Like learning theory, control theory uses an individual's associates to explain how people act, or don't act, a certain way. Hirschi explained that criminal acts happen when a person's bonds to society are weak or broken (1969). RealVictory reinforces control theory the same way it uses learning theory, by having friends or family members use encouraging messages to motivate goal keeping or involvement in legal activities. Unfortunately, when looking at the other areas in control theory like commitment and belief, RealVictory doesn't really look to improve their level of commitment or belief in conventional behavior.

Strain theory. Strain theory is different from control or learning theories because it relies less on friends or family and more on ability to achieve goals. When a person feels they are unable to achieve their goals, they react to stress in different ways. Some find legal ways to achieve their goals and others find illegal ways. RealVictory doesn't really teach participants how to react to stressors, but they do focus on setting reachable goals, which enable people to avoid the stress associated with failure to achieve goals.

Life course theory. Interestingly, age was the one variable in this study that showed a significant effect across models in improving time to re-arrest and reducing the number of arrests. This study confirms the fact that as people age, they tend to be less likely to commit crimes. RealVictory doesn't have much of an impact in this area as it tends to be relationships that are made as people age, whether through jobs, marriage, etc.

Cognitive transformation theory. This theory's focus on change explains the process for adjusting to a lawful life. RealVictory's focus on offenders shortly after release hopes to catch people in the openness to change stage in the process. Unfortunately, not everyone who is released is ready to transform into a law-abiding citizens. RealVictory uses a values-free training approach focusing more on letting participants choose for themselves how they feel they should act. This unfortunately seems to undermine what the theory suggests as people need to know what is moral before they can act morally.

Cognitive behavioral approach. When examining RealVictory from a cognitive behavioral perspective, we see that they focus on helping people adjust their views of how the world works and then base their behavior on that view. This approach focuses on teaching people how to act, then letting them practice both in safe places like during the training and then in the real world. RealVictory does use this approach to their training. The trainers encourage participants to practice making decisions and then teaching another person what they have learned thereby reinforcing the instructions from class.

Character development model. This model is closely related to the reality model used by the RealVictory program. The feedback loop explains how as people make choices, those choices are based on how they view the world. They also discuss how any choice has consequences and those consequences then influence the choices they make in the future.

Theories overall. Overall, RealVictory hits parts of each of the theories discussed in this study. It follows most closely the cognitive behavioral approach and character development model, but those are not enough. In addition to these theories, Agnew and Brezina (2012) discuss that in addition to following the cognitive behavioral approach, there were several other criteria that needed to be followed to be an effective program. First, the program should focus on major causes of delinquency, while the RealVictory

program discusses choices and goals, there are many other risk factors involved in criminal behavior. They should involve parents, and examine all areas of one's life.

Second, the therapy must be intensive or long term and employ techniques like the cognitive behavioral approach to change behaviors. This is one area that RealVictory has attempted to fit very well. The program uses the cognitive behavioral approach to teach individuals how to make choices and set goals. The phone coach program was implemented as a way to extend access to individuals over a longer period of time.

Third, the program should focus on individuals at highest risk. This program recruited participants randomly so there was no assurance that the highest risk offenders would be selected to participate.

Fourth, the program should be run in the community instead of inside institutions. While RealVictory did teach part of the training while some participants were incarcerated, the largest portion of the program, the phone coach, was outside of secure care facilities.

Last, participants should have a warm, but firm relationship with their counselors. Unfortunately, with the phone coach, these relationships did not happen. While the participants may have created relationships with the trainers at their classes, those relationships ended when the classes did.

While the RealVictory program fit several of Agnew and Brezina's (2012) criteria for effective programs, they are missing a couple important parts. They fail to focus on

the major causes of criminal behavior, by mostly focusing on goals and choices, they overlook other causes like gang membership, drug use, or others. They also focused on all offenders rather than the most at risk. This wasted resources that could have been put to more use with higher risk offenders. And finally, because they use the phone coach system, the participants are unable to make meaningful relationships with counselors who could act as mentors and models of good behavior to follow.

