

**ASSESSING THE EFFECTIVENESS OF MENTAL HEALTH COURTS: A META-
ANALYSIS OF CLINICAL AND RECIDIVISM OUTCOMES**

by

Christine Marie Sarteschi

B.S.W, University of Pittsburgh, 2001

M.S.W, University of Pittsburgh, 2002

Submitted to the Graduate Faculty of the
School of Social Work in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

University of Pittsburgh

2009

UNIVERSITY OF PITTSBURGH
School of Social Work

This dissertation was presented

by

Christine Marie Sarteschi

It was defended on

July 22, 2009

and approved by

Valire Carr Copeland, PhD, MPH, Associate Professor, School of Social Work

Michael G. Vaughn, PhD, Assistant Professor, School of Social Work and School of Public
Health, Saint Louis University

Jeffrey Shook, PhD, Assistant Professor, School of Social Work

Rachel A. Fusco, PhD, Assistant Professor, School of Social Work

Kevin H. Kim PhD, Assistant Professor, Psychology in Education

Copyright © by Christine Marie Sarteschi

2009

ASSESSING THE EFFECTIVENESS OF MENTAL HEALTH COURTS: A META-ANALYSIS OF CLINICAL AND RECIDIVISM OUTCOMES

Christine Marie Sarteschi, PhD

University of Pittsburgh, 2009

Abstract

Mental health courts (MHC) are treatment oriented court diversion programs that seek to redirect individuals with severe mental illnesses (SMI), such as those with schizophrenia, bipolar disorder, and major depression, who have committed a crime, into court mandated treatment programs instead of the criminal justice system. It is believed that individuals with SMI commit and re-commit offenses as a result of their illness and if directed to the appropriate treatments, would be less likely to offend. Currently, there are over 150 MHCs nationally operating in at least 35 states, yet a gap remains in the scientific literature concerning their ability to reduce recidivism and clinical outcomes. To determine their effectiveness in reducing recidivism and improving clinical outcomes, the first meta-analytic study of these courts was conducted. A systematic search of the literature through May 2008, as well as an e-mail survey, generated 23 studies representing 129 outcomes with over 11,000 MHC participants. Aggregate effects for recidivism revealed a mean effect size of -0.52. MHCs had a small to medium positive effect of 0.28 on a participant's quality of life. Among quasi-experimental studies, there was a small effect size of - 0.14 for clinical outcomes indicating a positive improvement. Based on this analysis, MHCs are effective interventions for reducing recidivism and improving clinical and quality of life outcomes.

TABLE OF CONTENTS

I. INTRODUCTION.....	1
A. ADVANTAGES OF META-ANALYSIS FOR MHC EVALUATIONS.....	2
B. CRITICISMS OF META-ANALYSIS.....	3
C. PURPOSE OF STUDY.....	4
II. LITERATURE REVIEW.....	6
A. BACKGROUND AND SIGNIFICANCE	6
B. POTENTIAL CAUSES AND THEORIES RELATED TO WHY MANY INDIVIDUALS WITH SERIOUS MENTAL ILLNESS ARE INCARCERATED	10
1. DEINSTITUTIONALIZATION.....	10
2. HEALTH POLICY INFLUENCES.....	13
3. CHANGES IN DRUG LAWS.....	16
4. CRIMINOLOGICAL THEORIES/FRAWORKS RELATED TO THE INCREASE IN NUMBER OF MENTALLY ILL INMATES.....	17
5. SUBSTANCE ABUSE	21
6. CONDUCT DISORDER AND SCHIZOPHRENIA	23
7. SUMMARY	25
C. MENTAL HEALTH COURT LITERATURE REVIEW	25
1. DEFINITION OF A MENTAL HEALTH COURT	25
2. WHY MENTAL HEALTH COURTS ARE NEEDED.....	27
3. THE EVOLUTION OF MHCs.....	32

4. COORDINATION, ADMINISTRATION AND EVALUATION OF THE MHC PROGRAM.....	36
5. TYPES OF MEASURES AND OUTCOMES COMMONLY USED OR REPORTED IN THE MHC LITERATURE	36
6. MHCs AND RECIDIVISM.....	37
7. MHC'S AND THEORY	39
8. ANOSOGNOSIA, LEVERAGE AND MHCs	40
9. MHCs AND THE PUBLIC MENTAL HEALTH SYSTEM.....	41
10. PLEADING GUILTY	42
11. LEGALITY OF MHCs	44
12. COGNITIVE ABILITY AND MHCs.....	45
13. SUMMARY	46
III. METHOD	48
A. DATA SOURCES AND SEARCHES	48
B. E-MAIL INQUIRY.....	49
1. E-MAIL INQUIRY METHOD.....	49
2. E-MAIL INQUIRY RESULTS	50
C. STUDY SELECTION.....	52
D. TYPES OF STUDIES.....	52
E. ASSESSING METHODOLOGICAL QUALITY	56
F. COMPARING THE THREE METHODOLOGICAL QUALITY SCALES.....	59
G. STATISTICAL ANALYSIS.....	59
1. HETEROGENEITY AND STATISTICAL MODELING	60

2. CONFIDENCE INTERVAL CHART	61
3. PUBLICATION BIAS	62
4. FAIL-SAFE <i>N</i>	62
5. MODERATOR ANALYSIS.....	62
6. STRATIFIED ANALYSIS	63
H. STUDIES NOT INCLUDED IN QUANTITATIVE ANALYSIS.....	64
I. SUMMARY	66
IV. RESULTS	68
A. DESCRIPTION OF STUDIES.....	68
B. FUNDING SOURCES.....	70
C. STUDY PARTICIPANT CHARACTERISTICS.....	71
D. CLINICAL DIAGNOSES OF STUDY PARTICIPANTS.....	75
E. NATURE OF OPERATION AND SERVICES	76
F. THEORETICAL DISCUSSION	76
G. MQRS SCORES AND TREATMENT DURATION	77
1. MEASURES	77
H. EFFECT SIZE ANALYSIS.....	78
1. OVERALL AGGREGATED RESULTS	78
2. RECIDIVISM OUTCOMES	84
3. MENTAL HEALTH/CLINICAL, QUALITY OF LIFE AND SUBSTANCE ABUSE OUTCOMES.....	86
4. STRATIFIED ANALYSIS RESULTS.....	87

5. STUDIES PUBLISHED IN PEER REVIEWED VERSUS NON-PEER REVIEWED SOURCES.....	91
6. MODERATION ANALYSIS RESULTS	96
I. SUMMARY.....	100
V. DISCUSSION	101
A. GENDER, RACE, AND MHCS.....	113
B. IMPLICATIONS FOR SOCIETY AND THOSE WITH A SEVERE MENTAL ILLNESS	115
C. IMPLICATIONS FOR RESEARCH.....	115
D. IMPLICATIONS FOR SOCIALWORK, OTHER MENTAL HEALTH PROFESSOINALS, AND CRIMINAL JUSTICE PROFESSIONALS	117
D. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH	119
E. POLICY AND PRACTICE RECOMMENDATIONS	123
F. CONCLUSION	125
APPENDIX A-MEASURES UTILIZED IN PRIMARY STUDIES	127
BIBLIOGRAPHY.....	130

LIST OF TABLES

TABLE 1. POSSIBLE UNINTENDED EFFECTS THAT OFFENDERS MAY FACE AFTER INCARCERATION	43
TABLE 2. CHARACTERISTICS OF STUDIES INCLUDED IN META-ANALYSIS	68
TABLE 3. STUDY PARTICIPANT CHARACTERISTICS (n=23)	72
TABLE 4. SUMMARY OF ALL EFFECT SIZE CALCULATIONS.....	80
TABLE 5. ALL OUTCOMES SHOWING CONFIDENCE INTERVALS AND HEDGES’S g MEAN (n=23).....	83
TABLE 6. RECIDIVISM OUTCOMES SHOWING CONFIDENCE INTERVALS AND HEDGES’S g MEAN (n=18)	85
TABLE 7. QUASI-EXPERIMENTAL STUDIES SHOWING CONFIDENCE INTERVALS AND HEDGES’S g MEAN (n=17).....	88
TABLE 8. QUASI-EXPERIMENTAL STUDIES SHOWING CONFIDENCE INTERVALS AND HEDGES’S g MEAN FOR RECIDIVISM OUTCOMES ONLY	90
TABLE 9. STUDIES PUBLISHED IN PEER REVIEWED SOURCES SHOWING CONFIDENCE INTERVALS AND HEDGES’S g MEAN (n=13)	92
TABLE 10. STUDIES PUBLISHED IN NON-PEER REVIEWED SOURCES SHOWING CONFIDENCE INTERVALS AND HEDGES’S g MEAN (n=10)	94
TABLE 11. “HIGH QUALITY” STUDIES SHOWING CONFIDENCE INTERVALS AND HEDGES’S g MEAN (n=14)	98
TABLE 12. “LOW QUALITY” STUDIES SHOWING CONFIDENCE INTERVALS AND HEDGES’S g MEAN (n=9)	99

LIST OF FIGURES

FIGURE 1. QUOROM FLOW DIAGRAM OF REVIEWING PROCESS.....	54
FIGURE 2. FUNNEL PLOT OF THE STANDARD ERROR BY EFFECT SIZE HEDGES'S g FOR ALL MHC OUTCOMES.....	84
FIGURE 3. FUNNEL PLOT OF THE STANDARD ERROR BY EFFECT SIZE HEDGES'S g FOR ALL RECIDVISM OUTCOMES.....	86
FIGURE 4. FUNNEL PLOT OF THE STANDARD ERROR BY EFFECT SIZE HEDGES'S g FOR QUASI-EXPERIMENTAL OUTCOMES.....	89
FIGURE 5. FUNNEL PLOT OF THE STANDARD ERROR BY EFFECT SIZE HEDGES'S g FOR PEER REVIEWED STUDIES.....	93
FIGURE 6. FUNNEL PLOT OF THE STANDARD ERROR BY EFFECT SIZE HEDGES'S g FOR NON-PEER REVIEWED STUDIES.....	95

PREFACE

Acknowledgements

It is a pleasure to acknowledge those individuals who have contributed to this dissertation, my education and professional development.

Dr. Michael Vaughn has been a strong and supportive advisor to me throughout my doctoral school experience. I feel lucky to have had an advisor who is rigorous in his approach to science and who has taught me these skills. He is down-to-earth, kind, pragmatic and hard working. Other students often commented to me that they wished they could have worked with such an advisor.

Dr. Valire Carr Copeland has been extraordinarily helpful throughout the end stages of the dissertation process. Her feedback and critical reading of the document have been of immense help and I am sincerely grateful.

I also wish to thank Dr. Rachel Fusco and Dr. Jeff Shook. Their suggestions helped my dissertation to meet the rigorous standards required of social work professionals.

The last member of my dissertation committee I would like to thank is Dr. Kevin Kim. Before meeting Dr. Kim learning statistics was challenging. I took one class with him and knew in that instance he was a great teacher. After being his student, I knew that having him as an advisor was a “must.”

Though they are not members of my dissertation committee there are several others I wish to thank. First, is Dr. Christina Newhill. She was my advisor while I was a master’s student in the social work program and was the first person I seriously spoke to about wanting to enter

the doctoral program. She encouraged me to pursue the doctorate and led me into a position in the research field for several years. It was in this job that I had the opportunity to work closely with her. She is a great mentor. I owe her many thanks.

Two other individuals who have been influential throughout my educational process are Dr. Catherine Greeno and Dr. Carol Anderson. They, along with Dr. Newhill, helped me to publish my first journal article related to schizophrenia as a master's level social work student. They have been kind, supportive and encouraging. I feel lucky to have had an opportunity to work closely with them.

I gratefully acknowledge the institutional and financial support of the school of social work throughout my time in their program. Without this support, it may have taken much longer to complete the dissertation. I also wish to thank Mary Pat Elhatab for all of her support as well.

There are many others who have also contributed to my intellectual development. Though space limitations do not allow me to name each one specifically, I want them to know that I am grateful for every drop of extra attention and kindness that they have shown me in my academic pursuits. I remain sincerely in their debt. I will gladly repay this debt when the circumstances allow, either personally or passed on to students whom I hope to teach in the future.

Lastly, I want to express my deep and sincere gratitude and to dedicate this dissertation to my husband. Without his guidance it is unclear whether I would have entered the field of social work. He was the one who first suggested that I go into social work when I was pursuing a career in computer science. His help and his moral and emotional support have truly been a blessing. I am eternally grateful for his love, kindness, patience, and wise, insightful advice. He is a mentor of a lifetime. In many respects, I feel that my PhD is as much his as it is mine. There is no way that I can adequately convey in words how appreciative I am for his help throughout all aspects

of my life. It is an honor and an intellectual, spiritual luxury to be married to the most brilliant man I have ever known.

I. INTRODUCTION

Mental Health Courts (MHCs) are being implemented as a means of diverting the increasingly large number of persons with severe mental illnesses (SMI), who have committed crimes, into court mandated treatment programs instead of the prison system. Studies show that the number of persons with SMI in the prison system has risen from seven percent in 1982 (Steadman, Monahan, & Hartstone, 1982) to between 10 to 19 % of jail populations, 18 to 27 % of state prison populations and 16 to 21 % of federal prison facilities (Lamb, Weinberger, Marsh, & Gross, 2007). Using the latest data available, it is thought that as June 2004, nearly 321,884 of the 2.1 million prisoners suffered from an SMI (Lamb, Weinberger, Marsh, & Gross, 2007). These total numbers have likely increased, given that there are currently an estimated 2.3 million persons in state and federal prisons (West & Sabol, 2008). The most recent study of mental illness in jails found that 14.5 % of men and 31 % of women had an SMI (Steadman, Osher, Clark Robbins, Case, & Samuels, 2009). That number rose to 17.1 % and 34.3%, respectively when Post Traumatic Stress Disorder (PTSD) was included as a diagnostic category. Despite the building of over 150 courts across the country within the past decade, and many more in the planning stages (Thompson, Osher, & Tomansini-Joshi, 2007), the ability of MHCs to effectively stop recidivism has yet to be empirically validated. The evaluative literature is currently scattered with individual MHC studies that are unaggregated and thus are relatively unhelpful in gauging the empirical status of a diverse body of research studies. The purpose of the proposed work is to provide through meta-analysis, new scientifically valid evidence determining the effectiveness of approximately MHCs to reduce recidivism and clinical outcomes. To achieve this goal, a quantitative synthesis of the accumulating MHC literature has been conducted that includes 23 MHC peer-reviewed and non-peer-reviewed studies. The

objective is to provide clear evidence as to whether MHCs are empirically efficacious interventions for a significant public health problem.

A. ADVANTAGES OF META-ANALYSIS FOR MHC EVALUATIONS

The advantages of meta-analysis are numerous. Although they can be labor intensive meta-analytic reviews are typically inexpensive endeavors. A meta-analysis utilizes existing research to reveal new information about a specified body of research (Sutton & Higgins, 2007). New and important discoveries can emerge from a meta-analytic review at a fraction of the cost of a large research project (Hunt, 1997; Stanley, 2001). For new interventions such as MHCs, this is particularly important. The results of a meta-analysis can yield findings with empirical proof, allowing social scientists to utilize empirically supported interventions, without waiting years for a massive trial (Hunt, 1997). According to the Criminal Justice/Mental Health Consensus Project (a nonprofit group run in tandem with the U.S. Justice department) Congress allots approximately five to ten million federal dollars annually to the entire MHC program. A meta-analysis can help law makers determine whether the money is warranted and whether MHC programs should continue to receive funding or if that funding should be moved to or reserved for, more effective treatment approaches. Further, meta-analytic findings can offer policy-makers a summarized version of MHC research, which they may not have the time or ability to evaluate on their own (Hunt, 1997).

Meta-analysis involves the pooling of empirical research studies and subjects them to a statistical analysis thus achieving a greater level of objectivity, confidence and statistical power (Rosenthal, 1991). Simply summarizing the research using traditional research methods such as a narrative or literature review is highly subjective (Latimer, 2001). In addition, traditional research relies on statistical significance as a way to determine treatment effectiveness. If a

treatment is found to be “not significant” by conventional scientific standards, it can then be cast off as “not effective.” Statistical significance as an indicator for effectiveness is problematic. Statistical significance is reliant on sample size. Studies with small sample sizes may yield large effects but relying on statistical significance alone as an indicator of treatment effectiveness may mean that a potentially large effect could go undetected. This is particularly germane to MHCs research because published research trials of MHCs typically have samples sizes under 100. Statistical power analysis reveals that to reliably find even modest treatment effects, samples sizes of up to 1000 would be needed in each research condition (Lipsey, 1990); thus, statistical testing in the case of MHCs may be a poor indicator of their effectiveness (Lipsey, 1992). The advantage of meta-analysis is its ability to provide a measure of change, in standardized units, by producing a common metric known as an effect size (Garret, 1985). The advantage of this standardization is that it permits analysis across studies (Lipsey & Wilson, 1998). This information can then be compiled and statistically analyzed to achieve new, scientifically valid results. Because of these features, meta-analytic reviews are likely to produce accurate, precise and efficient statements about a body of work (Rosenthal, 1991).

B. CRITICISMS OF META-ANALYSIS

A major strength of meta-analysis is that it can synthesize accumulating evidence, generate new evidence, advance knowledge, and do so at a fraction of the cost of larger research studies. Meta-analyses, however, are not without their drawbacks. Some studies do not provide enough detailed information to be included in reviews (Lipsey & Wilson, 1993). Like primary research, meta-analytic reviews can also lack external and internal validity (Hunt, 1997). If studies included in the analysis lack diversity and variety with regard to influential variables, for instance, this could limit the generalizability of the findings. In a related vein, the inclusion of

studies without random assignment can be a threat to internal validity. Since experimental designs are not always feasible (Wilson, Gallagher, MacKenzie, 2000), quasi-experimental designs methods are more often employed within the MHC domain. Finally, meta-analytic reviews are criticized by some as comparing “apples and oranges,” meaning that the data being combined are too heterogeneous and thus produce meaningless results (Sharpe, 1997). Current meta-analytic techniques allow for certain statistical adjustments.

C. PURPOSE OF STUDY

This dissertation was designed to be a comprehensive account of MHCs, their history, why they were developed, and to come to a conclusion about whether or not they are empirically effective interventions using meta-analytic techniques. Chapter two begins with a review of both current and historical data and theories related to why there are many individuals with a severe mental illness who are incarcerated. It explores how incarcerating the mentally ill was a historical practice that seems to have come full circle. The second half of the chapter is an in-depth review of MHCs. It focuses on what the courts are, why they are needed how they operate, how they began, and how they have evolved over time. Also included is an analysis of the state of the MHC literature base as well as an examination of the possible problems that may be associated with the development of these courts. Chapter three is a blue print of how the study was conducted. As part of the gathering process for the meta-analysis, MHC program managers across the United States were contacted to ascertain unpublished data of their courts. This chapter presents information regarding how those individuals were identified and, how many responded, and describes the nature of the data they provided. Chapter three also outlines the process of locating studies within peer-reviewed research, describes how they were chosen, and which were included, and details the plan utilized for the statistical analysis of the data. Chapter

four describes the results of the study. Also presented in this chapter are funnel plots that offer a visual view of the analyses. Chapter five is a synthesis of the study results placed in the context of the MHC literature base and related neurological, psychological and criminal justice research. Specific emphasis is placed on the findings in relation to race and gender. The chapter concludes with a discussion of the limitations of this study, suggestions for subsequent research, and implications for social workers, mental health workers and criminal justice professionals.

II. LITERATURE REVIEW

A. BACKGROUND AND SIGNIFICANCE

Incarcerating individuals with a mental illness is not a new problem. During the nineteenth century, it was not uncommon for the mentally ill to be housed with the paupers and criminals. There were few public hospitals. Since local towns and states were responsible for the care of the mentally ill, it was cheaper to confine them in jails (Deutsch, 1946). For instance, in 1820 New York, it cost \$0.50 cents to \$1.00 per day to hold an individual in jail. To house those same individuals in the Bloomingdale Asylum would cost over \$2.00 per day (Torrey, 1992). The practice of jailing the mentally ill upset many Americans. One in particular was Yale graduate and Congregationalist minister, Reverend Louis Dwight. In 1825, Reverend Dwight organized the Boston Prison Discipline Society. The Prison Discipline Society advocated for hospitals for the mentally ill prisoners and in 1827, was successful in persuading the State General Court of Massachusetts to investigate the status of the mentally ill in prisons (Deutsch, 1946). Upon completion of the investigation the committee concluded that “the situation of these wretched beings calls very loudly for some redress...Less attention is paid to their cleanliness and comfort than to the wild beasts in their cages, which are kept for show” (Torrey, 1992, p.10). The Society recommended that all of the individuals with a mental illness be moved to the Massachusetts General Hospital. They also made confinement of the mentally ill in jails in the state of Massachusetts, illegal.