Overall, while RealVictory does use theory to support its program, there are some shortcomings that make it less effective at reducing recidivism among the participants of this study. If they were able to meet the needs as stated by Agnew and Brezina (2012), by providing mentors and focusing on highest risk offenders, they would be better able to support the needs of offenders in reducing recidivism.

Limitations

This study is hampered by several factors that limit the scope of this study. The small sample size and single geographic pool of participants limits the demographic variability of the participants and reduces the ability to generalize the results to a particular population. In addition, a total class time of 9 hours over the course of 6 weeks limits the amount of time to adopt the practices outlined in the program. The class also focuses on general topics instead of focusing on specific criminal behaviors.

CONCLUSION

Recommendations

RealVictory's strengths are focused around the ability to treat many people for less money than other programs. The effectiveness of the program could be improved by changing a few things. Periodic group sessions focusing on individuals with specific criminal backgrounds and risk levels would improve relationships between participants and a mentor who would model lawful behavior. In addition, refresher classes would help participants remember to set reachable goals and make good choices. These would act in addition to the phone calls making calls more effective. In addition some incentive to answer calls may increase the number of calls answered. This incentive could be entries into drawings or other enticements. While these recommendations would increase the cost of the program, the improvements in the effectiveness of the program would justify the increased cost.

REFERENCES

- Agnew, Robert. 2005. *Why do Criminals Offend? A General Theory of Crime and Delinquency*. Los Angeles, CA: Roxbury.
- Agnew, Robert. 2006. "General Strain Theory: Current Status and Directions for Further Research." Pp.101-23 in *Taking Stock: The Status of Criminological Theory*, edited by F. Cullen, J. Wright, and K. Blevins. New Brunswick, NJ: Transaction.
- Agnew, Robert and Timothy Brezina. 2012. *Juvenile Delinquency: Causes and Control*. New York, NY: Oxford University Press.
- Baker, Susan M., Helen H. Marshak, Gail T. Rice, and Grennith J. Zimmerman. 2001. "Patient Participation in Physical Therapy Goal Setting." *Physical Therapy* 81(5):1118-26.
- Becker, Howard S. 1963. *Outsiders: Studies in the Sociology of Deviance*. New York, NY: Free Press.
- Bennett, Robert F. 1987. *Gaining Control*. Salt Lake City, UT: Franklin International Institute.
- Braithwaite, John. 2002. *Restorative Justice and Responsive Regulation*. Oxford, UK: Oxford University Press.
- Burraston, Bert O., Stephen J. Bahr, and David J. Cherrington. 2013. "Reducing Juvenile Delinquency with Automated Cell Phone Calls." *International Journal of Offender Therapy and Comparative Criminology* 58(5):522-36.

- Burraston, Bert O., David J. Cherrington, and Stephen J. Bahr. 2012. "Reducing Juvenile Recidivism with Cognitive Training and a Cell Phone Follow-up: An Evaluation of The RealVictory Program." *International Journal of Offender Therapy and Comparative Criminology* 56(1):61–80.
- Bushway, Shawn D., Alex R. Piquero, Lisa M. Brody, Elizabeth Cauffman, and Paul Mazerolle. 2001. "An Empirical Framework for Studying Desistance as a Process." *Criminology* 39(2):491-516.
- Cacciola, John S., Amy C. Camilleri, Deni Carise, Samuel H. Rikoon, James R. McKay, A. Thomas McLellan, Cheryl Wilson, and John T. Schwarzlose. 2008. "Extending Residential Care through Telephone Counseling: Initial Results from the Betty Ford Center Focused Continuing Care Protocol." *Addictive Behaviors* 33(9):1208-16.
- Caspi, Avshalom and Terrie E. Moffitt. 1995. "The Continuity of Maladaptive Behavior: From Description to Understanding in the Study of Antisocial Behavior." Pp. 472-511 in *Manual of Developmental Psychology* edited by D. Cicchetti and D. Cohen. New York, NY: John Wiley.
- Castro, Cynthia M., and Abby C. Ling. 2002. "Telephone-assisted Counseling for Physical Activity." *Exercise and Sport Science Review* 30(2):64-8.
- Cherrington, J. Owen. 2000. *Moral Leadership and Ethical Decision Making*. Provo, UT: CHC Forecast Inc.

- Cherrington, David J., Stephen J. Bahr, Leslie A. Kawai, Bruce Bennett, & Burt O. Burraston. 2011. *Helping Offenders: What Works?* Springville, UT: RealVictory.
- Coppack, Russell J., Jakob Kristensen, and Costas I. Karageorghis. 2012. "Use of a Goal Setting Intervention to Increase Adherence to Low Back Pain Rehabilitation: A Randomized Controlled Trial." *Clinical Rehabilitation* 26(11):1032-42.
- Datto, Catherine J., Richard Thompson, David Horowitz, Maureen Disbot, and David W. Oslin. 2003. "The Pilot Study of a Telephone Disease Management Program for Depression." *General Hospital Psychiatry* 25(3):169-77.
- Donnerstein, Edward and Daniel Linz. 1995. "The Media." Pp. 237-266, in *Crime*, edited by J. Q. Wilson and J. Petersilia. San Francisco, CA: ICS Press.
- Freeman, Arthur and Frank M. Dattilio. 1992. *Comprehensive Casebook of Cognitive Therapy*. New York, NY: Plenum Press.
- Gilbert, Hazel and Stephen Sutton. 2006. "Evaluating the Effectiveness of Proactive Telephone Counseling for Smoking Cessation in a Randomized Controlled Trial." *Addiction* 101(4):590-8.
- Giordano, Peggy C., Stephen A. Cernkovich, and Jennifer L. Rudolph. 2002. "Gender, Crime and Desistance: Toward a Theory of Cognitive Transformation." *American Journal of Sociology* 107(4): 990-1064
- Harris, Phil, Brian Lockwood, and Liz Mengers. 2009. *Defining and Measuring Recidivism*. Braintree, MA.

Hersh, Deborah, Linda Worrall, Tami Howe, Sue Sherratt, and Bronwyn Davidson.

2012. "SMARTER Goal Setting in Aphasia Rehabilitation." *Aphasiology* 26(2): 220-33.

Hilbe, Joseph M. 2011. *Negative Binomial Regression*. 2nd edition. Cambridge: Cambridge University Press.

Hirschi, Travis. 1969. *Causes of Delinquency*. Berkley, CA: University of California Press.

International Centre for Prison Studies. "World Prison Brief." Kings College, London.

Retrieved December 11, 2013 (<http://www.prisonstudies.org/world-prison-brief>).

James, Chrissy, Jan J. Geert, M. Stams, Jessica J. Asscher, Anne Katrien De Roo, and

Peter H. Van der Laan. 2013. "Aftercare Programs for Reducing Recidivism

Among Juvenile and Young Adult Offenders: A Meta-analytic Review." *Clinical*

Psychology Review 33(2):263-74.

Kopelman, Richard E. 1986. "Objective Feedback." Pp. 119-45 in *Generalizing from*

Laboratory to Field Settings, edited by E.A. Locke. Lexington, MA: Lexington

Books.

Laub, John H. and Robert J. Sampson. 2003. *Shared Beginnings, Divergent Lives:*

Delinquent Boys to Age 70. Cambridge, MA: Harvard University Press.

LeBel, Thomas P., Ros Burnett, Shad Maruna, and Shawn Bushway. 2008. "The 'Chicken

and Egg' of Subjective and Social Factors in Desistance from Crime." *European*

Journal of Criminology 5(2):131-59.