As a result of transferring the mentally ill to the general hospital, a need grew for space to confine them. To compensate for the overcrowding, the State Lunatic Asylum at Worcester was opened in 1833. Over the next 10 years, similar public hospitals opened to house what were initially jail transfers. By 1840, there were 14 hospitals in the United States with a total capacity

to hold 2500 patients (Marshal, 1937). The 1840 census revealed that 17,434 out of 23,191,876 (1 to 977 ratio), were considered “insane” (Marshal, 1937). Of those 17,434, 5,172 were supported by public charges and the rest were taken care of privately by families (Deutsch, 1946).

In 1841, Dorothea Dix took over Reverend Dwight’s fight and began her campaign to release the mentally ill from jails and prisons. Dix was a school teacher and later a nurse, from New England. She was also considered a pioneer in the profession of social work as well as a humanitarian and social reformer (Marshal, 1937). Historical records show that she also had a mother with mental illness.

While teaching Sunday school at East Cambridge Jail near Boston, Dix became increasingly aware that those with a mental illness were housed along with prisoners. Upon further inspection of the institutions she found that the inmates lived in horrific conditions. When she inquired about the conditions of the jails, she discovered that the “insane” prisoners had no heat. The jailer told her that “the insane need no heat” (Marshall, 1937. p. 11). She was especially concerned about the larger prison systems that often made prisoners work all day and then denied them the right to bathe (Marshall, 1937). There were also reports of beatings of the inmates by prison guards. Prompted by the atrocious conditions to which inmates were subjected to Dix began to document her findings. By 1847 Dix had visited 300 jails, 18 prisons and 500 almshouses. She reported her findings to Massachusetts and New Jersey state officials. She urged the building of public hospitals for the mentally ill to replace their current confinement in jails and prisons.

While touring the jails, Dix came to believe that it was more important to focus on the reformation of the individual. She disagreed with the prevailing notion that social revenge

should serve as the motivating factor in prison authority. Instead of menial tasks and discipline, she recommended the need for moral, religious and general instruction in prisons. She advocated that moral and spiritual restoration should be the function of prison discipline. She believed that a “steady, firm and kind government of prisoners, is the truest humanity and the best exercise of duty” (Marshall, 1937, p.111). By 1845, based on her examination of institutional conditions and the need for separation between criminals and the mentally ill, Dix proposed the idea of federal aid for hospitals. She tried to convince President Pierce to grant her 5,000,000 acres of land to build farms for the mentally ill. President Pierce deemed Dix’s land bill proposal unconstitutional and subsequently vetoed it (Marshall, 1937).

Despite the setback Dix persevered. With her help, by 1880, 75 public psychiatric hospitals were built in the United States (Torrey et al., 1992). Many of the mentally ill were moved out of penal institutions into hospitals. The first complete mental illness census was performed in 1880. The census, with direct input from psychiatrists, almshouses, local institutions such as jails, prisons, and even families housing the mentally ill, documented approximately 91,959 “insane persons.” Approximately 41,083 were living at home and 9,302 were housed in almshouses. Only 397 mentally ill were being held in jails (0.4% of all “insane persons”). The total number of prisoners in all jails and prisons was 58,609, and in 1880, the mentally ill comprised only 0.7% of the population of jails and prisoners (Torrey, 1992). For the next 150 years hospitals remained the primary places of treatment for the mentally ill.

During the last decade, however, there has been a gradual decline in the number of psychiatric hospitals available and a steady increase in the number of incarceration facilities being built. One survey showed that within the last 10 years, 40 state hospitals have closed and over 400 new correctional facilities have been built (The Sentencing Project, 2002; Woodward,

2004). Almost two centuries after the work of Dix and Dwight, it seems as if the nineteenth century problem they fought to eradicate has come full circle.

The trend of incarcerating those with an SMI began to reemerge as early as the 1970's. In 1974 and 1975, Swank and Diner (1976) evaluated 545 inmates in the Denver County Jail and noted an increase in the number of psychotic individuals, many former state hospital patients. Another 1975 study conducted by Bolton and Associates (1976), of five California county jails, reported that almost seven percent of inmates had an SMI. A few years later in 1982, Steadman and colleagues reported that mentally ill offenders accounted for six percent of the prison population.

Some researchers also believe that the mentally ill may be arrested at disproportional rates compared to the general population. In 1984, Linda Teplin observed the Chicago police over a 14-month period. She found that individuals displaying psychiatric symptoms had a higher probability of being arrested than those not showing signs of mental illness. Using the Diagnostic Interview Schedule (DIS), Linda Teplin's 1990 study analyzed data of 728 jail admissions and found that approximately six percent of their sample met diagnostic criteria for schizophrenia, mania, or depression (diagnoses generally considered SMI). Subsequent investigations by Teplin and colleagues in Cook County, Illinois have continued to document the epidemiology of mental health and substance use disorders in correctional settings for adolescents and adults.

The rise of increased incarceration among those with SMI was further elucidated by the 1992 National Alliance of the Mentally Ill (NAMI) and Public Citizen's Health Research Group report entitled, *Criminalizing the Seriously Mentally Ill: The Abuse of Jails as Mental Hospitals* (See Torrey, et al., 1992). The report discussed the high rates of those with SMI coming into

contact with the criminal justice system. The report revealed that many people with an SMI were arrested for minor crimes related to their untreated mental illnesses. The 1992 report also explained that the minor crimes committed by many of the SMI were predicated on the need for survival (e.g. shoplifting, stealing food) since many were homeless, had virtually nowhere to go, and often had nothing substantial to eat. As a result, many homeless individuals with a mental illness wound up cycling in and out jail and prisons, often charged with petty crimes.

A 2007 study showed a similar pattern regarding the charges of mentally ill inmates. Lamb and colleagues (2007) conducted a retrospective study of 104 mentally ill inmates, a majority diagnosed with an SMI. They found that many of the offenders had a lengthy history of non-serious offenses. They also found that 92 % of the inmates with an SMI had histories of medication noncompliance. After reviewing electronic criminal histories, Lamb and colleagues posited that many of the inmates' past offenses were committed at a time when they were not receiving adequate treatment and that this in turn led to an inappropriate reaction to a stressful situation. Lamb et al. believe these data support the "criminalization" argument suggesting that the failure of treatment systems to engage those with SMI results in their increased involvement with the criminal justice system (Fisher, et al., 2006). To date, this argument has not been proven or agreed upon by those who study the increase in criminal justice involvement among those with an SMI.

B. POTENTIAL CAUSES AND THEORIES RELATED TO WHY MANY INDIVIDUALS WITH SERIOUS MENTAL ILLNESS ARE INCARCERATED

1. Deinstitutionalization

Most scholars agree that deinstitutionalization policies of the 1950's and 1960's marked the origin of the backward shift towards imprisoning people with SMI. The federal efforts to

close hospitals during that era were influenced by a multitude of events including the introduction of antipsychotic medications, newly proposed theories about the causes of mental illness, the development of housing programs for those with disabilities, the desire to decrease expenditures of state governments, overcrowding of state hospitals, cryptic reports about abuse in state mental institutions and the replacement of hospitals with community mental health centers (CMHCs) (Mechanic, 1999; Mechanic & Rochefort, 1992; Torrey, 1988). These events helped spur the release of thousands of mentally ill individuals into the community.

Deinstitutionalization did depopulate many of the state hospitals but the massive wave of patients who moved to communities without stable places to live was unprecedented and unexpected (Torrey, 1988). While patients were leaving state hospitals in large numbers and trying to find places to live, the federal and state government began to alter their housing policies (Mechanic & Rochefort, 1992; Torrey, 1988;). The alterations made low income housing, where many of the mentally ill lived, no longer a profitable investment (Torrey, 1988). The resulting lack of housing created an influx of homeless individuals (Mechanic, 1999). As a result, many state hospital patients simply had nowhere to go (Torrey, 1988).

CMHCs were built with the intention to treat SMI discharged patients from state hospitals but most offered little aftercare and assistance to this population. Rather, many CMHCs preferred to treat those with less serious psychiatric disorders (Mechanic & Rochefort, 1992; Grob, 1994; Mechanic, 1999). National Institute of Mental Health (NIMH) data showed that, from 1968 to 1978, only 3.6 to six percent of those treated at CMHCs were patients from state mental hospitals (Torrey, 1988). By 1983, only 2.6 percent of CMHC clientele were former state hospital patients (Torrey, 1988). Most of the treatment activities provided at CMHCs were psychotherapy services not conducive to patients with SMI (Chu & Trotter, 1974; Grob, 1994).

The failure to build enough CMHCs and to properly fund aftercare services, as well as the unwillingness to treat individuals with SMI, helped to generate a disjointed United States public mental health system that exists to this day.

A new trend was recently documented in a 2009 survey of state psychiatric hospital use from 2002 to 2005. Manderschied, Atay, & Crider (2009) surveyed 11 states that showed increases in the number of state psychiatric hospital residents between the aforementioned years. Instead of a decrease in the number of individuals housed in state psychiatric facilities, the researchers found an increase in the number of admissions between 2002 and 2005 (156,000 to 189,000, respectively). They found an increase in admissions despite there being a decrease in the number of state psychiatric hospitals available for treatment (220 to 204) and bed capacity (58,000 to 52,000) during the same three year time frame. They noted that with regard to admissions, this was the first increase in state psychiatric hospitals since 1971.

These findings potentially show a reversal of trends that have characterized the last four decades. Paradoxically, Manderschied et al. partly attribute the increase of patients entering state psychiatric hospitals to the rise in the number of severely mentally ill individuals involved in the criminal justice system. They cite a 2004 National Association of State Mental Health Program Directors Research Institute (NRI) report on forensic state hospitals showing that in some instances, nearly half of the state psychiatric hospital beds are occupied by forensically linked mentally ill individuals. The authors also noted that there have been state hospitals recently built solely for the purpose of housing forensically involved individuals with SMI. Manderschied et al. believe that a number of other factors have also contributed to the increase in the number of individuals currently housed in state psychiatric hospitals, including a lack of community mental health services as well as the on-going problem of individuals with mental illness who receive no

services at all. Because this is the first study since 1971 to document an increase in state psychiatric hospital use, more research is needed to determine whether it is a continuing trend and if so, why exactly individuals involved in the criminal justice system are being diverted to state psychiatric hospitals more than in the past?

2. Health Policy Influences

Authors David Mechanic and David Rochefort (1992) (as well as Mechanic and Grob (2006)) explain that social welfare programs for the poor and aged, a subtle but significant social force which is often overlooked within the discussion of deinstitutionalization, helped facilitate the depopulation of state mental hospitals. Changes to two social programs in particular, Medicaid and Medicare, contributed to the state hospital population decrease by creating cost saving incentives for states (Grob, 1994; Mechanic & Rochefort, 1992). Medicaid (in particular) and Medicare modified their policies and allowed states to send state mental hospital patients to nursing homes, a move that shifted state costs to the federal government (Grob, 1994; Mechanic & Rochefort, 1992). After 1964, Kiesler and Sibulkin (1987) found that at least half of the elderly patients discharged from mental health hospitals went to nursing homes. A study by William Gronfein (1985) examined the inpatient changes of state and local mental health hospitals from 1973 to 1976 for each state. After controlling for the size of the state population, Gronfein found that Medicaid payments for nursing homes were highly correlated with public mental hospital decreases between 1970 and 1975. The findings by Kiesler and Sibulkin and by Gronfein (1985) support the assertion by Mechanic and Rochefort and Mechanic and Grob that funding incentives, at least in the case of Medicaid, assisted in reducing the number of patients in mental hospitals.

Another significant contributor to the escalating numbers of incarcerated SMI may be strict inpatient involuntary hospitalization criteria (Lurigio, 2000). Until the 1960s, civil commitment laws operated from a strictly medical model. Upon the recommendation of a physician, an individual could be hospitalized and held against their will for uncertain amounts of time (Petrila, Ridgely, & Borum, 2003). By early 1970, patients' attorneys, mainly from the American Civil Liberties Union (ACLU), were successful in changing inpatient commitment laws at the federal level, citing that the laws violated an individual's constitutional rights (Petrila, Ridgely, & Borum, 2003). The hallmark case that changed the way individuals were involuntarily hospitalized was *O'Connor v. Donaldson* in 1975. In this case, the Supreme Court ruled that a person could not be held in a mental health facility against their will unless they were found to be both mentally ill and dangerous. The court stated that "the state cannot constitutionally confine in a mental institution, a nondangerous individual who is capable of surviving safely in freedom by himself or willing or responsible family members or friends" (*O'Connor v. Donaldson*, p. 4). From that point on, having severe illness symptoms alone was not cause to hospitalize an individual; the person had to be eminently dangerous to him or herself or to others, as well as severely mentally ill, to be involuntarily confined in a mental institution.

With guidance from the *O'Connor v. Donaldson* Supreme Court ruling, many states began revising their civil commitment laws and many ultimately adopted very strict standards for inpatient hospitalization. At present, most state mental health codes require psychiatric hospitals to show evidence that an individual is highly likely to hurt him or herself or others, or is so gravely disabled by illness that self care is not possible (Lamb & Weinberger, 2005; Lurigio, 2000). In many cases, these strict inpatient commitment laws make it exceedingly difficult to effectively treat SMI individuals before a crisis occurs. Thus, many individuals who do not meet

the very stringent admission criteria are allowed to remain untreated in the community even if they continue to experience very seriously debilitating illness symptoms (Quanbeck, Frye, & Altshuler, 2003). In many situations, an individual has to wait until something tragic occurs or is on the verge of occurring before he or she would be considered eligible for inpatient psychiatric hospitalization admittance.

In addition, as noted by Quanbeck and colleagues, current civil commitment laws do not account for individuals who lack insight into their illness. It has been well established within the psychological literature that at least half of the individuals with SMI's, such as schizophrenia, are unaware they have a mental illness (Amador, 2001). The law assumes even when an individual is experiencing severe psychiatric symptoms that may hinder their ability to be logical or rational, or they have a history of not recognizing their illness, the individual has the full capacity to act in their own interest and to decide whether they want to accept treatment (Quanbeck, Frye, & Altshuler, 2003). Abramson's early 1970s study showed that after a 1969 civil commitment law was passed in California that increased the strictness of inpatient hospitalization admission, the rate at which mentally ill individuals were entering the criminal justice system doubled (Abramson, 1972). This study led Abramson to contend that individuals with mental illness were being "criminalized."

At present, scholar's debate whether individuals with SMI are being "criminalized" but recent studies may support Abramson's assertion. A 1995 study by Soloman and Draine found that mental health workers reincarcerated their clients on technical violation charges as a method to access mental health services. Soloman and Draine's 1995 study indicated that assessing mental health treatment through the criminal justice system was a common method used for psychiatric probationers and parolees who were decompensating but refused to be

voluntarily admitted to a hospital and who did not meet the criteria for involuntary commitment. The authors noted that case managers found it easier to access mental health treatment from the jail facility than to attempt involuntary commitment to a mental institution. Similar results were found in a 2002 study by Soloman, Draine, and Marcus. They again found that clients of a psychiatric probation and parole service were often jailed for technical violations or for a new charge as a way to assess needed mental health treatment. In the later study, the authors explained that the mental health system within their particular study community had very strict commitment criteria. Soloman et al. speculated that police as well as case managers utilized the jail psychiatric facilities as a preventative measure: to prevent illness decompensation or possible danger to others within the community. Thus, the jail became a more reliable source of psychiatric care than the local mental health system because of the strict involuntary commitment laws. Following this to its logical extreme, at least among the participants in the aforementioned studies, this meant that a participant essentially had to commit a crime to access treatment. With the exception of a few states, namely Utah, Kansas, California and Iowa (Meyer & Weaver, 2005) that have reformed civil commitment laws that focus on treating individuals before crisis occurs, most states continue to have stringent inpatient laws that make it exceedingly difficult to receive inpatient psychiatric care.

3. Changes in Drug Laws

Also thought to contribute to the rise of SMI in the prison system were the sweeping changes to the 1980s and 1990s drug laws associated with the “war on drugs” (Austin, Marino, Carroll, McCall, & Richards, 2001) and an increasingly punitive approach to dealing with people outside “societal norms” (The Sentencing Project, 2002). Strict laws made it easier to arrest and convict individuals for possessing small quantities of drugs, leading to a significant

increase in arrests across many segments of American society (Mauer & King, 2007). Those with an SMI were thought to be directly affected by the new drug laws, as were other vulnerable populations. In 1980, drug offenses accounted for six percent of the state prison population and by 1998 that number rose to 21 % (Austin, et al., 2001). The latest statistics show that the number of drug offenders in jails and prisons has risen 1100 % since 1980 (Mauer & King, 2007). Harsher sentences were also given for drug crimes. In 1985, the average sentence was 13 months and by 1994, it was approximately 30 months (Austin, et al, 2001).

As for mentally ill offenders, studies show that they have a more difficult time getting released and are often kept for longer than necessary periods, sometimes held without formal charges (Torrey et al., 1992). Bureau of Justice data show that individuals with a mental illness serve on average five months longer than those not mentally ill (James & Glaze, 2006). Other studies have shown they have greater difficulty being granted parole (Feder, 1994; Lurigio, 2001) and serve a longer portion of their sentences when compared to non-mentally ill inmates (Feder, 1994). Many believe that changes to the federal and state drug laws, in combination with other micro and macro level factors, have inevitably led to imprisonment of many more individuals with SMI (Austin, et al, 2001; The Sentencing Project, 2002).

4. Criminological Theories/ Frameworks Related to the Increase in Number of Mentally Ill Inmates

Within the literature there exists a debate about whether individuals with SMI are disproportionately involved in the criminal justice system because they are committing and being arrested for offenses caused by their untreated illness symptoms. This is often referred to as the “criminalization hypothesis.” Abramson (1972) more than 30 years ago was the first to discuss

“criminalization” as a process in which individuals with SMI seem to be routed through the criminal justice system instead of the mental health system. Since that time there have been some data to support the criminalization hypothesis, most notably Linda Teplin's 1984 Chicago study in which she found that individuals with a mental illness were arrested at a higher rate than non-mentally disordered individuals. The study found that the rate of arrests for individuals deemed mentally ill was 46.7 % compared to 27.9 % for individuals not appearing to have a mental illness. Teplin concluded from her study that individuals who appeared to be mentally ill had a higher probability of being arrested than those who did not. “Clearly the way we treat our mentally ill is criminal,” she asserted (p.798.). Engel and Silver (2001) note that Teplin’s assertion was subsequently widely cited by researchers and policymakers as fact. Engel and Silver also noted that the assertion has been used to explain why a disproportionate number of individuals with mental illness residing in U.S. jails and prisons as well as to justify the need for partnerships between mental health workers and law enforcement.

Not everyone agrees with the “criminalization” hypothesis. Engel and Silver in their 2001 study of police behavior sought to test the robustness of Teplin's 1984 assertion that the police disproportionately arrest mentally disordered suspects. They observed police behavior in two locations and two data sets; one date set from 1977 and the other from 1996-1997. Unlike Teplin’s 1984 study, Engel and Silver did not find evidence that the police arrested mentally disordered suspects more often than non-mentally disordered suspects. Another set of researchers, Junginger, Claypoole, Laygo, and Crisanti (2006) tested the criminalization hypothesis as well to see what affect substance abuse had on the increase in incarceration of SMI. In their study of 113 recently arrested individuals with SMI from a Hawaii jail diversion program, Junginger et al. found that at least 23 % of participants had been arrested for offenses

directly or indirectly related to substance abuse and not necessarily to illness. According to the authors, this evidence disconfirms the criminalization hypothesis. Instead, Junginger et al. believe that their finding supports the contention of Draine and colleagues (2002) who believe that individuals with SMIs are burdened with other, more powerful risk factors, such as poverty and homelessness, that contribute to their propensity to commit crimes.

Fisher, Silver, and Wolff (2006) extracted three theories from the criminal justice arena they believe may broaden the understanding of the risk factors associated with arrest among mentally ill individuals involved in the criminal justice system. The three theories include (1) the life course/developmental perspective, (2) the local life circumstances, and (3) the routine activities perspective, all of which offer explanations they believe are excluded from the criminalization hypothesis. The life course/developmental perspective posits that an individual's life is marked by particular events that promote or inhibit his or her capacity to offend.

Gottredson and Hirschi, Fisher et al., note, are the major contributors to this perspective, and believe that whether or not an individual will commit a crime is determined early on in life as a result of poor parenting (Fisher et al., 2006). The idea is that children raised in these environments are believed to have low self-control, a trait associated with a greater risk of offending. Thus, children exposed to poor parenting may be more likely to engage in criminal offending later in life than children who had more consistent parenting.

With specific regard to life course development, Fisher et al., speculate that the onset of SMI can be a factor in whether an individual may be more likely to offend. They discuss the idea that the onset of mental illness, framing it as a possible “turning point” (p.551) in one's life, may be associated with an individual's propensity to “begin, persist in or desist from offending” (p.551). The authors, however, did not elaborate on how exactly the onset of an SMI would

translate into an increased risk of offending. They also cite evidence that having an SMI may decrease the likelihood of having a job and being married. They argue that it is possible that having a job or being married serves as an important type of social control. That is, if individuals with an SMI are less likely to marry or be employed, then the possibility exists that they may be more likely to engage in criminal offending. Fisher et al. believe that these aforementioned factors may place individuals with an SMI at greater risk for engaging in unlawful behavior.

The second theory Fisher et al. believe could contribute a more thorough understanding of risk factors for arrest among individuals with mental illness is the local life circumstances perspective. The premise is that while propensity towards engaging in unlawful behavior may be consistent for most of an individual's life, there may be periods in which their behavior is inconsistent due to differential life circumstances. For instance, they cite that marriage or employment may be a particular point in an individual's life that may lead to a change in offending patterns. For individuals with SMI in particular, life circumstances that may affect offending patterns may include hospitalization, a reemergence of a psychiatric disorder, and treatment compliance or noncompliance. Logically, if a person is hospitalized he or she is less likely to commit a crime. This was not mentioned by the authors but the opposite may also be true: if an individual is experiencing an illness relapse or is noncompliant with his or her medication, he or she may be more likely to offend if he or she is negatively influenced by untreated symptoms. Fisher et al. also discussed the idea of the decline in economic status typical among individuals with schizophrenia in particular. Individuals with schizophrenia tend to live in disadvantaged environments. Fisher et al. explain that if they are residing in disadvantaged neighborhoods, there may be an increased likelihood that they would interact with individuals using illegal drugs and therefore, engage in criminal offending. Their lack of economic stability

may also contribute to homelessness. Among individuals with SMI, the authors cite homelessness as another life circumstance that may lead to an increase in offending behavior. Studies have shown that in the year before their arrest mentally ill inmates are more likely, and in some cases twice as likely, (James & Glaze, 2006) to be homeless as non-mentally ill inmates (Ditton, 1999).

The final criminological-based framework presented by Fisher et al. is the routine activities/lifestyles perspective. This framework is similar to the local life circumstances perspective in that it focuses on how an individual's environment can negatively influence behavior. It is also similar to the ecological systems perspective utilized in the social work profession, which says that factors within each system, micro, mezzo or macro, are interactional and interrelated (Corcoran & Nichols-Casebolt, 2004). The routine activities/lifestyles perspective is based on understanding whom individuals interact with and essentially exploring how they spend their time. The authors argue that many individuals with SMI lead relatively inactive lives. Less activity means less social control. If individuals have more free time and are in less socially controlled environments, they may be more likely to engage in unlawful behavior.

5. Substance Abuse

Some research has shown that the use of illegal substances by those with an SMI may be partially responsible for the increase in criminal justice involvement. A recent large-scale study of the relationship between suffering from an SMI and being arrested, among 73, 570 non-incarcerated adults found a robust, mediating effect of substance use, similar to that found in other studies. Within their study, Swartz and Lurigio (2007) found that individuals with a SMI were twice as likely to use illegal drugs and two to three times more likely to abuse or be

addicted to drugs or alcohol. They also found that when an individual with an SMI used drugs and alcohol, he or she was more likely to be arrested for a property, drug or violent offense. Participants who had an SMI and who did not use illegal drugs or alcohol were not at an increased risk for arrest. Swartz and Lurigio (2007) believe that treating co-occurring psychiatric and substance abuse disorders simultaneously could substantially reduce the number of individuals with SMI in the criminal justice system.

A longitudinal study published in 2004 by Wallace, Mollen and Burgess delves more deeply into this issue. They specifically looked at five waves of data derived from individuals with schizophrenia over a 25 year period beginning in 1975. The authors were interested in analyzing whether substance use disorders singularly explained the uptick in higher criminal convictions among schizophrenia patients. They found that criminal convictions among schizophrenia patients rose 10.2 % between 1975 and 1995. Substance use related offenses during that same period increased eight percent. Even though both criminal convictions and substance use related offenses rose over the period of study, similar rates of conviction and substance use were found among comparison subjects. Wallace et al. interpret this finding to mean that "substance abuse is only part of the story" (p. 725) and not the sole explanation for the higher rates of offending. The authors of the study believe that other factors may have contributed to increased rates of incarceration among individuals with schizophrenia such as inadequate social and financial support, the use of jails and prisons as providers of mental health care, being caught up in the overall increased use of imprisonment as a form of social control, or that crime and schizophrenia "arise from common roots... genetic, social, or developmental" (p. 726).

Relatedly, a 2009 longitudinal study of violence and mental illness sought to explain the link between SMI and violence risk. Elbogen and Johnson presented data on over 34, 500 subjects from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). They wanted to know whether having an SMI and using illegal substances predicted future violence. They found that individuals with an SMI and co-occurring substance abuse had a higher incidence of violence than people with a substance abuse disorder alone. In addition, they found that an individual with an SMI but without a substance abuse history or a history of violence had the same chances of being violent over the next three years as did any other person in the general population. Having an SMI did increase the risk for violence within their sample but Elbogen and Johnson did not find that it was the strongest predictor of future violence. Instead, environmental stressors, both historical and current, were the strongest predictors of future violence. In fact, current work status was associated with later violence. This finding suggested to the authors that interventions that focus on vocational training or on otherwise assisting individuals into employment may help reduce violence risk. Elbogen and Johnson believe in the concept similar to that of Wallace and colleagues, which is that complex environmental and situational factors are partly to blame for the increase in violence among severely mentally ill individuals. The findings by Wallace et al. and Elbogen and Johnson also support the criminologically-based theories asserted by Fisher et al. (2006) that seek to explain the increase in criminal involvement among individuals with SMI.

6. Conduct Disorder and Schizophrenia

It is widely known that there is an overrepresentation of people with SMI involved in the criminal justice system. The reasons for the rise stem back to events that began in the 1950s and include complex multiple macro and micro level factors such as lack of access to treatments,

housing issues, social welfare policies, strict inpatient and drug laws, substance abuse, poverty and homelessness, among others. Emerging research shows there may be a link between childhood antisocial behaviors and violence among subgroups of people with schizophrenia (Swanson, et al, 2008). Relatedly, studies have documented that having conduct disorder before the age of 15 is a precursor to schizophrenia (Hodgins, Cree, Alderton, Mak, 2007). A longitudinal study published in 2000 indicated that conduct disorder in childhood was one of the most important predictors of violence among individuals with a schizophrenia spectrum disorder (Arsenault, Moffitt, Caspi, Taylor & Silver, 2000). More recent research has found similar results. For instance, Hodgins, et al., (2007) studied a group of hospitalized individuals in the United Kingdom with serious mental illnesses and found that 42 % of men and 22 % of women had a history of conduct disorder. Among those who had a conduct disorder before the age of 15 this subgroup was more likely to engage in assaults and were likely to have been convicted of nonviolent and violent crimes. This is consistent with previous research done by the same set of authors published in 2005 which, after controlling for alcohol and illicit drug use, found that individuals who had a conduct disorder symptom present prior to the age of 15 had an increased risk of assault and criminal convictions through adulthood. These antisocial behaviors could lead to a greater likelihood of being incarcerated. These results, however, are specific to a subgroup of individuals with schizophrenia and do not seem to extend to the two other general SMI diagnostic categories: depression and bipolar disorder. Other research has shown that individuals with depression may be less likely to commit a violent act. The same has been found for individuals diagnosed with bipolar disorder (Brennan, Mednick, & Hodgins, 2000), except in the case of those who have co-occurring alcohol abuse disorders. This may mean that only a subgroup of specific individuals with SMI, namely those with a history of childhood antisocial

behaviors, are at increased risk of criminality and subsequent incarceration as adults. This knowledge and other emerging criminological theories (as discussed above) may greatly alter the ways in which MHCs intervene in the lives of persons with SMI.

7. Summary

The theories and ideas in the aforementioned section are part of the ongoing discussion and debate about how individuals with SMI have become increasingly present in the criminal justice system. Scholars and scientists may never come to a consensus about how or why the problem has reemerged. Arguably, knowing why the problem occurred may not be as helpful or important as finding ways to correct it and work towards removing individuals from of the criminal justice system and into effective forms of mental health treatment. The following chapter reviews the literature and policy related information associated with mental health courts.

C. MENTAL HEALTH COURT LITERATURE REVIEW

1. Definition of a Mental Health Court

MHCs are forensic courts that manage the cases of those with mental illness charged with committing misdemeanors and/or felony crimes (Redlich, 2005). The courts are typically comprised of specially trained individuals including judges, attorneys, and staffers with knowledge of mental illnesses who create treatment plans for defendants. Similar to drug courts, MHCs can be used either at pre-sentencing or post-sentencing to divert incarceration (Tyuse & Linhorst, 2005). By participating in an MHC program individuals may avoid incarceration. The MHC has the option to offer offenders probation on the condition of treatment. This option, if chosen by the offender, would include outpatient services such as mental health treatment and/or substance abuse treatment and case management (including social services, housing, vocational

training, life skills training, education, job placement, health care, and relapse prevention) (H.R. Rep. No. 108-732 at 8 (2004)). It is thought that if individuals are diverted to treatment instead of jail, their involvement will improve their overall mental health condition and subsequently decrease recidivism rates.

Sanctions are utilized for offenders not adhering to an agreed upon treatment plan. Common sanctions include reprimands from the judge and, an increase in the number of court-ordered appearances in front of the judge and jail (Redlich, 2005). If mental health and/or substance abuse treatment is successfully completed, charges may be reduced or dismissed (Bazelon Center for Mental Health Law, 2003). Thus, MHCs represent a collaborative approach between the mental health system and the criminal justice system. Fundamentally, MHCs seek to divert those with a mental illness into treatment instead of punishment.

A court is “officially” considered an MHC if general characteristics are in place that include the following: a specialized docket for individuals with mental illness who have committed non-violent offences (and some courts are now accepting those who commit felonies; see Redlich, 2005; Steadman, Davidson, & Brown, 2001); a collaborative team comprising judge and prosecuting and defense attorneys; appropriate mental health staff with a system in place for continuous treatment compliance monitoring (Redlich, 2005; Steadman et al., 2001); positive feedback for treatment compliance and punishment for noncompliance (Redlich, 2005); and voluntariness (Bazelon Center for Mental Health Law, 2003; Redlich, 2005). Outside of these characteristics there is widespread variability among MHCs, making true evaluation a complicated task.

Wolff and Pogorzelski (2005) give a more detailed explanation of why MHC evaluation is a difficult task. They explain that the courts are rooted in deeply complex social and political

systems. MHCs involve players from both the mental health and criminal justice arenas, and because these systems embrace fundamentally different philosophies (treatment versus punishment), disagreements between parties may arise. Also contributing to variation between MHCs are the number of community resources available, the availability of and access to mental health and substance abuse services, public opinion, and the broader criminal court systems. All these systems or social forces can affect or influence the operation and implementation of an MHC and can help explain the variations between courts across the country (Wolff & Pogorzelski, 2005).

Relatedly, some communities in southeastern Pennsylvania and Ohio have adopted the Sequential Intercept Model. The Sequential Intercept Model provides a five-point conceptual framework that can be used by communities when interfacing with mental health and criminal justice systems (Munetz & Griffin, 2006). Munetz and Griffin explain that the model was specifically designed to reduce the number of mentally ill individuals from reentering the criminal justice system. The five points of “interception” include (1) law enforcement and emergency services; (2) jails and courts (MHCs included); (3) jail and prison reentry; (4) community corrections and lastly; (5) community support. Each point of interception, Munetz and Griffin explain, is designed to highlight actionable interventions that may prevent individuals from returning to the criminal justice system, and to link them to community treatments. Early reports show such interventions to be helpful, but at this time only a small number of communities have adopted this model. Future research is needed to explore whether such a model can assist MHCs in ensuring that their clients do not recidivate and are connected to appropriate treatment services.

2. Why Mental Health Courts are Needed

High rates of incarceration among individuals with SMI are a serious concern for several important reasons. One reason is that evidence suggests housing individuals with SMI in jails and prison is costly and most facilities are unprepared to properly treat this population (Vera Institute of Justice, 2006). In 2004, Miami-Dade County officials in Florida reported they spent \$4 million a year in over time to manage mentally ill prisoners for 15 minute observations (James, 2006). Broward County, Florida officials indicated that in 1996 housing a mentally ill inmate cost \$60 per day versus \$78 for non-mentally ill inmates (James, 2006). Those costs have likely increased since that time. Legislators in California estimate that to build mental health units within their existing prison system to accommodate the growing number of mentally ill inmates would cost an estimated \$1.1 million per inmate (Abramsky, 2008). In another instance, Lorain County, Ohio, reportedly spends 40 % of its \$1.2 million dollar health-care budget on the jailed mentally ill held in a 22-bed unit (Puentes, 2006). Psychiatric drug costs for Ohio's mentally ill inmates are estimated at \$1,500 to \$2,000 per month per inmate (Puentes, 2006). Law enforcement, judges, lawyers and other criminal justice system personnel devote excessive amounts of time to incarcerating those with SMI—time, energy and resources perhaps better spent on the tracking of more serious offenders and crimes (Bazelon Center for Mental Health Law, 2003).

Others have expressed concerns about the correctional officers who work with the mentally ill within the criminal justice setting (Soderstrom, 2007). Generally correctional officers are trained to maintain an authoritative relationship with inmates unlike mental health officials, who attempt to negotiate compliance (Soderstorm, 2007). The differing ideologies may present a clash between correctional officers and mental health staff. In addition, within the local jail system, only a little over half provide alcohol or alcohol related services (62 and 55 %,

respectively) and fewer than half provide mental health services such as counseling and psychiatric evaluation (Solomon, Osborne, LoBuglio, Mellow, & Mukaua, 2008). Even when mental health services are offered within the criminal justice system few receive them. A 2006 study of U.S. jails found that only 18 % of inmates who described having mental health problems received treatment after admission, and of that subgroup the majority were offered medication only (James & Glaze, 2006). That same study showed that even among those engaged in treatment within the jail system only 15 % reported receiving their prescribed medication and seven percent received professional counseling or therapy.

The consequences of delayed care are particularly noxious for an inmate with SMI. A 2003 Human Rights Watch report described U.S. prison services as “woefully deficient.” They found that seriously mentally ill prisoners were often neglected, thought to be “malingering” and treated as if they were “disciplinary problems” (p.1). The National Prison Rape Elimination Commission Report published in June 2009 found that having an SMI increased the risk of being sexually abused while incarcerated (National Prison Rape Elimination Commission, 2009). Detention conditions are also known to exacerbate illness symptoms or cause psychotic episodes. Recent prison reports show that inmates suffering from SMIs are prone to unjustified segregation and solitary confinement, self-mutilation, rage and violence, suicide attempts (and completions) and are easy targets for abuse (Vera Institute of Justice, 2006). It is not uncommon for segregation units to be occupied by at least 50 % of mentally ill inmates (Vera Institute of Justice, 2006). Despite housing more SMI than mental institutions in some counties across the U.S., the criminal justice system is ill-equipped to deal with the ever-growing mentally ill inmate population.

Another reason incarcerating individuals with SMI is a concern is its significant, negative economic impact on society. Incarcerated individuals lose their ability to participate in the work force or contribute to the national economy (World Health Organization, 2003). The loss of productivity (known as indirect costs) can cost national economies many billions of dollars in lost profits (World Health Organization, 2003). By itself, schizophrenia cost the U.S. \$14 billion in 1990 (Rice & Miller, 1996), and \$62.7 billion in 2002 (Wu, et al., 2005). Contacts with the criminal justice system by individuals with schizophrenia were estimated to cost the United States \$464 million in 1990 (Rice & Miller, 1996). That cost has assuredly risen since 1990 but new estimates are not currently available.

The National Comorbidity Survey Replication (NCS-R), and epidemiological account of mental disorders, estimated that individuals with an SMI had a mean reduction of earnings of \$16,306 (Kessler et al., 2008). Annually that loss of earnings was estimated to be 193.2 billion. As pointed out by Dr. Tom Insel in an editorial in the *American Journal of Psychiatry* these estimates are conservative because virtually no one surveyed as part of the NCS-R had schizophrenia or autism. Nor did the survey include the estimated 22 % of SMI individuals currently incarcerated, or those who are homeless or institutionalized (Insel, 2008).

Also incurred by society, are the unspecified costs accrued by the building of jails and prisons to house the increasing numbers of incarcerated individuals with SMI. As of 2006, the United States had erected almost 5,000 jails and prisons that employed approximately 750,000 employees (Vera Institute of Justice, 2006). Tax payers will likely have to fund the building of additional jails and other holding facilities and the costs of the employees hired to run them. MHCs may be instrumental in reversing these expensive trends. A recent RAND study by Ridgely and colleagues (2007) (the only one conducted to date) found that the Allegheny County

MHC in Pittsburgh, Pennsylvania saved taxpayers an estimated three and half million dollars over a two year period (Kaplan, 2007).

In reality the consequences of incarcerating individuals with SMI are enormous. The majority of individuals with an SMI within the penal system do not receive adequate care and are potentially made worse by their confinement. In addition, incarceration of these individuals is costly to the general society. Not only is incarcerating these individuals potentially harmful and expensive, but lack of offering adequate treatment may be a violation of a basic constitutional right, as noted by Steadman and colleagues in a June 2009 study of mentally ill offenders.

Women offenders with SMI are at a particular disadvantage. A recent study of five jails in New York and Maryland estimated that when PTSD was included as a diagnostic category women accounted for nearly one third (34.3 %) of the SMI population (Steadman et al., 2009). By midyear 2005, 73 % of state prison and 75 % of jailed female inmates were reported to have mental health problems (James & Glaze, 2006). A similar pattern has been found among nongovernmental studies of incarcerated female populations. Teplin and colleagues, for instance, have consistently documented high rates of psychiatric illness in their work with Cook County female jail inmates (Teplin, Abram, & McClelland, 1996; Teplin, Abram and McClelland, 1997). In another example, Blitz, Wolff, Pan, & Pogorzeiski (2005) investigated gender patterns among inmates with special needs (those classified as having a behavioral health disorder) in the New Jersey state prison system. Nine prisons for males and one (the only one in New Jersey) prison for incarcerated females were considered in the study. Among those participating, 2,715 men were identified as having special needs and 474 women. Among the 10 prisons included for investigation, 18 % of those incarcerated were classified as having special needs, with women more likely than men (37 % were identified as special needs vs. 16 % of men). When compared

to women, men were more likely to have psychotic disorders (28 % vs. 12 %) and women more likely to have depressive disorders (58 % for women vs. 45 % for men). Collectively, these findings demonstrate the urgent need for diversion programs that are both rooted in the scientific method and have been proven effective through quantitative analysis.

3. The Evolution of MHCs

In order to deal with the ever-growing problem of imprisonment of the mentally ill, the Mental Health Courts Program (MHCP) was developed with the passage of federal legislation in 2000. President William J. Clinton signed into law America's Law Enforcement and Mental Health Project Act (ALEMHP) (S.1865), P.L. 106-514. Officially signed November 13, 2000, this bipartisan bill was introduced into Congress by Republican Pete Dominici of New Mexico, Democratic Representative Ted Strickland of Ohio, and Democratic Senator Mike Dewine of Ohio (Reed, 2002). P.L. 106-514 established a grant program that encouraged local jurisdictions to apply for federal funds with the goal of launching 100 pilot MHCPs or other diversionary programs (Bazelon Center for Mental Health Law, 2003). The goal of the MHCP is to divert non-violent offenders charged with a misdemeanor crime and diagnosed with SMI, and to place them in community treatment when appropriate (Reed, 2002).

The 2000 ALEMHP Act amended the Omnibus Crime Control and Safe Streets Act of 1968. The Omnibus Crime Control and Safe Streets Act of 1968, passed by President Lyndon Johnson, helped establish the Bureau of Justice Administration (BJA) (Fagan, 1997). The 1968 act was the first federal block grant program and reflected President Johnson's belief that the federal government should do more to support local and state law enforcement agencies (Fagan, 1997). Under the 1968 Omnibus Crime Control and Safe Streets Act, \$100 million federal dollars were allocated to states that proposed community programs with the goal of

reducing crime. According to a survey of 450 history and political science professors, conducted by the Brookings Institute, the Omnibus Crime Control and Safe Streets Act of 1968 was judged one of the United States governments' greatest achievements in the past 50 years (Light, 2000).