- Levack, William M. M., Sarah G. Dean, Richard J. Siegert, and Kath M. McPherson. 2011. "Navigating Patient-centered Goal Setting in Inpatient Stroke Rehabilitation: How Clinicians Control the Process to Meet Perceived Professional Responsibilities." *Patient Education and Counseling* 85(2):206-13.
- Lipsey, Mark W., Nana A. Landenberger, and Sandra J. Wilson. 2007. "Effects of Cognitive-behavioral Programs for Criminal Offenders." Oslo, Norway: Campbell Collaboration
- Lipton, Douglas, Robert Martinson and Judith Wilks. 1975. *The Effectiveness of Correctional Treatment: A Survey of Treatment Evaluation Studies*. New York, NY: Praeger.
- Lynch, James P. 2006. "Prisoner Reentry: Beyond Program Evaluation." *Criminology & Public Policy* 5(2):401-412.
- Maruna, Shadd. 2001. *Making Good: How Ex-convicts Reform and Rebuild their Lives*. Washington, DC: American Psychological Association.
- Milkman, Harvey B., and Kenneth W. Wanberg. 2005. *Criminal Conduct and Substance Abuse Treatment for Adolescents: Pathways to Self-discovery and Change*. Thousand Oaks, CA: Sage.
- Moffitt, Terrie E. 1993. "Adolescence-limited and Life-course-persistent Antisocial Behavior: A Developmental Taxonomy." *Psychological Review* 100(4):131-158.

- Mulder, Eva, Eddy Brand, Ruud Bullens, and Hjalmar Van. 2010. "A Classification of Risk Factors in Serious Juvenile Offenders and the Relation Between Patterns of Risk Factors and Recidivism." *Criminal Behaviour And Mental Health* 20(1):23–38.
- Mulder, Eva, Eddy Brand, Ruud Bullens, and Hjalmar van Marle. 2011. "Risk Factors for Overall Recidivism and Severity of Recidivism in Serious Juvenile Offenders." *International Journal of Offender Therapy and Comparative Criminology* 55(1):118–35.
- Mundt, James C., Heidi K. Moore, and Pamela Bean. 2006. "An Interactive Voice Response Program to Reduce Drinking Relapse: A Feasibility Study." *Journal of Substance Abuse Treatment* 30(1):21-9.
- Oudejans, Susan C., Gerardus M. Schippers, Maarten J.M. Merkx, Mark H. Schramade, Maarten W.J. Koeter, and Wim van den Brink. 2009. "Feasibility and Validity of Low-budget Telephonic Follow-up Interviews in Routine Outcome Monitoring of Substance Abuse Treatment." *Addiction* 104(7):1138-46.
- Paternoster, Raymond and Leeann Iovanni. 1989. "The Labeling Perspective and Delinquency: An Elaboration of the Theory and an Assessment of the Evidence." *Justice Quarterly* 6(3):359-94.
- Persilia, Joan. 2009. *When Prisoners Come Home: Parole and prisoner reentry*. New York, NY: Oxford University Press.

- Puzzanchera, Charles, Benjamin Adams, and Sarah Hockenberry. 2012. *Juvenile Court Statistics 2009*. Pittsburgh, PA: National Center for Juvenile Justice.
- RealVictory. 2013. "Our Mission." Retrieved December 11, 2013.
(http://realvictory.org/about_us/).
- Reis, Harry T. 2010. "How We Got Here From There: A Brief History of Social Psychology." Pp. 25-60 in *Advanced Social Psychology: The State of the Science*, edited by R.F. Baumeister and E.J. Finkel. Oxford, UK: Oxford University Press.
- Ryan, Joseph P., Abigail B. Williams, and Mark E. Courtney. 2013. "Adolescent Neglect, Juvenile Delinquency and the Risk of Recidivism." *Journal of Youth and Adolescence* 42(3):454–65.
- Sampson, Robert J. and John H. Laub. 2005. "A Life-course View of the Development of Crime." *Annals of the American Academy of Political and Social Science* 602(1):12-45.
- Schwalbe, Craig S., Robin E. Gearing, Michael J. MacKenzie, Kathryn B. Brewer, and Rawan Ibrahim. 2012. "A Meta-analysis of Experimental Studies of Diversion Programs for Juvenile Offenders." *Clinical Psychology Review* 32(1):26–33.
- Sherman, Lawrence F. 2000. *The Defiant Imagination*. The Albert M. Greenfield Chair Inaugural Lecture, University of Pennsylvania.
- Toby, Jackson. 1957. "Social Disorganization and Stake in Conformity: Complementary Factors in the Predatory Behavior of Hoodlums." *Journal of Criminal Law, Criminology, and Police Science* 48(1):12-17.

Van der Put, Claudia E., Geert-Jan J. M. Stams, Machteld Hoeve, Maja Dekovic, Han

J.M. Spaanjard, Peter H. van der Laan, and Robert P. Barnoski. 2012. "Changes in the Relative Importance of Dynamic Risk Factors for Recidivism During Adolescence." *International Journal of Offender Therapy and Comparative Criminology* 56(2):296–316.

Weishaar, Marjorie E. 1993. *Key Figures in Counseling and Psychotherapy*, Aaron T. Beck. Thousand Oaks, CA: Sage.

Weitzel, Jessica A., Jay M. Bernhardt, Stuart Usdan, Darren Mays, and Karen Glanz. 2007. "Using Wireless Handheld Computers and Tailored Text Messaging to Reduce Negative Consequences of Drinking Alcohol." *Journal of Studies on Alcohol and Drugs* 68(4):534-537

FIGURES

Figure 1 - The Reality Model

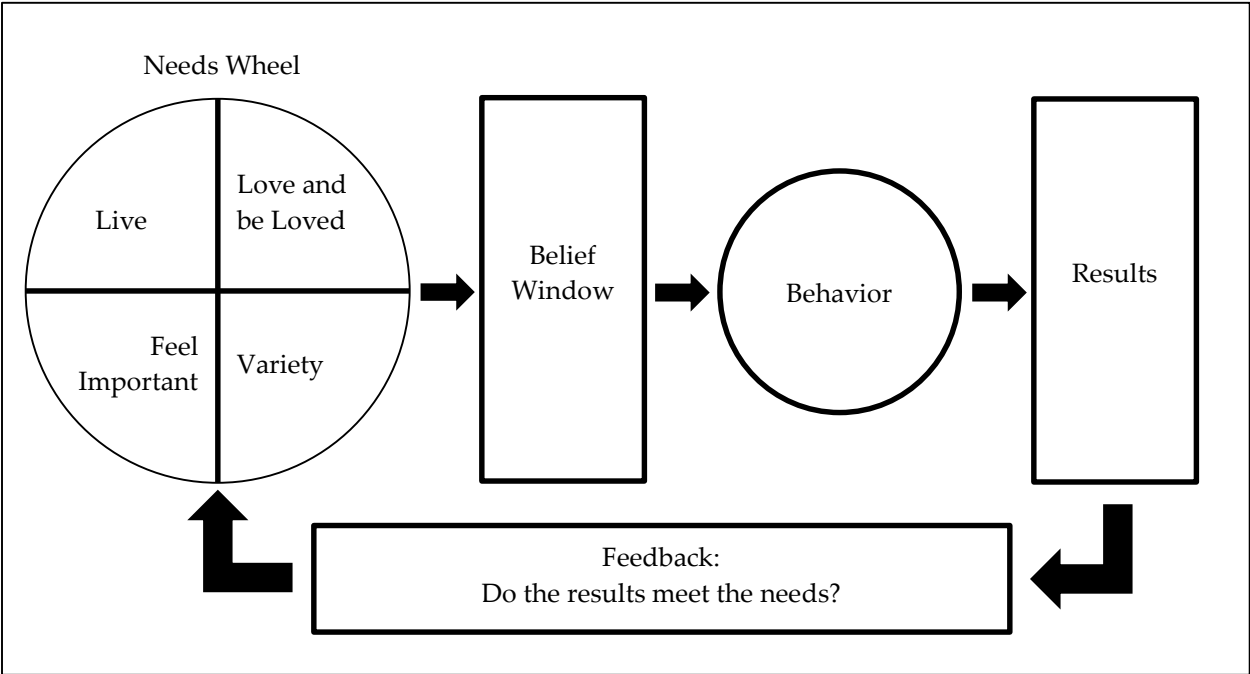


Figure 2 - Hazard Estimates by Treatment

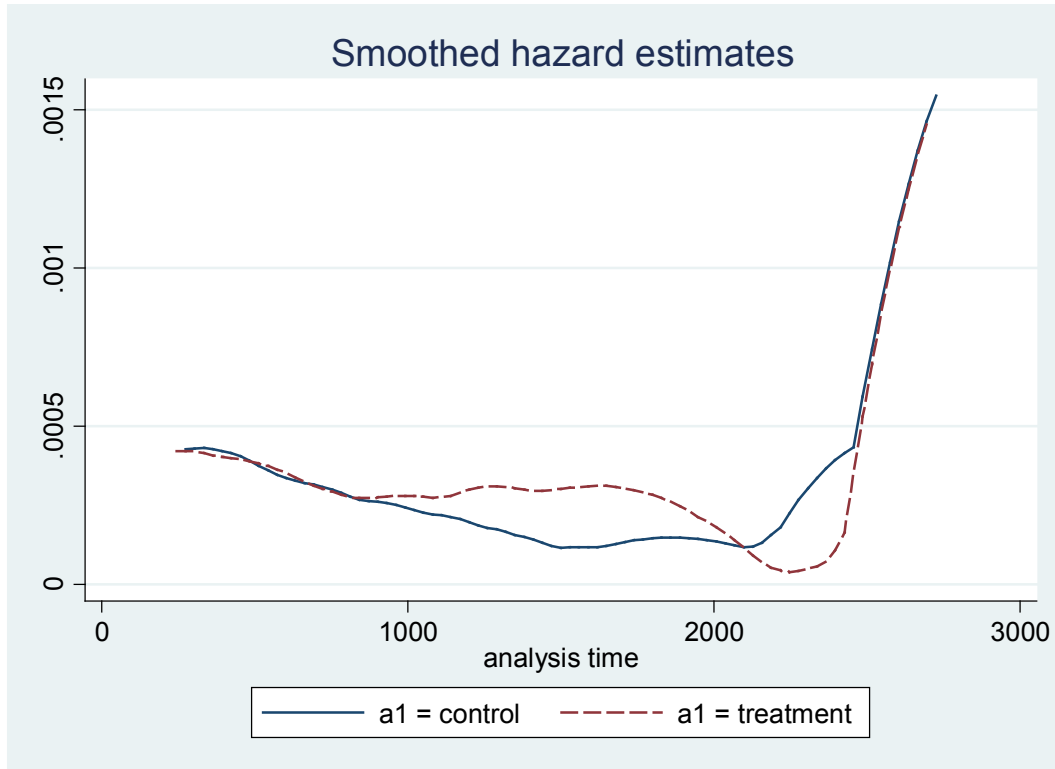
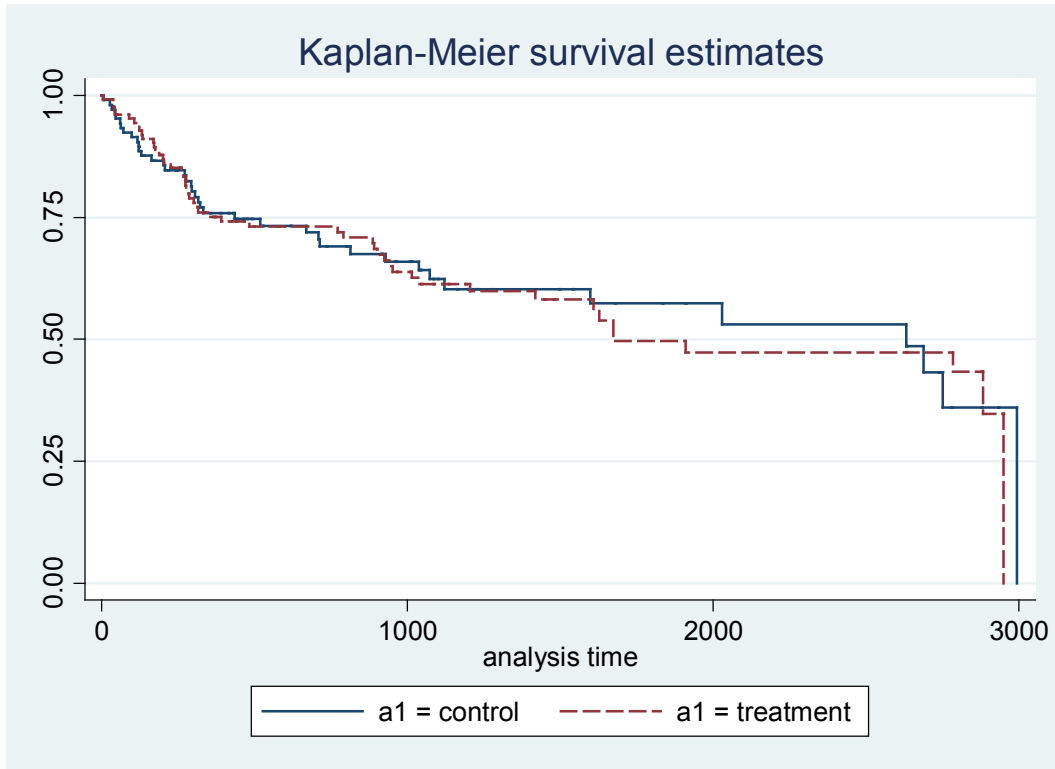