In 1997, the Council of State Governments reported the existence of only four MHCPs. By 2004, the last year of federal funding for the MHCP under the ALEMHP act, there were 70 MHCPs nationally, according to the Council of State Governments. Just as the 2000 act was about to expire, President George W. Bush passed related federal legislation, based in part upon the urgings of Democratic Representative Ted Strickland of Ohio and Senator Mike Dewine, Republican, also from Ohio. On October 30, 2004, President Bush signed into law the Mentally Ill Offender Treatment and Crime Reduction Act of 2004 (MIOTCRA) P.L. 108-414. The 2004 law followed President Bush's New Freedom Commission's 2003 report recommendations which cited using jail diversion and community re-entry programs as the best practices for reducing the increasing unnecessary criminalization and extended incarceration of individuals with an SMI (President Bush's New Freedom Commission, 2003; Abramowitz, 2005; Steadman & Redlich, 2005).

The MIOTCRA of 2004 expanded the ALEMHP Act of 2000 by allowing juvenile offenders with a mental illness to participate in the MHCP. Similar to the ALEMHP Act, the 2004 law gives grants to state and local jurisdictions to develop diversion programs that specifically target non-violent juveniles and adult offenders with mental illness and co-occurring disorders such as substance dependence (Abramowitz, 2005). The 2004 law specifies that grantees applying for funds must work collaboratively with other local criminal justice or mental health agencies. The grant programs encouraged by the 2004 law include the creation or

expansion of jail diversion programs, treatment programs, and community re-entry programs as well as the specialized training of law enforcement officers (Abramowitz, 2005). With the funding help of the MIOTCRA of 2004, as of 2007, the BJA reported that there are 150 MHCPs in existence in 35 states and more in the planning stages.

The MHCP established MHCs. Serving as a model for early MHCs was the Psychiatric Assertive Identification Referral/Response (PAIR) Program in Indianapolis, Indiana in 1996. PAIR is considered by many to be the nation's unofficial first MHC (Herman, 2005). One year after PAIR began operations, Broward County, Florida initiated its own MHC spawned by the death of an elderly woman at the hands of a severely mentally ill man. Aaron Wynn, said to be constantly in and out of mental health facilities, pushed an 85 year old woman outside of a supermarket. She later died and Wynn was convicted of manslaughter. A subsequent grand jury investigation into Wynn's interaction with Florida's mental health system exposed a disjointed mental health system (WGBH Educational Foundation, n.d.). This finding set in motion the building of this country's first official MHC in Broward County, Florida (Boothroyd, Poythress, McGaha, & Petrila, 2003).

Currently, despite their being over 150 existing MHCs, there is no national model of what officially constitutes a court. The Department of Justice (DOJ) does offer general recommendations and requirements for the establishment of an MHC but the specific arrangements are left up to local jurisdictions and law enforcement (Cosden, Ellens, Schnell, Yasmeen, & Wolfe, 2003; Reed, 2002; Tyuse & Linhorst, 2005). For this reason, the program has been criticized for not having a standardized national model (Cosden, et al., 2003; Tyuse & Lindorst, 2005). According the Criminal Justice/Mental Health Consensus Project website, the Council of State Governments has compiled a set of program recommendations for grantees of

mental health courts entitled: *Improving Responses to People with Mental Illnesses: The Essential Elements of a Mental Health Court* (latest version is of 2008). These recommendations, Council of State Governments advises, have been presented and suggested as official recommendations for building an MHC.

The latest legislative action regarding Mentally Ill Offender Treatment and Crime Reduction Act (MIOTCRA) came in October 2008. The Criminal Justice/Mental Health Consensus Project website, (the group charged with providing technical assistance with communities developing an MHCP) reports that President Bush signed the Mentally Ill Offender Treatment and Crime Reduction Reauthorization and Improvement Act, S., 2304. This reauthorizes the earlier MIOTCRA for an additional five years at \$50 million per year. This bill was passed the Senate by unanimous consent on September 26, 2008. It then passed the House of Representatives on September 29, 2008. This reauthorization process was completed a full year before the program was set to expire thanks to the bipartisan efforts led by Senators Edward Kennedy (D-MA), Pete Domenici (R-NM), Rep. Bobby Scott (D-VA) and Jim Ramstad (R-MN). According to the Consensus Project website, this bill also extends training to law enforcement officials for the purpose of identifying and responding to individuals with mental illnesses. The latest reauthorization bill also supports the development of law enforcement receiving centers to assess individuals who were in custody for mental health or substance abuse related treatment needs.

Related legislation was recently introduced by Senator Jim Webb (D-VA). On March 29, 2009 Sen. Jim Webb introduced the National Criminal Justice Commission Act of 2009 (S 714). If enacted this legislation would create a blue ribbon commission to examine the current status of the criminal justice system. Cited among the "urgent reasons" for examining the

criminal justice system were the “four times as many mentally ill people in prisons than in mental hospitals,” according to Senator Webb's website. The legislation also seeks to examine how the criminal justice system is impacted by the current drug policies, gang violence, and the role of the military in the prevention of crime, and to examine also the costs of incarceration. Thus far, the bill has been read twice and referred to the Committee on the Judiciary (GovTrack.us, 2009).

4. Coordination, Administration and Evaluation of the MHC Program

The MHC program is administrated by the Bureau of Justice Administration (BJA). The BJA coordinates the mental health services project with the Jail Diversion Targeted Capacity Expansion (TCE) Grant Program, another jail diversion program and initiative of the Substance Abuse and Mental Health Services Administration (SAMHSA) (Bureau of Justice Administration, 2006). Both the BJA and SAMSHA are housed within its parent program, the Department of Justice. According the BJA, the overarching goal of the MHC program is to fund innovative programs that divert the increasing numbers of adult and juvenile offenders with co-occurring mental health and substance abuse disorders to community based mental health and or substance abuse treatment (Bureau of Justice Administration, 2006b). According to the Mental Health Courts Survey in 2005 (this data has been moved to Criminal Justice/Mental Health Consensus Project Infonet website), the Department of Justice in conjunction with the MacArthur Foundation is designated as the primary evaluator of the MHC program.

5. Types of Measures and Outcomes Commonly Used or Reported in MHC

Literature

A preliminary assessment of approximately 14 published, peer-reviewed MHC studies conducted in late 2008 showed that there are three general types of outcomes used in testing the effectiveness of MHC programs. These three categorized outcome types are as follows: (1) psychological/psychosocial; (2) behavioral health service use; (3) and criminal outcomes. Some of the more commonly used psychological/psychosocial outcomes included life satisfaction, global functioning and psychiatric symptom or distress status. Less than half of the available MHC studies collected information related to behavioral health service use outcomes. Inquiry about service use, for example, involved collecting data about how many MHC participants were referred to mental health treatment, how many monthly treatment hours court participants engaged in treatment or if participants had been hospitalized during their time in the MHC program. The most common type of outcome reported among all of the MHC evaluations was criminal justice outcomes, specifically criminal recidivism. One study (Christy, Poythress, Boothroyd, Petrila, & Mehra, 2005) collected self-reported data on acts aggression and violent acts (with the help of a modified version of the unpublished MacArthur Community Violence Instrument) and O'Keefe (2006) collected data on whether MHC participants were homeless 12 months prior to enrollment or the 12 months during their involvement in the MHC program.

6. MHCs and Recidivism

Although empirical evidence of the effectiveness of MHCs was beginning to emerge and the results are mostly positive, their specific effectiveness for reducing recidivism has yet to be demonstrated (Redlich, Steadman, Monahan, Robbins, & Petrila, 2006). Generally, most studies indicate a decrease in recidivism but these reductions are not always statistically significant. For instance, Christy and colleagues found that the outcome of recidivism was 47 % for those in the MHC group compared to 56 % for the comparison group. While there was a nine percent

difference between the MHC group and the comparison group, this result did not reach statistical significance. They also calculated whether the MHC group had been re-arrested sooner than the comparison group. The results indicated that the MHC group was re-arrested less quickly after their release to the community than the comparison group but this finding also was not significant. Christy et al. did find that MHC participants spent on average of three days in jail compared to 23 days – the number of days individuals with similar characteristics would have spent in jail prior to the introduction of the MHC program.

Neiswender (2005), using the outcome of re-conviction in King County Washington, reported that 114 MHC graduates were significantly less likely to spend time in jail compared with 80 opt-out participants during one and two year follow-up periods. Similarly, Moore and Hiday (2006) compared whether MHC subjects fared better than traditional court defendants with regard to recidivism. During a 12 month follow up, the traditional court defendants were re-arrested significantly more often than the MHC participants. Additionally, not only were MHC participants arrested less than traditional court defendants, Moore and Hiday found that the rate of re-arrest was 47 % less than those in the traditional court defendant group. In another MHC study, Herinckx, Swart, Ama, Dolezal, & King (2005) found that MHC graduates were 3.7 times less likely to re-offend than those who did not graduate. In the latest MHC study of a San Francisco MHC, McNeil and Binder (2007) found that MHC participants went longer without being charged with a new crime than individuals who received treatment as usual (TAU). A survival analysis showed that the likelihood of being involved in a new crime was 26 % lower compared to those in the TAU group 18 months after MHC involvement. Even though MHC participants in many of the aforementioned programs re-offended less than those who did not

participate, MHCs thus far have failed to consistently decrease recidivism at statistically meaningful rates.

7. MHCs and Theory

Preliminary reviews of the existing peer-reviewed MHC studies indicate that few offered acceptably identifiable theoretical frameworks. The majority of studies relied on empirical generalizations. Instead of operating under a well-specified theoretical framework, MHCs seem to function generally under the guiding principle of therapeutic jurisprudence (TJ) (Rottman & Casey, 1999). Similar to drug courts, the basic premise underlying TJ is that laws can be either therapeutic or anti-therapeutic. This is to say that some laws have the potential to be helpful or unhelpful to defendants and sometimes even harmful. A commitment to TJ means that the courts will try to ensure that laws are, to the extent possible, fostering the most positive therapeutic outcome (Casey, & Rottman, 2000). The goal of TJ is to produce the most constructive therapeutic outcome not only for the client, but also for the client's family and for the community and society at large. TJ requires that professionals from all disciplines collaborate and be sensitive to the possible outcomes of legal procedures and decisions (Madden & Wayne, 2003).

The TJ philosophy is helpful but does little to reliably predict future outcomes. Because of the relative lack of theory, at least within the peer-reviewed reviewed studies, there exists a great need for theoretical and conceptual development to expand the understanding of the complex nature of MHCs. Additionally, less than half of the 14 studies as part of the preliminary assessment tested the intervention of MHCs using the rigor of a randomized controlled design and most contained relatively small sample sizes. Because of these design limitations, a supportive evidence base for MHCs is sorely lacking (Ridgely, et al., 2007).

8. Anosognosia, Leverage and MHCs

In the context of fully understanding the nature of severe mental illness it is important to highlight the fact that approximately 50% of this population exhibits a specific type of neurological deficit known as anosognosia (Torrey & Zdanowicz, 2001). Anosognosia affects the prefrontal cortex of the brain, which is used for insight and understanding of one's needs (Amador, 2001; Torrey & Zdanowicz, 2001). As such, anosognosia can be thought of as similar to self-aware consciousness. Understanding the impact of anosognosia, or lack of illness awareness, is critical to understanding the difference MHCs can make in the lives of patients, families, and society. Crucially, an individual who does not believe that they are ill will often refuse treatments and medication. In fact, at least 75 % of individuals with SMI do not consistently take their medication (Fenton, Blyer & Heinseen, 1997). The failure to take medication can lead to homelessness, incarceration, suicide or violent behavior, (Torrey & Zdanowicz, 2001) and increase overall health care costs (Pyne, Bean, & Sullivan, 2001).

Importantly, MHCs stipulate that during their probation, participants are to comply with medication and attend the assigned mental health treatments. If an individual does not comply with the stipulations imposed by the court, he or she may be sent back to jail or prison. When adherence to treatment is tied to a condition of probation, this becomes the leverage that is used to facilitate and ensure a participant's acceptance of treatment. In this way, MHCs can be influential in facilitating treatment among individuals with SMI who may not have otherwise accepted or received treatment prior to their jail or prison sentence thereby decreasing their chances of re-incarceration, suicide, or violent behavior.

As mentioned above, MHCs can leverage treatments by stipulating that participants engage in and comply with treatment. The advantage of this leverage is that it can help individuals

receive treatment before a crisis occurs. This is particularly relevant for individuals with SMI who are commonly unable to recognize their illness (Amador, 2001; Torrey & Zdanowicz, 2001). For individuals who lack an awareness of their illness, it is too often the case that they appear for treatment during a crisis, only after they have decompensated or their illness has exacerbated to the point of needing emergency intervention (Torrey & Zdanowicz, 2001). MHCs have the potential, through leveraging treatments, to improve treatment compliance and possibly prevent future crises.

9. MHCs and the Public Mental Health System

MHCs mandate that participants attend treatments presumably offered through the public mental health system. Surprisingly, a discussion of how and if this process is occurring has largely been absent within the MHC literature. This dialogue is important because as it stands, reports of the public mental health system show that it is a system in disarray (President's New Freedom Commission, 2002). The most recent large scale examination of the system was conducted by a bipartisan group assembled in 2001 by President George W. Bush, and known formally as the President's New Freedom Commission on Mental Health. Their 2002 interim report described the public mental health system as fragmented, with no collaboration between programs. Programs goals and missions were often conflicting, bureaucracy restricted many programs, and care in the mental health system was found to be uncoordinated and difficult to access. Critically, the interim report revealed that access to services is especially difficult for those with SMI. The Substance Abuse and Mental Health Services Administration (SAMHSA), in a 2002 survey of national drug use and health, reported that more than half of people with SMI never received treatment.

Boothroyd, Mercado, Poythress, Christy, and Petrila (2005) voiced a similar concern about the adequacy of the public mental health system. In their quasi-experimental trial of Broward County, Florida MHC defendants, (77 of whom were in the mental health court and 97 who were involved in the regular court system), the researchers were unable to detect a statistically significant difference between the groups in the reduction of psychiatric symptoms. They concluded that the lack of a symptom reduction among MHC participants was more likely reflective of an inadequate public mental health system rather than a failed MHC program. The success or failure of the MHC is seemingly tied to the ability of the public mental health system to effectively treat those diverted from the criminal justice system. A gap in the literature remains about whether MHCs are able to work effectively within a flawed and underfunded public mental health system.

10. Pleading Guilty

There is reason to believe that MHCs may be inadvertently producing negative, unintended effects. For example, to participate in a MHC, a defendant may have to plead guilty but doing so establishes a criminal record. In their review of approximately 20 MHCs, the Bazelon Center of Mental Health Law (2004) reported that over half of the MHCs require a guilty or no contest plea as a condition of participation in the MHC program. The Bazelon Center reported that in return for a defendant's guilty plea and participation, some MHCs agree to defer the charges until treatment is completed. Additionally, over a third of the MHCs surveyed agreed to dismiss the charges upon the completion of the MHC and treatment, while other courts agreed to expunge the defendants' charges. Even when a guilty plea is rendered and treatment is completed, the Bazelon Center found in a majority of the courts they reviewed, charges were not automatically dismissed. The Bazelon Center report also noted that when a

defendant wanted their charges expunged, it was often a long and complex process (Bazelon Center for Mental Health Law, 2004). If charges are not expunged or dismissed, the resultant guilty pleas (misdemeanors or felonies) can have serious negative consequences for defendants.

The unintended consequences of having a criminal record as a result of pleading guilty can include the loss of civil liberties, such as the right to vote (Caulkins, Reuter, Iguchi, & Cheisa, 2005; Pogorzelski, Wolff, Pan, & Blitz, 2005). As shown in Table 1, other more serious consequences may include termination of parental rights, permanent barring from welfare programs and a provisional ban (based on how many felonies have been incurred) on applying for federal financial student aid (Caulkins, et al., 2005; Pogorzelski, et al., 2005).

Table 1. *Possible Unintended Effects that Offenders May Face After Incarceration*

Effects
<ul style="list-style-type: none">• Losing the right to vote.• Losing the ability to participate on juries.• Family disruption that includes:<ul style="list-style-type: none">-Eviction or permanent barring from public housing.-Limitation or exclusion for student financial aid.-Conviction of drug offense permanently bars individuals in many states from welfare programs including Temporary Assistance for Needy Families (TANF).-Affects future employment from military or government job.-In some cases, termination of parental rights.• Limited ability to expunge criminal record.

- Difficult time finding treatment agencies to treat court participants. Agency staff are often not adequately trained to treat those with history of violence and agencies may be frightened of that liability.

Sources: Caulkins, et al., 2005; Pogorzelski, et al., 2005

The erosion of rights and the loss of access to social services can affect how well a newly released inmate functions in society. Losing access to many of the aforementioned treatments and services may leave newly released inmates ill-equipped to successfully reintegrate back into society, putting these individuals at high risk of recidivism (Pogorzelski, et al., 2005). The findings by Caulkins et al. and Pogorzelski and colleagues underscore the importance of ensuring a continuum of care and connection to services upon an inmates' release into the community.

Inmates diagnosed with a mental illness are particularly vulnerable upon their release to the community. It is estimated that nearly 100,000 inmates with a mental illness are returning to communities each year (Draine, Wolff, Jacoby, Hartwell, & Duclos, 2005). Upon their return, they usually have few resources. They are often without friends, family, housing or a stable connection to treatment providers (Lovell, Gagliardi, & Peterson, 2002). Even if a an offender with a mental illness participates in a MHC program, he or she is not guaranteed access to behavioral health treatment. Ridgley and associates (2007) found that at least among Allegheny County, Pittsburgh MHC participants, they had to compete for services with all of the other individuals needing access to those same services. Surprisingly little is known about how well MHC programs are able to assist in procuring the aforementioned resources for their participants.

11. Legality of MHCs

Concerns about the legality of MHCs have been raised by legal advocates for the mentally ill. Particularly concerned about the legal protections and rights of defendants with a

mental illness is the Bazelon Center for Mental Health Law. In a 2004 publication about the role of MHCs, the Bazelon Center emphasizes the importance of MHC participation being a voluntary choice. For a MHC to be truly voluntary, the Bazelon Center believes that the defendant must not simply be told that participating in the MHC will reduce or eliminate their sentence or get them out of jail. Rather, the Bazelon Center contends that participants must be fully informed by program administrators or other appropriate staff (e.g. defense attorneys) about what their participation entails. By this they mean that participants should be able to demonstrate that they comprehend what they are agreeing to. As the Bazelon Center points out, agreeing to partake in a MHC can have its own complications that may include entering a guilty or no contest plea, attending treatments, taking medication, attending frequent court hearings and agreeing to probation. The Bazelon Center believes that when potential MHC participants are not fully informed about precisely what they are committing to, this failure to inform could be a violation of the 6th and 14th amendments (right to a trial by jury and equal protection guarantee, respectively). Regarding the 6th amendment specifically, the Bazelon group contends that agreeing to participate in a MHC means waiving a defendant's right to a trial. They argue that this practice could be considered discriminatory by a state program under the Americans with Disability Act (Bazelon Center for Mental Health Law, 2004).

12. Cognitive Ability and MHCs

Researchers and legal scholars are just beginning to explore the concept of comprehension among mentally ill defendants in regard to their participation in MHCs. Even if the MHC personnel fully explain a defendant's participation in a MHC, it is possible that the defendant is not able to truly comprehend their decision because of their mental illness. Those with SMI often suffer with cognitive and neurological deficits that can make understanding their

circumstances difficult (Redlich, 2005). Further complicating this decision making process is that many of the SMI defendants are asked to make a decision about whether they want to participate in a MHC program shortly after being arrested. Many SMI, right after they have been arrested, are under extreme duress. They may not be medicated or thinking clearly (Bazelon Center for Mental Health Law, 2004; Redlich, 2005). One investigation of the Broward County, Florida MHC found that 46.3 % of the participants did not know their participation was voluntary. In that same study, 29 % reported they did not realize their participation was voluntary until after they had agreed to be involved (Boothroyd et al., 2003). The implication is that participants believed they were forced into the program. Allison Redlich contends that “the very types of people MHCs were designed for may be the people who do not fully comprehend their purpose, requirements, and roles in the courts” (Redlich, 2005, p.616). As of yet, Redlich argues there is no definitive way to determine if MHC participants are able to fully comprehend their participation.

13. Summary

This chapter reviewed historical circumstances that led to the incarceration of those with a serious mental illness as well as the current state of MHCs and traces the evolution of their development. It also outlined the status of the MHC literature, lack of a theory related to the courts, and the types of measures and outcomes typically utilized within court evaluations. Also included was a discussion of the potential unintended consequences and the problems that may exist for the growing number of MHCs being built across the United States in the absence of empirical data supporting their effectiveness. The evidence of the effectiveness of MHCs that has emerged indicates that MHC participants are helped through entering these programs. However, before the courts continue to multiply, there should be an effort to quantitatively prove

their efficacy. The current study attempts to address that gap in knowledge through meta-analysis. The following chapter describes the methods in which this meta-analytic study was carried out to determine whether MHCs qualify as an effective mechanism to solving this significant public health problem.

III. METHOD

This chapter provides a detailed explanation of the methods used in the meta-analysis of MHCs. Specifically included is information pertaining to which databases were searched for MHC studies, internet resources searched and accessed, and selection criteria. It also provides information regarding how data was extracted, how study quality was assessed as well as how data was managed during each step in the quantitative review process. The second half of the chapter describes the statistical analysis procedure.

A. DATA SOURCES AND SEARCHES

A comprehensive literature search was conducted from 1997 through May 2008 of MEDLINE, PsychINFO, PubMed, ERIC, Social Science Abstracts, Social Work Abstracts, Social Science Citation Index, Sociological Abstracts, ProQuest Digital Dissertations database, Social, Psychological, Criminological, the Cochrane Library database and the National Criminal Justice Reference Service (NCJRS) databases. Other search strategies included the hand searches of journal article reference sections and a query of authors who were thought to have prospective unpublished or forthcoming studies of MHCs. Mental health and government websites such as the National Institute of Justice (NIJ) were also searched extensively. In addition, foundation websites, newsletters and policy research organization websites were thoroughly vetted (Landenberger & Lipsey, 2005) as well as Google Scholar. Aspects of the aforementioned search process were repeated weekly and monthly to ensure that no new studies had been published.

Keyword searches in each of the above listed databases included the following (typed in both singularly and in Boolean format with “and”, “or”): *mental health courts, mental health*

courts program, mentally ill in courts, mentally ill offenders, serious mental illness, serious and persistent mental illness, severe mentally ill offenders, severe mentally ill, SMI, incarcerated mentally ill, jailed mentally ill offenders, imprisoned mentally ill offenders, mentally ill in prison, mentally ill prisoners, jail diversion programs, jail diversion, and mentally ill court programs.

After removing duplicate citations or any other reference that did not meet the aforementioned inclusion criteria, the studies that remained were retrieved and assessed in their hardcopy form to ensure they met inclusion criteria. Approximately 78 citations were reviewed and a total of 23 were found to meet inclusion criteria.

B. E-MAIL INQUIRY

Efforts were made to account for all at-large, unpublished and non-peer reviewed MHC studies or evaluations. To increase the possibility of gaining access to MHC studies not found in academic journals, a short e-mail inquiry was sent to all MHCs for which existing e-mail addresses were available. Because many MHCs are relatively new and scattered throughout the United States, it was possible that some MHC personnel performed their own in-house evaluations but never published those results in an academic journal. It was also possible that MHC personnel hired a local policy agency to conduct an evaluation on their behalf. Those results realistically might not have been published in a peer reviewed source either. In some cases, it was speculated that MHC reports or evaluations may have been uploaded to an agency or MHC website or presented to staff and personnel only and thus remained unpublished in traditional academic outlets. All of that potential information, if available, and depending on the quality, had the potential to be utilized in this current meta-analysis.

1. E-mail Inquiry Method

As briefly mentioned in the previous section, the goal of the e-mail inquiry was to contact as many MHC's within the United States and ascertain whether each respective MHC court had compiled its own internal program evaluation or MHC study. One resource was particularly useful in generating a large list of MHC's that are currently operating within the United States, the Criminal Justice/ Mental Health Consensus Project website. This website is operated by the Council of State Governments Justice Center, a national nonprofit organization that assists local, state and federal governments with policy and public safety related issues (<http://justicecenter.csg.org/>). The consensus website contained the names and addresses of over 100 MHCs operating within the United States. Furthermore, most of the MHC listings found on this website had specific information regarding their street address, number of years in operation, funding sources, and in some cases, limited outcome data (i.e. how many people graduate from their program), as well as names of current MHC supervisors and other staffing personnel, including, their direct e-mail addresses. For each MHC that had an e-mail address available, an e-mail was sent directly to the MHC supervisor or program director requesting any available evaluation or other outcome data. When an e-mail address was not available but the name of a program direction was, an Internet search was conducted to see if a new or updated e-mail address or phone number could be located.

2. E-mail Inquiry Results

One hundred and twenty-nine MHCs across the United States were contacted via e-mail. Twenty-one (17%) had non-usable e-mail addresses. That meant that an error message was generated after hitting the "send" button indicating that the e-mail address was no longer in use. Only two of the 21 individuals without e-mail addresses could be located through an extensive

internet search. Both individuals were contacted by phone but reported having no data or other pertinent information regarding their MHC that they could share.

A total of sixty-one (47%) MHC program directors responded to the e-mail. Twenty-three (17%) MHC program directors sent various types of information regarding their MHC programs, a majority of which was not appropriate to be included in the meta-analysis. In total, twenty-three sets of information were gathered via the e-mail inquiry method. Seven full-scale unpublished studies were garnered but only two of those seven met the inclusion criteria for the meta-analysis.

It should also be noted that at least a quarter of the individuals who responded to the e-mail but did not have any data to send said that it was “too early” for them to have outcome findings. Many of the MHCs contacted were in the early stages of development and thus at that time had not had a chance to generate outcome data. Among those MHC programs that had been operating for several years, several program directors noted that it was difficult to find an individual who had the statistical knowledge and expertise to gather the necessary outcome data needed to produce a quantitative evaluation report. Other directors who had collected their version of “outcome data” forwarded information they had available but much of it was unusable for a meta-analysis. Some examples of data that were regarded as unusable for a meta-analysis included PowerPoint presentations created for agency staff, MHC participant satisfaction survey responses, MHC agency fliers and program descriptions, tallies of accepted and rejected participants, Excel files containing year-to-year tallies and graduation rates, and in a few cases, evaluation reports containing valuable qualitative information which lacked, however, sufficient statistical data to record or calculate an effect size.

C. STUDY SELECTION

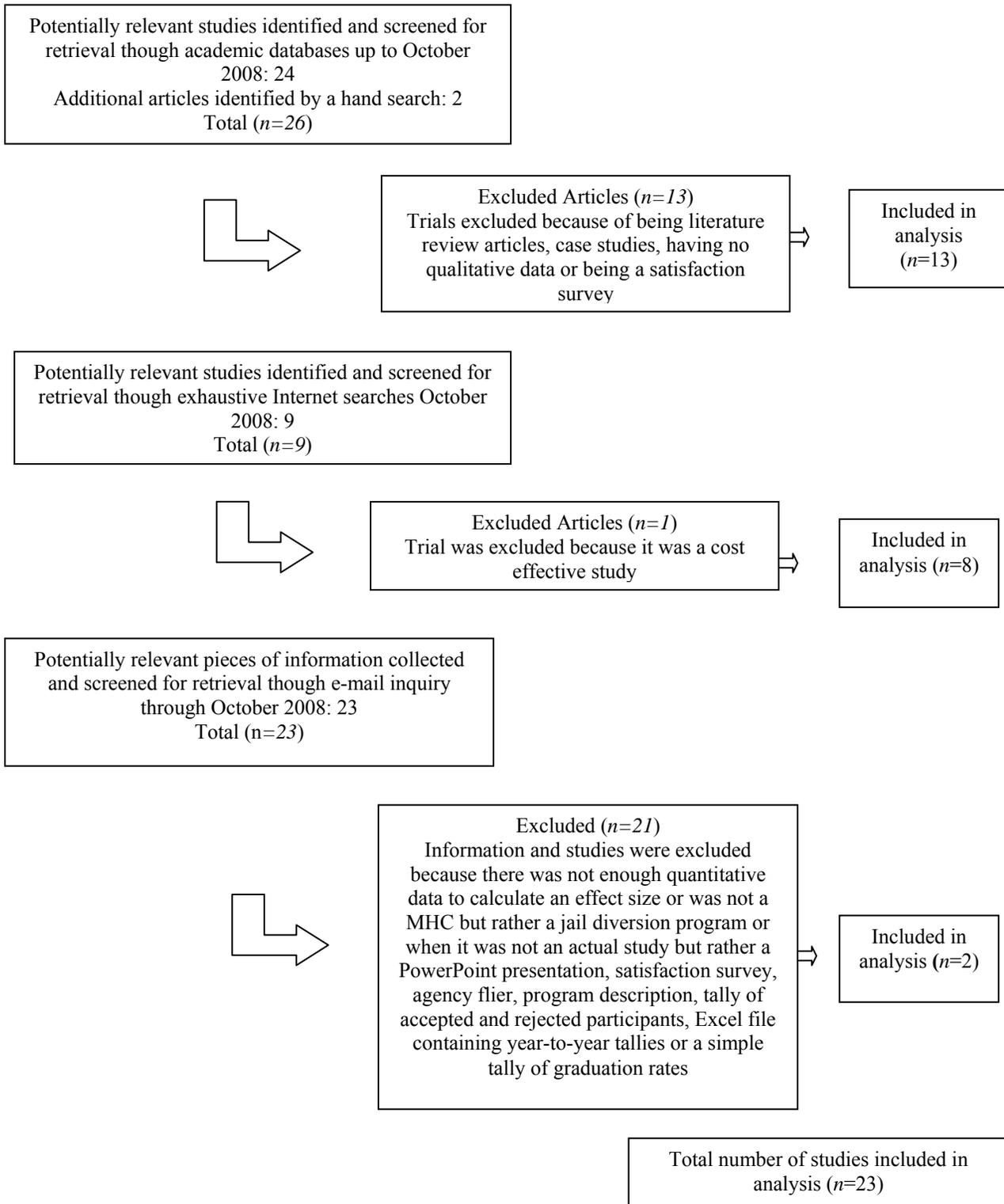
Studies included in the analysis were those (a) confined to the United States; (b) written in English; (c) focused on individuals who were 17 years and older with a mental illness; (d) reported at least one quantifiable MHC clinical or recidivism outcome that permitted reasonable computation of an effect size statistic (Landenberger & Lipsey, 2005). Articles or reports excluded from the analyses were those (a) studies that did not report clear and measured clinical or criminal recidivist outcomes in a quantifiable form or that did not allow for the calculation of a quantifiable outcome; (b) studies that were more descriptive or exploratory in nature; (c) studies that focused on reporting characteristics of MHCs across a wide variety of courts such as surveys or qualitative reports; (d) studies that focused on jail or prison treatments for mentally ill offenders such as therapeutic communities that were not related to MHCs; and lastly; (e) studies that reported outcomes for pre and post booking programs or programs generally considered unspecified jail diversion programs. The main focus of this study was to exclusively review MHC interventions.

D. TYPES OF STUDIES

Studies were included if they used experimental or quasi-experimental designs that compared an MHCs treatment condition with a control, comparison or waitlist group (Landenberger & Lipsey, 2005), or if the study participants received the treatment after a predetermined amount of time, known as an intention-to treat group. Studies were also included if they were pre-post-test one-group or multi-group designs in which the clinical or recidivism outcome measure, such as quality of life or rate of arrest, respectively, was taken before and after the MHC intervention (Wilson, Lipsey & Derzon, 2003) (the measure could have been self-report or derived from clinical or court records and could have been reported on either a

dichotomous or continuous scale) (Wilson, Mitchell & MacKenzie, 2006). Both published and unpublished studies were deemed eligible for inclusion. The Quorum flowchart (Moher et al. 1999) (Fig.1) illustrates the above-described study screening process.

Figure 1. *Quorum Flow Diagram of Reviewing Process*



Descriptive and outcome data were extracted for each of the studies. The descriptive data collected specifically included citation information, sample size, participants age, gender, race or ethnicity, type of crimes the MHC programs dealt with (misdemeanor or felony, or both), study design, measures, study quality, and salient findings- all recorded onto three separate intervention coding forms. Authors were contacted directly when the information was missing or not clearly stated.

Every outcome for each study was carefully recorded. Once each outcome was extracted they were then categorized into five naturally occurring categories: (1) recidivism; (2) mental health/clinical; (3) substance abuse; (4) quality of life/life satisfaction or (5) miscellaneous outcomes. The category of recidivism included outcomes such as re-arrest, jail days, booking rate, and annualized bookings. Mental health/clinical outcomes were those such as medication monitoring, case management, group therapy, crisis intervention, individual therapy, or volume of behavioral health services. Substance abuse outcomes, for instance, included outcomes such as abstinence from drug use, illegal drug use, current drug offense or readiness to change (alcohol or substance abuse related behaviors). Examples of quality of life/life satisfaction outcomes included general life satisfaction, satisfaction with health, or satisfaction with relationships. Lastly, there were outcomes that did not logically fit into the first four aforementioned categories and thus were placed into the miscellaneous category. Those included outcomes such as employment status, legal status composite, or relation to self and others.

Following this coding procedure, a second trained reviewer carefully re-recorded key data of a random sample of eight studies to ensure accuracy and completeness. From this, a Cohen's (1960) Kappa (κ) score was calculated. Cohen's Kappa is the calculation of the percent agreement between raters (Orwin, 1994). Reitzel and Carbonell (2006) suggest it is a superior

calculation because it adjusts for the proportion of the rater's agreement that could occur between raters due to chance. The formula that will be used to calculate Cohen's Kappa is as follows:

$$\kappa = \frac{P_o - P_e}{1 - P_e}$$

where P_o is the observed agreement and P_e is the expected agreement (Orwin, 1994). A Cohen's Kappa = .704 was found showing very few coding disagreements. Any disagreements were resolved by discussion and consensus and where necessary, by obtaining outside assistance from an additional author.

E. ASSESSING METHODOLOGY QUALITY

Three separate methodological quality rating scales were used to assess each study, the Methodological Quality Rating Scale (MQRS), the Maryland Scale of Scientific Methods (MSSM) and a Campbell Collaboration systematic drug court protocol developed by Wilson, Mitchell and Mackenzie (2006). Due to the lack of agreement among scholars as how best to measure study quality (Petticrew & Roberts, 2006), it was determined that multiple methodological quality scales might serve to decrease bias. Each scale is described below.

The MQRS is a modified version of the Methodological Quality Rating Scale (MQRS) originally developed by Miller and Colleagues (1995) and the Mesa Grande project. It has been adapted for use in various types of studies but has been used primarily to assess the methodological quality of alcohol and drug dependence treatment studies, as well as other meta-analytic reviews (Vaughn & Howard, 2004). The MQRS is comprehensive in that it allows for the assessment of 12 dimensions of study quality including study design, replicability, whether the intervention had appropriate statistical power and analyses, and so forth. Following the

adapted version of the MQRS scale utilized by Vaughn and Howard (2004), MQRS scores within this study ranged from 1 (low quality) to 16 (high quality).

The MSSM is a scale developed by a University of Maryland Criminology and Criminal Justice research group (Sherman et al., 1997). The group was selected by the United States Department of Justice to systematically assess which of the known juvenile crime prevention programs work (Sherman et al., 1997). The scale was created to give a measure of internal validity and program effectiveness and to rate each evaluation research design based on a five-point scale. A score of one would be considered a weak design indicating that no comparison group was used and a score of five would be the strongest (Sherman, et al., 1998) and would specify that a randomized controlled design was used. According to the scales' developers, a minimum score of three is required before adequate conclusions should be drawn about a study's ability to ascertain true program effects.

The MSSM scale also allows for the assessment of other primary study quality factors such as the following: (1) whether or not other variables in the analysis might account for the true reason why an observed connection between a program and crime was found; (2) measurement issues such as attrition and; (3) whether there was adequate statistical power to detect program effects (Sherman, et al., 1998).

Although the MSSM is a widely used methodological quality assessment tool, it is not without its drawbacks. Wells and Littell (2009) note that while the scale does assess a study's internal validity, it does not account for selection bias, differences between study groups, systematic differences between groups, or attrition. While the MSSS scale is strongly suited to assess internal validity, Wells and Littell suggest that generally study quality assessment should be multidimensional and nuanced.

The third rating scale that was utilized for this analysis was developed by Wilson, Mitchell and Mackenzie (2006). They created the 14-page study review protocol when they conducted a systematic analysis of drug courts across the United States. The Wilson et al. protocol was chosen for this analysis because drug courts are similar to MHCs (i.e. philosophy, structure, program components, and so forth) and there are no known existing protocols available for the systematic review of MHC studies. Wilson et al. based their drug court protocol development on the recommendations proposed by Longshore et al. (2001) and about what they believed theoretically constituted drug court program “effectiveness” (Wilson, et al., 2006).

Furthermore, the drug court protocol developed by Wilson and colleagues was comprehensive because it provided a method of extracting elaborate information regarding each study such as study design characteristics, program characteristics and offender demographics, nature of outcome measures and data, effect size information, and methodological rigor (Wilson et al., 2006). The protocol also allowed for the coding of detailed information regarding the structure of the MHC (pre-plea, post-plea, etc.), who delivers the treatment for the program participants (i.e. mental health professional or criminal justice professional, etc.), what are the program components (individual therapy, NA/AA, residential treatment, etc.), and in what type of setting (i.e. group therapy, family setting, etc.) was the treatment provided.

With regard to scoring, the Wilson protocol did not detail or suggest a scale or composite score for the scoring of methodological quality and rigor. To deal with this ambiguity, a methodological quality score was created and modeled after the MQRS scoring system. Each study received a score on a scale ranging from 1 (low quality) to 21 (high quality). The higher the score the study received the more methodologically rigorous it was.

F. COMPARING THE THREE METHODOLOGICAL QUALITY SCALES

To assess whether the MQRS, Maryland Scale of Scientific Methods and the Wilson scales were related and measuring similar methodological characteristics, correlations were performed between the three scales. Theoretically, the scales should be correlated. That is because within each study for each of the three methodological rating scales, higher quality studies received higher methodological rating scores. Calculations showed that the three scales were in the expected directions and statistically significant.

G. STATISTICAL ANALYSIS

Data was entered into and analyzed using Comprehensive Meta-Analysis (CMA) 2.0 statistical software (Borenstein, Hedges, Higgins, & Rothstein, 2005). CMA was developed by individuals working in medicine, epidemiology and social sciences (Borenstein, 2005). Hedges's adjusted g was utilized to calculate the standardized mean difference on the effect of an MHC on four specific types of outcomes: (1) recidivism; (2) mental health/clinical; (3) quality of life/life satisfaction; and (4) drug and alcohol outcomes. Hedges's g is the difference between the means of two groups divided or standardized by the population standardized deviation (Rosenthal, 1994b) The Hedges's g formula is as follows: $(M_1 - M_2) / S$ (Rosenthal, 1994b).

Because most of the samples contained within this study are small, Hedges's adjusted g is the preferred effect size because it corrects for small sample size bias (Deeks, Altman, & Bradburn, 2001; Rosenthal, 1994b). When studies did not contain adequate effect size information, authors were contacted but in all cases, did not respond. In at least six studies, traditional effect size data (means, SD's) was not available but using the information supplied phi correlations were calculated within the SPSS program (version 14).

1. Heterogeneity and Statistical Modeling

Heterogeneity assessment is considered crucial in meta-analysis. That is because whether or not there is variation between studies directly determines whether a fixed-effect or random-effects model can be applied (Huedo-Medina, Sánchez-Meca, Marín-Martínez, & Botella, 2006). The classic test of heterogeneity is the Cochran Q -test. The Q is computed by adding the squared deviations of each study's effect from the overall effect estimate, weighing their contribution by its inverse variance (Huedo-Medina et al., 2006). The Q statistic is distributed as a chi-square with $k-1$ degrees of freedom with k being the number of effect sizes (Hedges & Olkin, 1985). When Q is statistically significant a random effects model is assumed (Lipsey & Wilson, 2001).

Although the Q test has long been the traditional heterogeneity test in meta-analyses, some researchers maintain that it is inaccurate. The problem with Q , according to Higgins, Thompson, Deeks, and Altman (2003), is that because meta-analyses tend to have a small number of studies, the Q metric is not powerful enough to detect true differences between studies. Higgins and colleagues describe an alternative and preferable measure over Q that they term the I^2 . I^2 is a metric that describes the percentage of variation among studies that cannot be explained by chance. I^2 ranges between 0% and 100% with higher values representing more heterogeneity. The authors also offered a preliminary categorization of I^2 with 25% considered low, 50% medium, and 75% high. Values of 0 are equal to no observed heterogeneity (Higgins et al., 2003.). I^2 is calculated as follows: $I^2 = 100\% \times (Q-df)/Q$ where Q is Cochran's heterogeneity statistic and df the degrees of freedom (Higgins et al., 2003).

Relatedly, Huedo-Medina et al. recently tested the performance of Q against the I^2 confidence interval using a Monte Carlo simulation. They found that, while similar, I^2 was a preferable metric over Q . Their analysis showed that I^2 is more precise than Q , is easily

interpretable and it assesses the magnitude of heterogeneity, something not offered by the Q metric. In an effort to maintain the most accuracy with regard to heterogeneity, I^2 will be reported in addition to Q within this analysis.