Figure 3 - Survival Estimates by Treatment



TABLES

Table 1. Variables to study

| Variable | Min | Max | Mean | SD | Skewness | Kurtosis |
|---------------------------|--------|--------|--------|--------|----------|----------|
| White | 0 | 1 | .556 | .498 | -.226 | 1.051 |
| Black | 0 | 1 | .022 | .146 | 6.590 | 44.422 |
| Hispanic | 0 | 1 | .306 | .462 | .841 | 1.709 |
| Other | 0 | 1 | .116 | .321 | 2.393 | 6.724 |
| Male | 0 | 1 | .909 | .287 | -2.854 | 9.147 |
| Age | 12.468 | 20.726 | 17.101 | 1.359 | -.448 | 3.364 |
| Treatment | 0 | 1 | .547 | .499 | -.191 | 1.036 |
| 4thDistrict | 0 | 1 | .254 | .436 | 1.128 | 2.273 |
| RuralPrograms | 0 | 1 | .224 | .418 | 1.323 | 2.750 |
| SecureCare | 0 | 1 | .522 | .501 | -.086 | 1.007 |
| # Calls Answered* | 0 | 51 | 8.172 | 13.627 | 1.537 | 4.142 |
| # Pre Arrests | 0 | 70 | 19.375 | 11.819 | .876 | 3.925 |
| # Pre Felonies | 0 | 19 | 3.241 | 3.503 | 1.803 | 6.618 |
| # Post Arrests | 0 | 44 | 3.216 | 5.230 | 3.728 | 22.811 |
| # Post Felonies | 0 | 13 | 1.086 | 2.132 | 3.343 | 16.279 |
| Time to Felony (in years) | .013 | 8.205 | 2.575 | 2.357 | 1.014 | 2.961 |
| Time at Risk (in years) | .216 | 8.205 | 3.376 | 2.337 | .691 | 2.480 |

*Descriptive statistics from treatment group only

Table 2. Cox Regressions Likelihood of Re-arrest by Treatment/Control Groups

| Variables in Model | All Cases (n=235) |
|---------------------|----------------------|
| Treatment | 1.217 |
| Rural Programs | 1.903 |
| Secure Care | 4.950*** |
| # Previous Offenses | 1.009 |
| # Previous Felonies | .986 |
| Black | .998 |
| Hispanic | .753 |
| Other | .722 |
| Gender | .922 |
| Age | .799* |