Both a random-effects model (RE) and a fixed-effects model (FE) were utilized where appropriate. Generally, most meta-analyses are conducted using the RE model because it is thought to produce results more accurate than the FE model (Hunter & Schmidt, 2004). There are several reasons for this. The FE model is based on the assumption that all studies within the meta-analysis have the same level of population effect sizes (Hunter & Schmidt, 2004). RE models follow the assumption that population effect sizes will vary between studies. The population variability assumption of RE models is more realistic, allows for the inclusion of more studies and thus is more generalizable than FE models (Overton, 1998). Furthermore, when FE models are used with studies that have variable population parameters, FE models have conflated Type I error rates, often much higher than nominal values (Hunter & Schmidt, 2000). Hunter and Schmidt (2000) also note that when confidence intervals are used based on FE standard errors they are prone to excessively narrow confidence intervals. They report that with the FE model, a confidence interval finding of 95% may actually have only been 60%. Because of the significant errors inherent in the use of FE models, most social scientists recommend the use of RE models (see the National Research Council, 1992).

2. Confidence Interval Chart

Each analysis is accompanied by a confidence interval chart. This chart is a visual representation of the data and depicts the individual study effects, a point estimate bounded by its confidence interval (Borenstien, 2005), and the overall mean effect.

3. Publication Bias

Publication bias, sometimes referred to as the “file-drawer problem” was assessed by analyzing a funnel plot. A funnel plot is a scatterplot that is used to graphically detect the presentation of publication bias (Light & Pillemer, 1984). If the funnel plot appears asymmetrical, then it is suggestive of a publication bias. Generally, the more symmetrical the plot the more likely it is that no publication bias exists.

4. Fail-safe N

A fail-safe N was also computed. The fail-safe N is the number of additional studies that would be needed to nullify the effect (Borenstein, 2005). It requires computing a combined p -value for all of the studies in the analysis. After this is complete, the computation of the fail-safe N requires a determination of how many additional studies with a (average) z of zero would be needed to produce a non-significant p -value (Borenstein, 2005).

5. Moderator Analyses

Because of the limited data available throughout most of the studies included in the analysis, moderation analysis was difficult. When data were available on possible moderator variables such as diagnosis, age, gender and race, there was little variability between studies. With few exceptions, most MHC study participants were white males in their mid-thirties diagnosed with a severe mental illness such as schizophrenia. Given these limitations, only one moderator analysis was conducted. That analysis is briefly described below.

Using the MQRS methodology scores from each of the 23 studies, a “proxy” moderator analysis was performed. The MQRS was judged among the three methodological quality scales to be, best suited for the “proxy” moderator analysis. That is because the MQRS seemed to give a more “fair” score when utilized for lower quality studies such as a one group pre-post test

design. The Maryland and the Wilson scales were designed for reviewing quasi-experimental or experimental studies and not necessarily observational studies.

The 23 studies were divided along the MQRS mean (11.81, rounded to 12) score into two groups: (1) “above average” or “high” methodological score (12 or above); or a (2) “below average” or “low” methodological score (11 or lower). This method for dichotomous division was chosen due to the lack of objective guidelines on how to best score and conceptualize methodological quality (Vaughn & Howard, 2004; Wells & Little, 2009). It was also chosen because another set of researchers, Pritzker, Moore and McBride (2005), utilized a similar method when they assessed study quality for service-learning interventions using the MQRS. Once each study was assigned as being of a high or low quality, the mean effect size and confidence intervals were compared. If the means were within each other’s confidence intervals, or if overlap between the two was evident, it was determined that there was likely a moderation effect. The obvious drawback of this practice is that it is an imprecise measure of moderation.

6. Stratified Analysis

Several subgroup analyses were performed as part of this synthesis. Recidivism, mental health/clinical, quality of life/life satisfaction and substance abuse outcomes were divided into subgroups and analyzed independently. For another analysis of subgroups, studies were divided into three categories: experimental, quasi-experimental, and observational. Within each of those three categories—experimental, quasi-experimental, and observational studies—recidivism, mental health/clinical, quality of life/life satisfaction and substance abuse outcomes were examined. For instance, an analysis was performed on recidivism outcomes among experimental-only studies. In addition, studies were divided between published and unpublished and peer-reviewed and non-peer reviewed for analysis. Within each of these two categories,

published and unpublished, recidivism, mental health/clinical, quality of life/life satisfaction and substance abuse outcomes were examined for each category. For example, an analysis was performed on substance abuse outcomes among unpublished studies. Each separate subgroup analysis is accompanied by a forest plot and a point estimate bounded by its confidence interval and the overall mean effect.

H. STUDIES NOT INCLUDED IN QUANTITATIVE ANALYSIS

There were approximately seven studies that could not be included in the meta-analysis. There were not enough quantitative data within the studies to produce an effect size. Despite this, the studies included valuable information. Therefore, it was important to include a summary of those findings. The studies include Maricopa County in Tempe, Arizona; Lane County, Oregon; Allegheny County, Pennsylvania (both the RAND cost-benefit analysis study and a 2009 independent evaluation report posted on their website); Palmer County, Alaska; and Salt Lake County, Utah MHCs; and a satisfaction survey of an MHC in Tarrant County, Texas.

The results of the seven studies were similar to what was found in the quantitative analysis with regard to recidivism. The majority of studies reported an overall reduction in recidivism. For instance, the Lane County, Oregon MHC reported having 25 individuals graduating from the MHC program between September 2003 and December 2005. Only 22 of those graduates had interactions with the criminal justice system as of January 2006. A study of the Palmer County, Alaska MHC reported a recidivism rate of 17 % for those who graduated from the program compared to 40 % involved in the traditional criminal justice system. Another report by Van Vleet, Hickert, Becker & Kunz (2008) in Salt Lake County, Utah found that individuals involved in the MHC program had new booking charges at a rate of 66.9 % in one year prior to their admission to the court. During their time in the program that rate dropped to

19.8 %, and then down to 18.2 % one year after they exited the MHC program. Allegheny County MHC in Pittsburgh, Pennsylvania also reported a reduction in recidivism among its participants. A 2009 report posted on their website indicated that 169 individuals graduated from their program between 2006 and 2008. The overall three-year recidivism rate among the program graduates was 14.5 % compared to 52.2 %, the current three-year rate for Allegheny County Jail inmates. Overall, that represents a 37.7 % rate of reduction. An earlier 2008 report by the RAND Corporation supports the 2009 positive results of the Allegheny County MHC program. That study by Ridgely and colleagues found that participants of the MHC program spent fewer days in jail than they would have had they been involved in the traditional criminal court. It was also found that court participants were connected to mental health programs at a higher rate when compared to individuals in the traditional jail system. Not only was the Allegheny County, Pittsburgh MHC found to be effective for the aforementioned reasons but the RAND researchers found it to be cost effective as well.

Only two of the non-peer reviewed seven studies discussed graduation from the MHC program as making a difference in successful outcomes. In the Salt Lake County, Utah MHC for instant, Van Vleet et al. (2008) found that graduation status was one of the strongest protective factors against recidivism. A similar finding was reported in the Palmer, Alaska MHC study. This study also described that after one year of being discharged from the MHC program, not one individual had an additional psychiatric hospitalization. Graduates of the MHC program had an overall recidivism rate of five percent and were the least likely to recidivate. Among those who did reoffend, Palmer County, Alaska program participants were less likely than the equivalent group to commit new felonies, or violent or drug-related crimes.

Few studies discussed the characteristics of their MHC participants. Of those that did, Salt Lake County, Utah reported that nearly 70 % of participants were male and nearly 90 % were Caucasian with a median age of 34.3 years old. It was also reported that the MHC participants had a long history of mental health problems and, criminal justice system involvement and were diagnosed with schizophrenia and/or bipolar disorder for an average of 8.3 years. Almost one quarter of participants had been homeless during their time in the MHC. This study also did a thorough job of reporting specifically what type of services MHC participants were accessing during their time in the program. The Allegheny County MHC also reported that the majority of program graduates were Caucasian males. The difference between their evaluation and the present quantitative analysis was that the participants were slightly older with an average age of 42 years and a median age of 44 years. The most common diagnosis within the Allegheny County MHC program was depression followed by bipolar disorder and then schizophrenia. In addition, a little over half of the Allegheny County MHC graduates had a dual diagnosis. Two out of seven studies reporting Caucasian males as their primary program participants hardly represents a “theme” but it may indicate a trend similar to what was found in the present quantitative study.

I. SUMMARY

This chapter describes a combination of methods that were utilized to access both peer-reviewed and non-peer-reviewed MHC studies. One hundred and twenty nine e-mails were sent to MHCs operating across the United States. A comprehensive and thorough literature search was also conducted to gather existing MHC evaluations. This dual search approach generated a total of 23 studies to be included in this analysis. Each study was assessed utilizing three separate methodological quality rating scales: the MQRS, the MSSM and a Campbell

Collaboration systematic drug court protocol developed by Wilson, Mitchell, and Mackenzie (2006). Also described in this chapter was a summary of the studies that were excluded in the meta-analysis. Despite not having the necessary quantitative information, these studies included valuable information about MHCs. Most of the studies reported a reduction in the outcome of recidivism and described MHC participants generally as being in their mid-30s, mostly male and Caucasian. The next chapter describes the statistical results of the quantitative analysis including the stratified analysis and moderation analysis.

IV. RESULTS

A. DESCRIPTION OF STUDIES

This chapter begins with a description of the studies including types of studies, number of participants, characteristics of study participants, funding sources, MQRS scores and other factors related to study quality. The remaining section is the summary presentation of the main effect size, stratified, and moderation analytic results.

Table 2 presents descriptive information regarding studies contained in the meta-analysis. Twenty-three studies were examined in total. Thirteen were gathered from traditional academic sources including journals and dissertations. Ten studies were published in other non-peer reviewed sources. Because nearly half the studies are from non-traditional academic sources this analysis may have significantly reduced the possibility of publication bias (Wilson, Mitchell, & Mackenzie, 2006.)

Table 2. *Characteristics of Studies Included in Meta-Analysis (N = 23)*

<i>Characteristic</i>	<i>Frequency (%)</i>
Publication type	
Journal article/dissertation	13 (57)
Not published in journal	10 (43)
Publication year	
2007-2008	4 (17)
2005-2006	10 (43)
2003-2004	7 (30)
2001-2002	2 (9)
Before 2000	0 (0)
U.S. samples	23 (100)
Age	
Over 17	23 (100)
Methodological Attributes*	
Considered replicable	22 (100)
Reported baseline characteristics	18 (81)
Quality control	19 (86)

Outcome Follow-up length	
Less than 6 months	2 (9)
6 to 11 months	3 (17)
12 months or longer	17 (77)
Follow-up rate	
Less than 70% completion	1 (5)
70 to 84.9% completion	6 (27)
85-100% completion	15 (68)
Collateral verification	0 (100)
Objective verification	21 (95)
Dropouts enumerated	20 (91)
Attrition delineated	20 (91)
Single site	23 (100)
Study Design	
Experimental	3 (13)
Quasi-experimental	17 (73)
One group	3 (14)

*Teller, Ritter, Rodriguez, Munetz, & Gil, 2004 could not be scored for methodological quality because of missing data and thus was not included as part of the methodological quality section.

Table 2 also shows that almost one half of the studies were published between 2005 and 2006. Nine studies were published between 2000 and 2004 and none were written prior to the year 2000. This may be because MHCs did not exist prior to the late 1980's and it does not appear that any studies were conducted before the year 2000. Only 17 % of the studies were published in 2007 and 2008. Currently, it is estimated that there are approximately 150 MHCs in existence and more being planned (Thompson, Osher, & Tomasini-Joshi, 2007). Twenty-three studies therefore only represent a small percentage (approximately 15%) of existing mental health courts throughout the United States. Table 2 also shows that 100 % of the studies were conducted in the United States, were single site designs (as opposed to using multisite locations) and involved participants over the age of 17 years old. One study (Sneed, 2006) that was included in this analysis had participants under the age of 18 (none younger than 17). This study was included because a majority of the study participants were 18 and over. It should be noted

that there are a small number of MHCs across the United States targeted for individuals under the age of 18; however, those studies were not included in this analysis.

With regard to methodological quality, Table 2 indicates that nearly all of the studies are considered replicable. That is, each study contained enough information to be reproduced by another set of researchers with the exception of Teller et al., 2004. This study was unable to be fully assessed and scored for methodological quality because it was missing a considerable amount of information. A majority of the studies reported baseline characteristics of their study participants. Nearly 80 % of the studies reported being able to follow-up with study participants for 12 months or longer. Relatedly, a majority of the studies reported relatively good follow-up rates. Nearly 70 % of the studies maintained an 85 to 100 % follow-up rate. No study included in this analysis offered any collateral verification although the majority reported utilizing some form of objective verifications for their outcome variables such as administration records or another data file. Table 1 also shows that a majority of the studies contained with this meta-analysis were quasi-experimental (73%). Three studies were experimental and three studies were correlational designs.

B. FUNDING SOURCES

Seventeen (74%) studies did not report funding or any information related to financial disclosure. Two studies (Boothroyd et al., 2003; Boothroyd et al., 2005) reported being supported by grants in part from the John D. and Catherine T. MacArthur foundation in tandem with the Florida legislator. One study (Ferguson, 2008) was funded by The Alaskan Mental Health Trust Authority. Another study (McNeil & Binder, 2007) reported being supported by grants from University of California, San Francisco, the Academic Senate Committee on Research and the San Francisco Mayor's Office on Disability. Teller et al., 2004 reported that

their study was funded by the Ohio Department of Mental Health and Ohio Criminal Justice Services.

C. STUDY PARTICIPANT CHARACTERISTICS

Table 3 below presents descriptive information regarding the age, race, and gender of MHC study participants in addition to the number of persons involved in those studies. It was difficult to calculate the exact number of overall study participants contained in this analysis. This is because three studies (Trupin, Richards, Lucenko, & Wood, 2000; Trupin, Richards, Wertheimer, & Bruschi, 2001; Bess, 2004) recorded different *n*'s for different outcomes at various time points. Trupin et al. (2000) never had any more than 102 participants in their study at any given time. Trupin et al. (2001) never had more than 101 participants and Bess (2004) did not have more than 82 participants no matter which outcome or time point presented.

Among studies that provided the necessary detail, t-tests and chi-squares were computed to determine whether there were significant differences on age and gender between the groups. With regard to age, there were significant differences between the MHC and control group in the McNeil and Binder (2007) study as well as in the Neiswender (2005) study. The remaining studies were either found to be nonsignificant or did not report the correct numeric information to calculate t-tests. With regard to gender, only one study found significant differences between the MHC group and control group. Specifically, there were a significantly higher proportion of African Americans in the control group than in the MHC group (Neiswender, 2005).

Table 3. *Study Participant Characteristics (N=23)*

Author and Year	N*	Age**		Gender**		Race**
		MHC	Control	MHC	Control	
Bess, 2004	41-72***	32.20 (SD=9.70)	35.50 (SD= 11.2)	Aprx. 50/50	Aprx. 50/50	> 50% White
Boothroyd, et al. 2003	192	38 (SD=10.5)	38 (SD= 9.6)	68.10%	41.20%	> 50% White
Boothroyd, et al. 2005	121	36.4 (SD=10.4)	37.7 (SD=9.6)	68%	60%	> 50% White
Christy et al., 2005	211	N/G	N/G	66%	60%	> 50% White
Cosden et al., 2003	150	N/G	N/G	Aprx. 50/50	Aprx. 50/50	> 50% White
Cosden, et al., 2005	235	N/G	N/G	49%	52%	> 50% White
Eckberg, 2006	191	N/G	N/G	59%	N/A	> 50% White
Ferguson, et al. 2008	436	Most over 40	Most over 40	> 50% male	> 50% male	> 50% White
Herinckx, et al., 2005	368	35 (SD =11)	N/G	56%	N/A	> 50% AA
Linhorst & Chustack, 2008	415	36	36*	36%****		> 50% White
McNiel & Binder, 2007	6745	37.3 (SD=11)	37.9 (SD=11)	74%	78%	> 50% White
Moore & Hiday, 2006	265	36	30	68%	73%	> 50% White
Morin, 2004	72-102***	39.80 (SD =13.7)	29.04 (SD =9.1)	75%	N/G	> 50% White
Neiswender, 2005	194	40	44	70%	75%	Aprx. 50% White and 50% AA
O'Keefe, 2006	37	N/G	N/A	> 50% male	N/A	> 50% AA
Boulden et al., 2006	423	N/G	N/G	N/G	N/G	> 50% White
Boulden et al., 2007	438	N/G	N/G	N/G	N/G	> 50% White
		1/3 btw 17&25; 44.5% btw 26&45				
Sneed, et al., 2006	94	26&45		Aprx. 50/50	N/A	> 50% White
Teller, et al., 2004	87	37	N/A	> 50% male	N/A	> 50% White
Trupin & Richards, 2003 (K)	77	37.6 (SD =10.95)	N/G	> 50% male	> 50% male	> 50% White
Trupin & Richards, 2003 (S)	147	38.57 (SD =10.95)	N/G	> 50% male	> 50% male	> 50% White
Trupin et al., 2001	49-147	Varies***	N/G	74%	N/A	> 50% White
Trupin, et al., 2000	41-246***	38	38	> 50% male	> 50% male	> 50% White

Note: *denotes sample size tallies at the end of each study **denotes tallies based on participant baseline characteristics***denotes that sample size could not be recorded as a singular “total” number because different outcomes had a different number of study participants at different time points****denotes there were approximately 36% of males in all three groups associated with the Linhorst & Chustack (2008) study, MHC=mental health court; Aprx.=Approximately, AA=African Americans, btw=between, N/G=not given, N/A=not applicable, , *SD*=standard deviation, % in gender column=percentage of males contained within each study.

It is also important to note that several studies in this analysis were conducted by the same authors but in different years. For instance, two studies from Cosden and his colleagues are included in this analysis (2003 and 2005). The 2003 study contains data regarding 150 individuals who participated in a mental health court. The 2005 study contains data regarding 235 individuals who also participated in a mental health court trial. The current analysis assumes that the individuals from the Cosden et al. 2003 study are not the same as those who participated in the later trial. Neither Cosden et al. article stated whether their participants were the same, and thus it was assumed for purposes of this study that they were different individuals who participated in both studies. A similar situation occurred with other studies. Boothroyd et al. published two articles about MHC participants in 2003 ($n=192$) and 2005 ($n=121$). Boulden et al. published data related to the Jackson County, Missouri MHC in 2006 ($n=423$) and in 2007 ($n=438$). Given the foregoing data and as shown in Table 3, it can be estimated that this quantitative review most likely recorded information regarding approximately 11,363 ($M=494.04$, $SD=1368.57$, $Mdn=192.00$) MHC study participants with a range of 37 to 6745. A conservative estimate of study participants yielded 11,029 ($M=479.52$, $SD=1372.60$, $Mdn=191.00$) MHC study participants with a range of 37 to 6745.

Table 3 also shows MHC participants in this analysis study tended to be white males in their mid-thirties. Overall, there was very little variability with regard to age, sex and race. This finding is similar though slightly different from a report produced by Steadman and Redlich in 2006 of seven MHCs. Their 2006 report showed that their sample of MHC referrals were more likely to be older, Caucasian females and not males as was found in this study. It should also be noted that of the seven MHCs studied by Steadman and Redlich in 2006, only one (Brooklyn, New York) of those were likely included in this meta-analysis. O’Keefe and colleagues produced

a 2006 report of the Brooklyn MHC that was included in the current analysis but the other six mentioned in the Steadman and Redlich report, to the best of this author's knowledge, have yet to publish peer-reviewed, independent evaluations of their courts.

D. CLINICAL DIAGNOSES OF STUDY PARTICIPANTS

Sixteen studies (70%) reported information regarding the diagnosis of MHC participants but much of that data was incomplete and nondescriptive. Only four studies (Bess, 2004; Cosden et al., 2003; Cosden et al., 2005; McNeil & Binder, 2007) reported the diagnosis for both the treatment (i.e. MHC participants) and the comparison group. Among those four studies, two studies (Cosden, et al., 2003; McNeil & Binder, 2007) reported that a majority of individuals had a "dual diagnosis." This indicated that over half of the participants had an SMI and a substance related disorder simultaneously. The top three primary diagnoses of the study participants among these four studies were mood disorders such as major depression and bipolar disorder as well as schizophrenia. This was generally true for the remainder of the studies that did not report specific diagnoses for both the treatment and comparison groups. Four studies (Bess, 2004; McNeil & Binder, 2007; Morin, 2004; Sneed, 2006) reported MHC study participants as having been diagnosed with personality disorders, anxiety disorders, and learning and developmental disorders, but usually those diagnoses represented less than one quarter of the total participants.

In addition, most studies did not detail the manner in which the study participants were diagnosed. Some studies reported that a diagnosis was given to a study participant prior to their entrance into the study. For instance, some authors reported that MHC participants were diagnosed by jail psychiatrists and those diagnoses were used to gain entrance into the study. Other studies reported that a diagnosis for participants was gained through an examination of historical mental health records. Because there was so little information offered with regard to

the clinical diagnostic process throughout the 23 studies, it is difficult to determine the accuracy of the study participants' diagnosis.

E. NATURE OF OPERATION AND SERVICES

Unfortunately, many of the studies contained in this analysis did not report specific details about how the courts function and operate on a daily basis. Nor did very many studies report the nature of the court services. A large part of how a court operates is related to what mental health services the participants are referred to and have access to. In fact, it can be argued that how well MHC participants fare within a program is largely dependent on the nature of mental health services facilitated by the MHC. Approximately five studies (Bess, 2004; Cosden et al., 2003; Cosden et al., 2005; Ferguson, Hornby, & Zeller, 2008; O'Keefe, 2006) reported more detailed information with regard to the courts operation procedures. Among the studies that did not report details with regard to court operation, it would have been helpful if the study authors had reported details about what type of mental health services the courts referred their study participants to. In addition, it would have also been helpful to know whether those services were offered in the community, how available they were (i.e. were participants waitlisted?), as well as what the specific nature of those services were. For instance, were participants offered counseling services? What about substance abuse interventions, group therapies, individual therapies (or both) case managers, intensive case managers, or housing services? Since that and other related information was not reported within the majority of studies it is difficult to generalize how an MHC functions and whether there are similarities between them.

F. THEORETICAL DISCUSSION

Also missing from many of the studies was the theoretical basis and underlying explanation for “why” MHCs should work. Seven studies presented mostly short discussions related to why the MHC should operate in a particular manner (Boothroyd et al., 2003; Boothroyd et al., 2005; Cosden, et al., 2003; Herinckx, et al., 2005; Trupin & Richards, 2003; Neiusender, 2005; Sneed, 2006). Five studies (Boothroyd et al., 2003; Cosden, et al., 2003; Herinckx, et al., 2005; Trupin et al., 2000; Neiusender, 2005) included a discussion specifically related to therapeutic jurisprudence, although four of those studies offered only a brief mention of this theoretical paradigm. Neiusender, in his 2005 dissertation, offered a relatively extensive discussion of therapeutic jurisprudence and how it applies to MHCs. Trupin and colleagues, (2001) had a fairly lengthy discussion of their MHC philosophy. One study (Trupin & Richards, 2003) discussed in a few brief paragraphs the ecological jurisprudence perspective and how it relates to MHCs but that discussion was far from comprehensive. Sneed (2006) provided a summary of the philosophy behind the operation of MHCs but like most of the other studies, it was very brief and not comprehensive. Overall, a comprehensive discussion representing the theoretical underpinnings of MHCs was largely absent.

G. MQRS SCORES AND TREATMENT DURATION

The MQRS scores were relatively high with the exception of the one study that could not be scored (Teller et al., 2004). The range across the 22 (minus Teller et al., 2004) studies was between 9 and 14. The mean score across the studies was 11.8 ($SD=1.5$). Eleven studies did not clearly identify the length of time participants were involved in the MHC intervention. Among the remaining 12 studies most of the interventions were lengthy, spanning 26 weeks (Moore & Hiday, 2006) to 107 weeks for some participants in the Trupin et al., 2000 study.

1. Measures

Different types of measurement scales were used to assess MHC outcomes. Almost all of the existing MHC evaluations used either established, psychometrically sound measures or counts of information (i.e. bookings, convictions, arrests, etc.) gathered from administrative data. Even though the measures utilized within the individual studies are considered established measures, no study reported specific measurement reliability scores.

More specifically, six studies (Bess, 2004; Boothroyd, et al. 2003; Boothroyd, et al. 2005; Christy et al., 2005; Cosden et al., 2003; Cosden et al., 2005) utilized established measures. The most common established measures included the Lehman Quality of Life Scale-short form (QOL-SF) to assess life satisfaction; the Behavior and Symptom Identification Scale-32 (BASIC-32) and the Brief Psychiatric Rating Scale (BPRS) or BPRS-A (anchored version) for evaluating psychological symptoms or distress; the Addiction Severity Index (ASI) for the assessment of drug and alcohol use; the Health of the Nation Outcome Scale (HoNOS) for the evaluation of psychosocial functioning (although this outcome was not included in the final meta-analysis because there were not enough data to calculate an effect size); and finally, the Global Assessment of Functioning (GAF), a psychiatric barometer used to assess an individual's level of psychiatric functioning and symptom levels. One study (Christy, et al., 2005) collected self-reported data on acts of aggression and violent acts (with the help of a modified version of the unpublished MacArthur Community Violence Instrument). Five studies (Trupin et al., 2000; Trupin et al., 2001; Trupin & Richards, 2003 (for both the KCMHC and the SMHC); Teller et al., 2004; Sneed, 2006) did not detail any measurement information. Please see appendix A for a shorter, tabled version of the information regarding measures utilized in primary studies.

H. EFFECT SIZE ANALYSIS

1. Overall Aggregated Results

A total of 129 outcomes were coded for the 23 independent MHC studies. All but four studies had multiple outcomes that were recorded. Given that most studies had multiple outcomes measures it is likely that these studies lack statistical independence. That is, multiple effect sizes drawn from the same study are likely to be correlated and distort the meta-analysis results (Cooper, 1998). To avoid the lack of statistical interdependence among studies, a multilevel modeling was performed. The CMA 2.0 program has this multilevel modeling feature built into the program. This procedure is less than optimal but it minimizes violations of assumptions about the independence of effect size data (Cooper, 1998). Outcomes were coded so that generally negative effect size values reflect a positive effect (i.e. recidivism decreased). Positive effect size values for outcomes such as quality of life also reflect a beneficial increase in those specific outcomes but generally a positive score is indicative of a non-beneficial effect. There are a few exceptions to these rules that will be explained in full detail where appropriate. Table 4 summarizes below the effect size analysis.

Table 4. *Summary of All Effect Size Calculations*

Analysis	Type of Outcomes	ES	CI	<i>z</i>	<i>p</i>	<i>Q</i>	<i>df</i>	<i>I</i> ²
Overall RE Mean	All	-0.24	-0.38, -0.09	3.26	0.001	163.6*	22	86.5%
	Recidivism	-0.52	-0.68, -0.36	-6.23	0.001	129.4*	17	86.8%
	MH/Clinical				NS			
	QOL	0.28	0.01, -0.55	2.08	0.037	0.297	1	0.00%
Stratified	Substance Abuse				NS			
	Experimental				NS			
	Quasi-experimental	-0.32	-0.49, -0.14	-0.36	0.001	130.7	17	87.7%
	Correlational				NS			
Recidivism Only	Significance test	-0.17	-0.29, -0.06	-3.06	0.002	6.05*	2	N/A
	Experimental				NS			
	Quasi-experimental	-0.58	-0.75, -0.41	-6.68	0.001	102.6*	14	86.3%
MH/Clinical Only	Correlational				NS			
	Experimental				NS			
Substance Abuse Only	Quasi-experimental	-0.14	-0.00, -0.29	-1.95	0.05	5.79	4	31%
	Experimental				NS			
QOL Only	Correlational				NS			
	Experimental	0.285	0.01- 0.55	2.08	0.037	0.297	1	0.00%
Peer-Reviewed Only	Peer reviewed	-0.14	-0.34, -0.00	2.01	0.009	74.0*	12	83.7%
	Non-peer reviewed	-0.31	-0.55, -0.07	2.61	0.009	67.2*	9	86.6%
	Significance test	-0.22	-0.37, -0.08	3.16	0.002	0.825	1	N/A
Recidivism Only	Peer reviewed	-0.55	-0.80, -0.31	4.46	0.001	77.3*	9	89.6%
	Non-peer reviewed	-0.47	-0.70, -0.23	3.91	0.001	53.8*	8	85.1%
MH/Clinical Only	Peer reviewed				NS			
	Non-peer reviewed				NS			
Substance Abuse Only	Non-peer reviewed				NS			

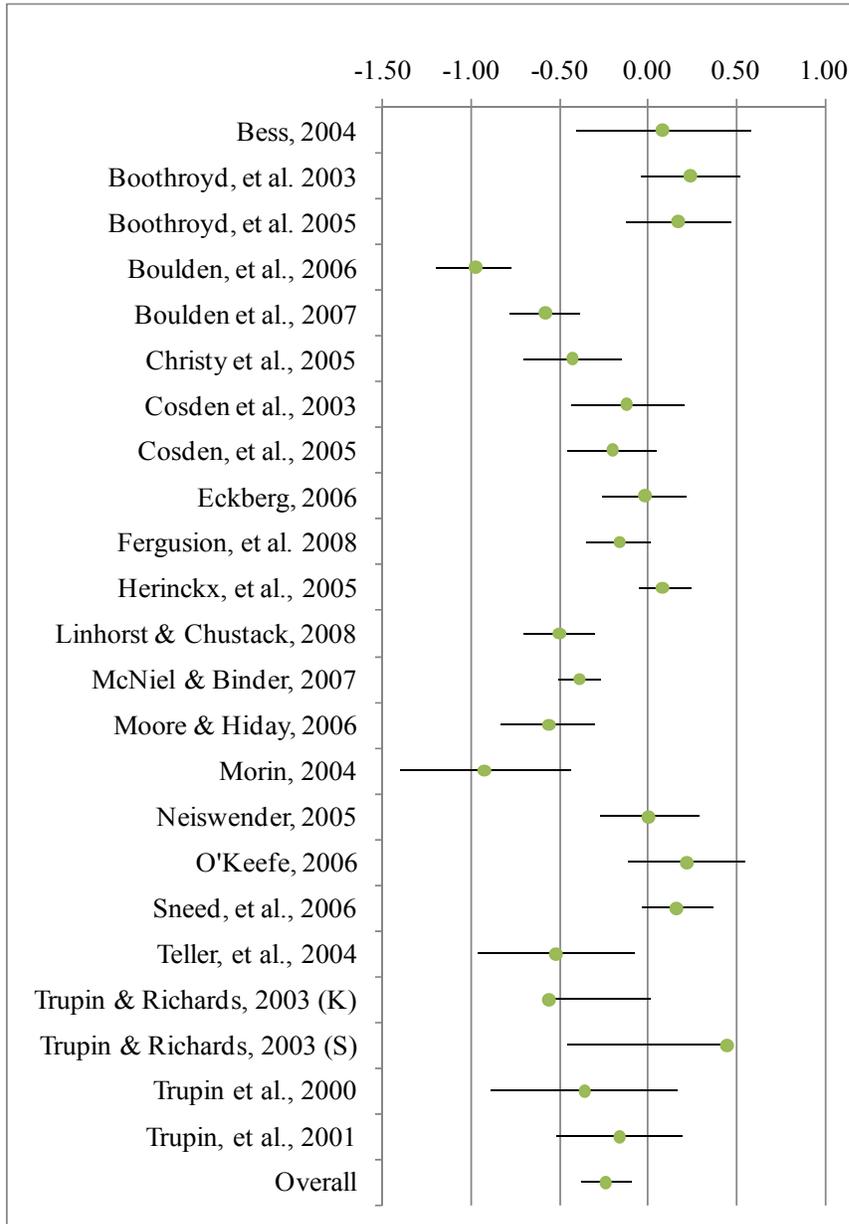
Moderator	High Quality	-0.15	-0.30, -0.01	-2.10	0.03	64.7*	13	79.9%
	Low Quality	-0.39	-0.71, -0.07	-2.42	0.01	91.3*	8	91.2%
	Significance test	-0.19	-0.33, -0.06	-2.91	0.004	1.78	1	N/A

Note: *denotes heterogeneity test was significant, ES=mean effect size, CI=confidence interval, z = z value for effect size, p =p value for effect size, Q =heterogeneity Q -value, df =degrees of freedom associated with Q , I^2 =I-squared associated with Q , N/A=not available, NS=Not significant

The overall mean effect size using the random effects model for all of the outcomes was (Hedge's g) $-.24$, (95% CI $-.38, -.09$), $z=-3.26$, $p<.001$. The statistical test for heterogeneity was highly significant ($Q=163.65$, $df=22$, $p<.001$, $I^2=86.5$). This result indicates that there was substantial variance among the effects among the studies. I-squared is very high, indicating that nearly 87 % of the observed variance was the result of real variance between the effect sizes (Borenstein, Hedges, Higgins and Rothstein, 2009). Only a small percentage, about 13 %, was thought to be result of random error (Borenstein et al., 2009).

Table 5 depicts these results below. According to Cohen's effect size guidelines, a Hedges's g of $-.24$ would be characterized as slightly larger than a small effect (Cohen, 1988).

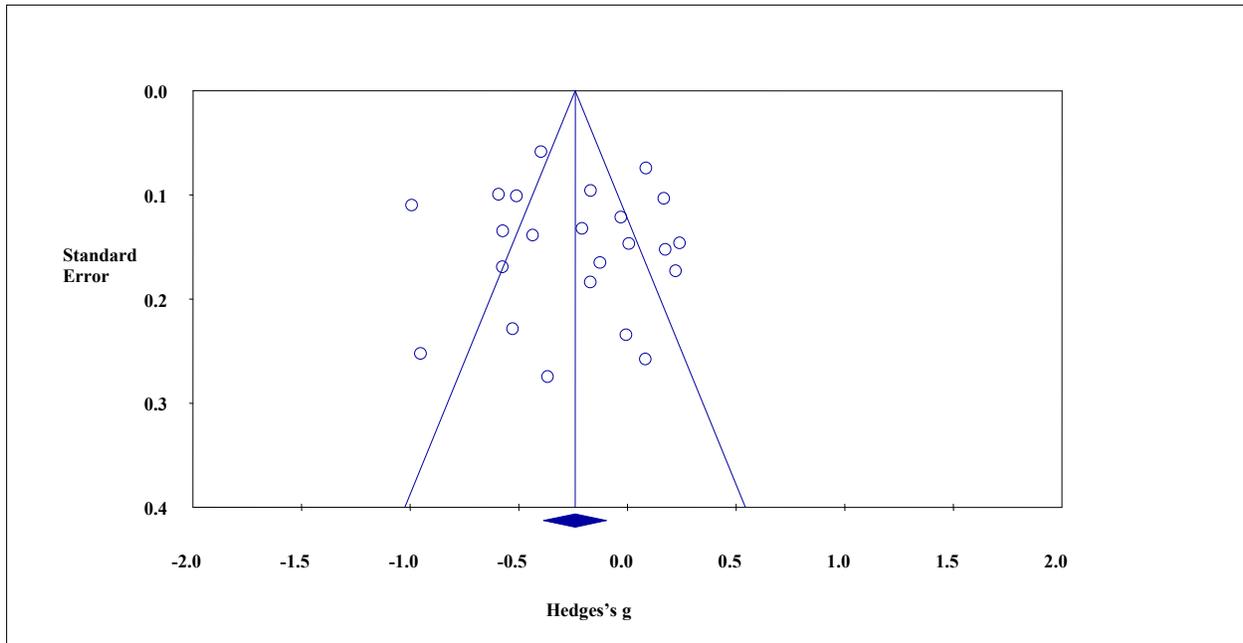
Table 5. All Outcomes Showing Confidence Intervals and Hedges's *g* Mean (*n*=23)



To assess publication bias, a fail-safe *N* was computed. The fail-safe *N* result was 447. This means that 447 “no effect” studies would need to be located and included in this analysis to exceed alpha level .05. Given this high number publication bias is very unlikely. A visual inspection of the funnel plot shows a similar result. If a publication bias is not present the forest

plot is symmetrical (Little, Corcoran, Pillai, 2008). As shown in Figure 2 below the forest plot is basically symmetrical.

Figure 2. *Funnel Plot of the Standard Error by Effect Size Hedges's g for All MHC Outcomes*

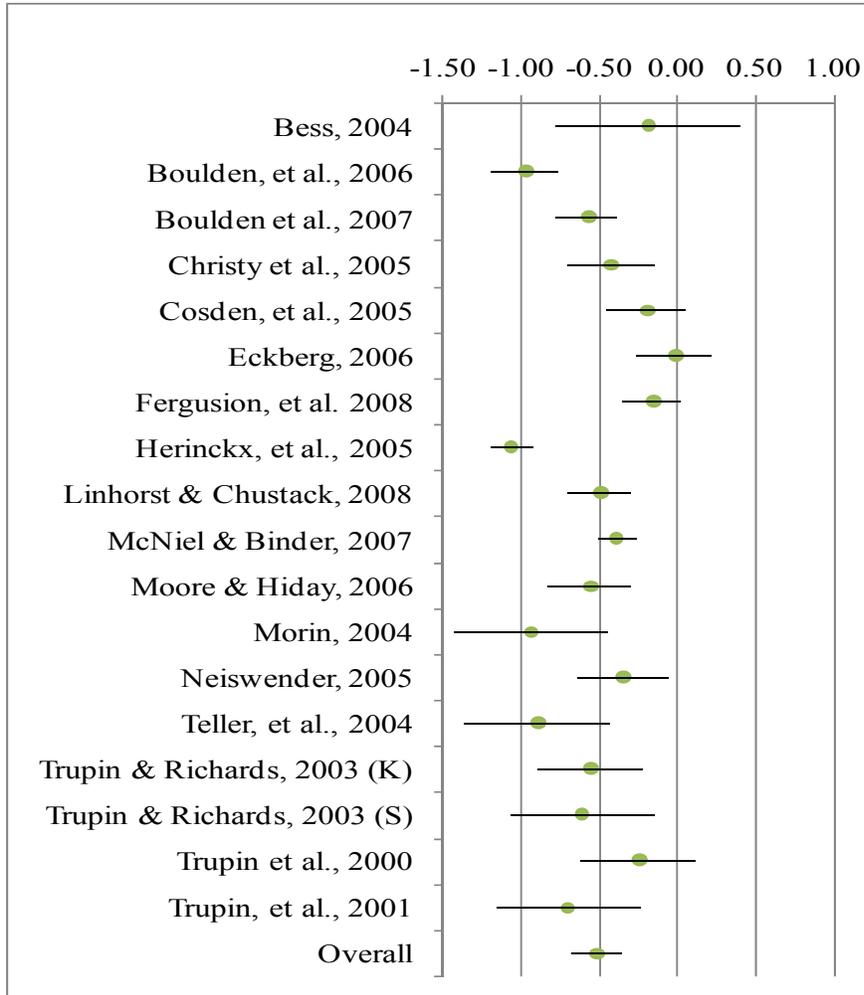


2. Recidivism Outcomes

The reporting on an overall effect size result may not be as meaningful until the outcomes have been broken down into meaningful subcategories. Recidivism outcomes are an important subcategory. Eighteen studies (78%) contained recidivism outcomes. In total, there were 62 recidivism outcomes. Some examples of outcomes that were categorized as “recidivism” include rearrest, number of bookings, booking rate, any new charge, jail days and days incarcerated. Table 3 shows that the overall mean effect size using the random effects model for recidivism outcomes was -0.52 , (95% CI -0.68 - -0.36), $z = -6.23$, $p < .001$. Table 6 below shows these results in the chart below. According to Cohen’s effect size guidelines (Cohen, 1988), this finding represents a moderately-sized reduction in recidivism rates across the majority of studies. The statistical test for heterogeneity was highly significant ($Q = 129.40$, $df = 17$, $p < .001$, $I^2 = 86.8\%$).