*p<.05; **p<.01; ***p<.001

Table 3. Cox Regressions Likelihood of Re-arrest by
Number of Calls Answered in First 4 Weeks

| Variables in Model | All Cases (n=234) |
|----------------------------------|----------------------|
| Number of Calls Answered 4 Weeks | 1.004 |
| Rural Programs | 1.952 |
| Secure Care | 4.923*** |
| # Previous Offenses | 1.009 |
| # Previous Felonies | .987 |
| Black | .948 |
| Hispanic | .762 |
| Other | .698 |
| Gender | .920 |
| Age | .806* |

*p<.05; **p<.01; ***p<.001

Table 4. Cox Regressions Likelihood of Re-arrest by Treatment/Control Groups with Interactions

| Variables in Model | All Cases (n=235) |
|-------------------------|----------------------|
| Treatment | 1.023 |
| Rural Programs | 2.361 |
| Secure Care | 4.733** |
| # Previous Offenses | 1.009 |
| # Previous Felonies | .980 |
| Black | .807 |
| Hispanic | .641 |
| Other | .523 |
| Gender | .957 |
| Age | .798* |
| Black*Treatment | 1.570 |
| Hispanic*Treatment | 1.301 |
| OtherRace*Treatment | 1.742 |
| RuralPrograms*Treatment | .707 |
| SecureCare*Treatment | 1.161 |

*p<.05; **p<.01; ***p<.001

Table 5. Negative Binomial Regression Number of Re-arrests
by Treatment/Control Groups

| Variables in Model | # Post Arrests | # Post Felonies |
|---------------------|----------------|-----------------|
| Treatment | .194 | .541* |
| Rural Programs | .164 | 1.636** |
| Secure Care | .417 | 2.504*** |
| # Previous Offenses | .027*** | .015 |
| # Previous Felonies | -.071** | -.041 |
| Time at Risk | .313*** | .535*** |
| Black | .783 | -.832 |
| Hispanic | -.243 | -.393 |
| Other | .034 | -.087 |
| Gender | .280 | .626 |
| Age | -.338*** | -.144 |
| _cons | 4.601*** | -2.079 |

*p<.05; **p<.01; ***p<.001

Table 6. Negative Binomial Regression Number of Re-arrests by Number of Calls First 4 weeks

| Variables in Model | # Post Arrests | # Post Felonies |
|---------------------|----------------|-----------------|
| Number of Calls | .005 | .022* |
| Rural Programs | .143 | 1.806** |
| Secure Care | .389 | 2.678*** |
| # Previous Offenses | .026*** | .016 |
| # Previous Felonies | -.070** | -.040 |
| Time at Risk | .301*** | .525 |
| Black | .730 | -1.047 |
| Hispanic | -.245 | -.381 |
| Other | -.004 | -.270 |
| Gender | .302 | .710 |
| Age | -.337*** | -.161 |
| _cons | 4.696*** | -1.872 |

*p<.05; **p<.01; ***p<.001

Table 7. Negative Binomial Regression with Interactions
 Number of Re-arrests by Treatment/Control Groups

| Variables in Model | # Post Arrests | # Post Felonies |
|---------------------|----------------|-----------------|
| Treatment | .284 | .663 |
| Rural Programs | .523 | 2.052** |
| Secure Care | .504 | 2.458** |
| # Previous Offenses | .026*** | .012 |
| # Previous Felonies | -.074** | -.043 |
| Time at Risk | .309*** | .538*** |
| Black | .624 | -.477 |
| Hispanic | -.306 | -.201 |
| Other | -.316 | -.197 |
| Gender | .331 | .692 |
| Age | -.347*** | -.164 |
| Black*Treat | .178 | -.729 |
| Hisp*Treat | .096 | -.328 |
| Other*Treat | .536 | .175 |
| Rural*Treat | -.646 | -.683 |
| SecureCare*Treat | -.096 | .202 |
| _cons | 4.665 | -1.880 |

*p<.05; **p<.01; ***p<.001