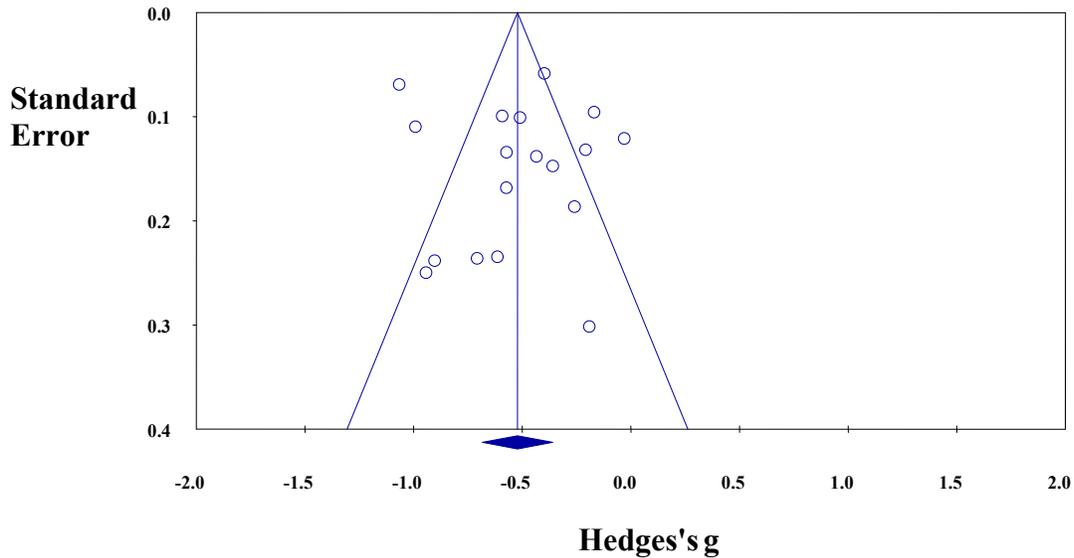
This result indicates that there was substantial variance among the effects among the studies. I^2 squared was very high indicating that nearly 87 % of the observed variance was the result of real variance between the effect sizes (Borenstein, Hedges, Higgins and Rothstein, 2009). Only a small percentage, about 13 %, was thought to be result of random error (Borenstein et al., 2009).

Table 6. *Recidivism Outcomes Showing Confidence Intervals and Hedges's g Mean (n=18)*



A fail-safe N of 1386 was computed for the 62 recidivism outcomes. This indicates that a publication bias is unlikely to exist. The funnel plot indicates this as well. Figure 3 depicts a relatively symmetrical plot.

Figure 3. *Funnel Plot of the Standard Error by Effect Size Hedges's g For All Recidivism Outcomes.*



3. Mental Health/Clinical, Quality of Life and Substance Abuse Outcomes

Eleven studies contained a total of 35 mental health related outcomes. Examples of mental health or clinical outcomes include depression, anxiety, and inpatient treatment days. Table 2 shows that the overall mean effect size using the random effects model was not significant therefore having no effect on mental health related outcomes. Only two studies (Cosden et al., 2003; Bess, 2004) contained a total of 10 quality of life outcomes. The overall mean effect size using the random effects model for quality of outcomes was .285, (95% CI .01-.55), $z = -2.08$, $p = .037$. The statistical test for heterogeneity was not significant ($Q = .297$, $df = 1$, $p = .85$, $I^2 = 0.00\%$). This finding, though significant, is very unstable since it was computed from only a few studies. Neither a fail-safe N nor a funnel plot was produced for these outcomes. Lastly, four studies (Bess, 2004; Cosden et al., 2003; O'Keefe, 2006; Trupin et al., 2000)

contained a total of 11 substance abuse outcomes. The overall mean effect size using the random effects model for substance abuse outcomes was not significant. Neither a fail-safe N nor a funnel plot was produced for these outcomes.

4. Stratified Analysis Results

Stratified analyses by publication type classifications revealed that pooled results were nonsignificant for experimental studies, but that was not the case for quasi-experimental studies (Hedges's $g = -.32$, 95% CI = $-.49 - .14$ $z=-3.62$, $p<.001$). The statistical test for heterogeneity was significant for quasi-experimental studies ($Q=130.78$, $df=16$, $p<.001$, $I^2=87.7%$). The overall mean effect size using the random effects model for correlational studies was not significant. A test to determine whether experimental, quasi-experimental, or correlational studies were significantly different indicates that they are (Hedges's $g = -.178$ 95% CI = $-0.292 - .064$ $z=-3.055$ $p=.002$). The associated statistical test for heterogeneity was significant ($Q=6.061$, $df=2$, $p=.048$). Table 7 and Figure 4 depict the confidence intervals and mean Hedges's g for the quasi-experimental studies and the associated funnel plot, respectively. Experimental and correlational studies had too few results to plot a graph or to produce funnel plot. An informal inspection of the funnel plot for quasi-experimental studies resembles a symmetrical pattern. Formal tests indicate that quasi-experimental studies had a fail-safe N of 436. Therefore publication bias is not likely to be present among quasi-experimental studies.

Table 7. *Quasi-Experimental Studies Showing Confidence Intervals and Hedges's g Mean*

(*n=17*)

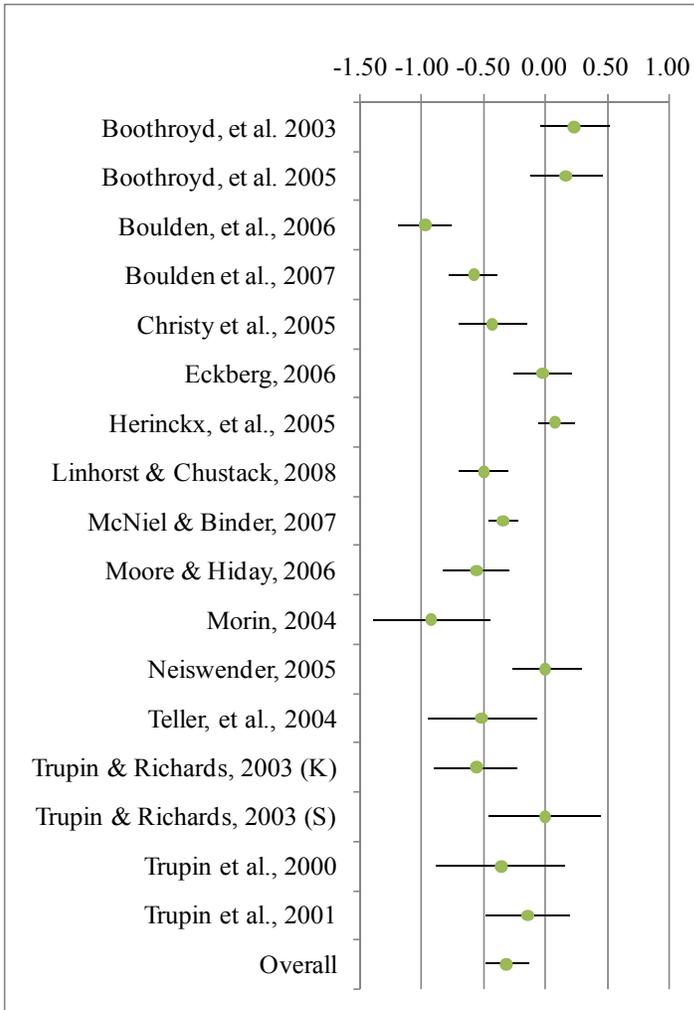
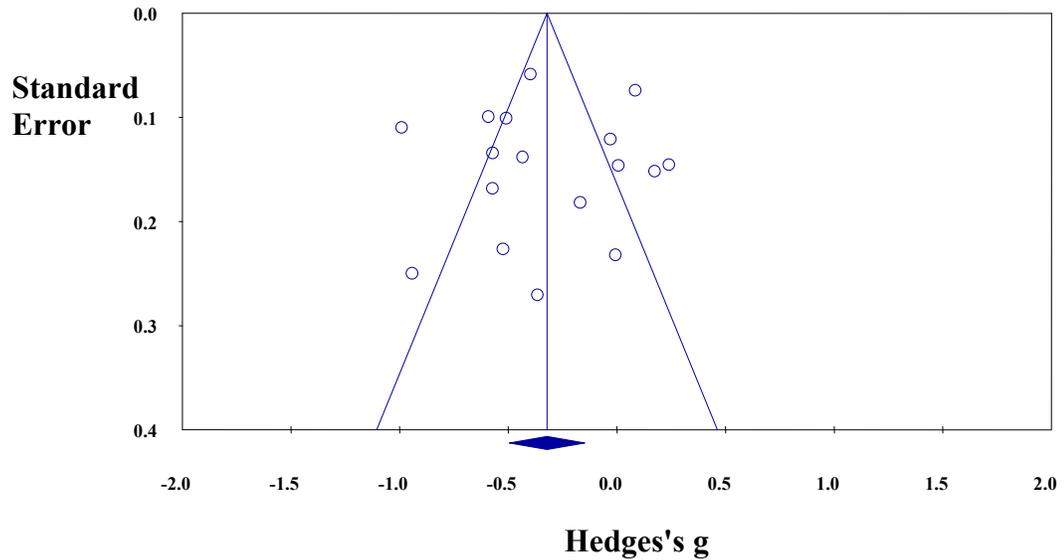
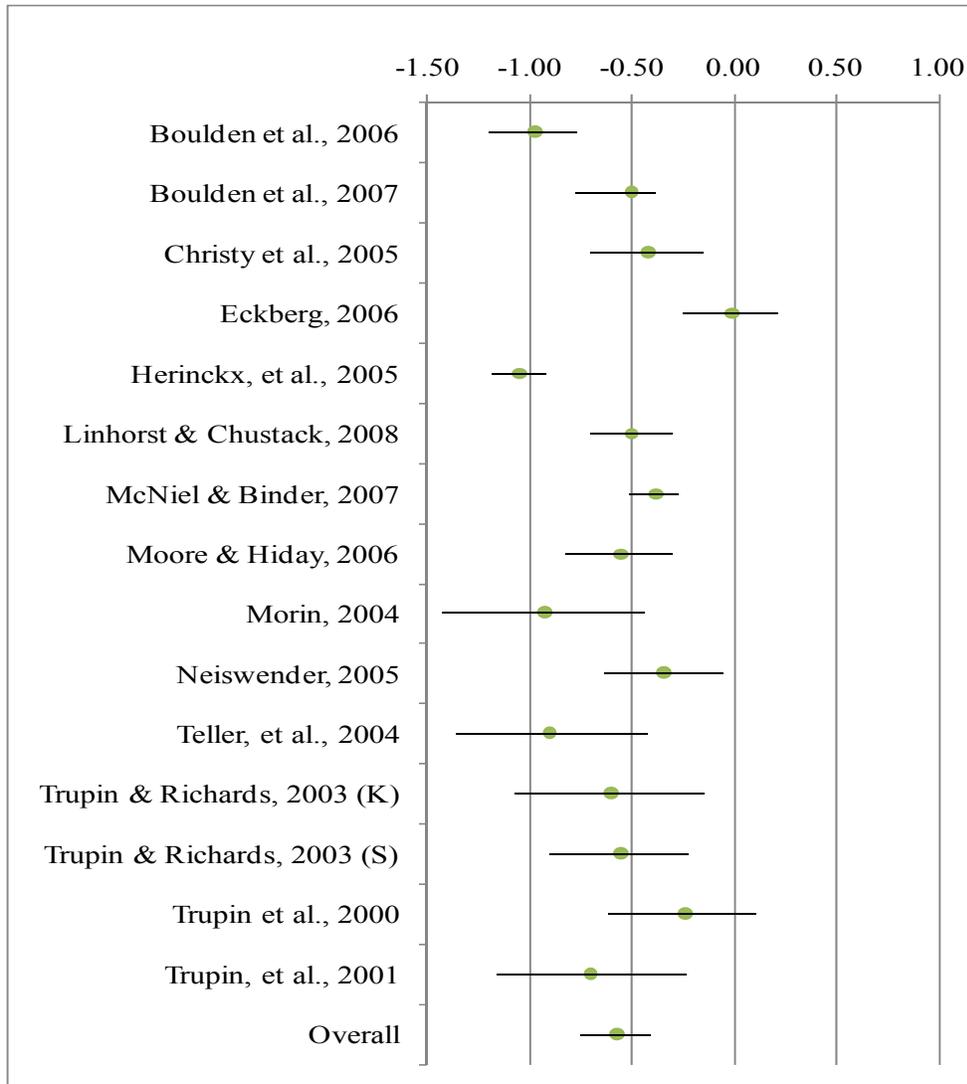


Figure 4. *Funnel Plot of the Standard Error by Effect Size Hedges's g for Quasi-experimental Studies.*



When recidivism outcomes were stratified by publication type, it was found that pooled results were not significant for experimental studies but significant for quasi-experimental studies (Hedges's $g = -0.58$, 95% CI = $-0.75 - -0.41$ $z = -6.68$, $p < .001$). The statistical test for heterogeneity was highly significant for recidivism outcomes among quasi-experimental recidivism ($Q = 102.60$, $df = 14$, $p < .001$, $I^2 = 86.3\%$). Only two studies (Bess, 2004; Cosden et al., 2005) and six total outcomes made up the group of experimental recidivism outcomes but that result was not significant. Table 8 depicts the confidence intervals and mean Hedges's g of the quasi-experimental recidivism outcomes graphically. Only one correlational study (Ferguson et al., 2008) contained one recidivism outcome (remanded to custody $g = -0.16$).

Table 8. *Quasi-experimental Studies Showing Confidence Intervals and Hedges's g Mean for Recidivism Outcomes only (n=15)*



When mental health outcomes were stratified by publication type, it was found that the experimental studies did not produce a significant result. Mental health outcomes among quasi-experimental studies were significant (Hedges's $g = .14$, 95% CI = $-.00 - .29$, $z = -1.95$, $p = .05$). The latter finding indicates that participants of MHCs had a small increase in their use of appropriate and useful mental health services. The associated heterogeneity tests were not

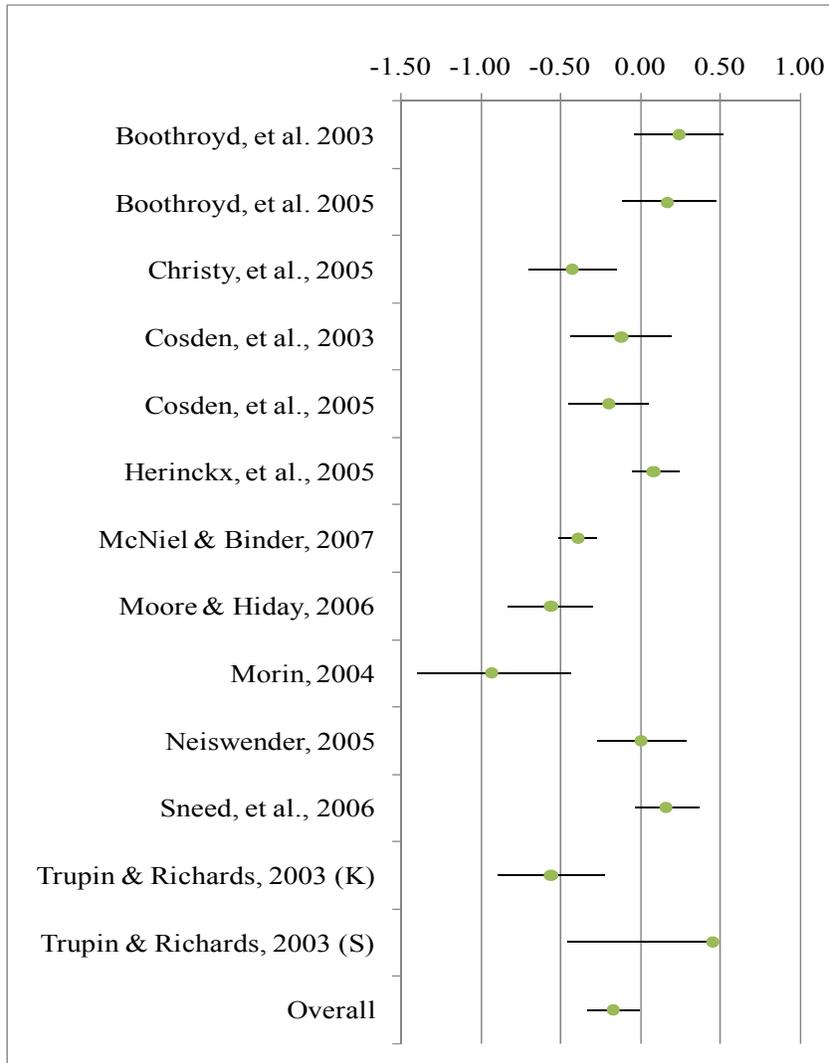
significant among quasi-experimental mental health outcomes ($Q=5.798$, $df=4$, $p=.215$, $I^2=31.0\%$).

The quality of life pooled effects among experimental studies was 0.285, (95% CI .01-.55), $z=-2.080$, $p=.037$) with no significant heterogeneity present ($Q=.297$, $df=1$, $p=.586$, $I^2=0.00\%$). Pooled effect sizes among experimental studies for substance abuse outcomes were not significant. There were no quality of life outcomes among the quasi-experimental outcomes and only a total of three substance abuse outcomes from the Trupin et al., 2000 study that were not pooled (readiness to change regarding alcohol and substance abuse problems average, current and highest on record .26, .48, .19, respectively). Among the correlational studies there were only a total of three studies containing eight outcomes. An overall pooled effect size for that group was not significant.

5. Studies Published in Peer Reviewed Versus Non-Peer Reviewed Sources

Studies were then divided and analyzed by whether they were published in peer reviewed sources or in non-peer reviewed sources. Thirteen studies (54 outcomes) were published in peer reviewed sources and yielded a considerably smaller pooled effect size (Hedges's $g = -.17$, 95% CI = 0.34 – -.004 $z=2.01$, $p=.044$) than the 10 studies (75 outcomes) published in non-peer reviewed sources (Hedges's $g = -.31$, 95% CI = -.55 – -.07 $z=2.613$, $p=.009$). A heterogeneity analysis found that both types of studies, those published in peer reviewed and non-peer reviewed sources, were highly significant ($Q= 74.00$, $df=12$, $p<.001$, $I^2=83.7\%$; $Q= 67.20$, $df=9$, $p<.001$, $I^2=86.6\%$, respectively). Tables 9 and 10 display these two results separately. A test to determine whether peer reviewed studies were significantly different than non-peer reviewed studies indicates that they are (Hedges's $g = -.22$, 95% CI = -.37 – .08 $z=-3.165$ $p=.002$). The associated statistical test for heterogeneity was not significant ($Q=.825$, $df=1$, $p=.364$).

Table 9. *Studies Published in Peer Reviewed Sources Showing Confidence Intervals and Hedges's g Mean (n=13)*



Studies published in peer reviewed outlets had a fail-safe N of 62. Figure 4 depicts this finding in a funnel plot. The plot does appear to be relatively symmetrical.

Figure 5: *Funnel Plot of the Standard Error by Effect Size Hedges's g for Peer Reviewed Studies.*

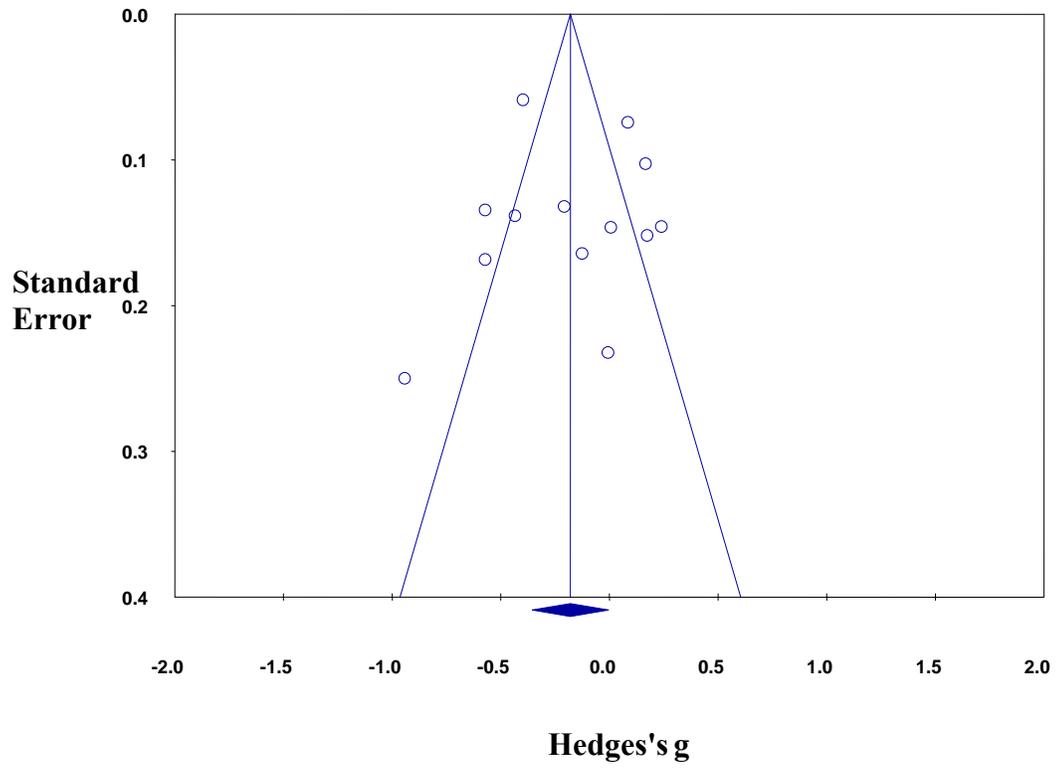
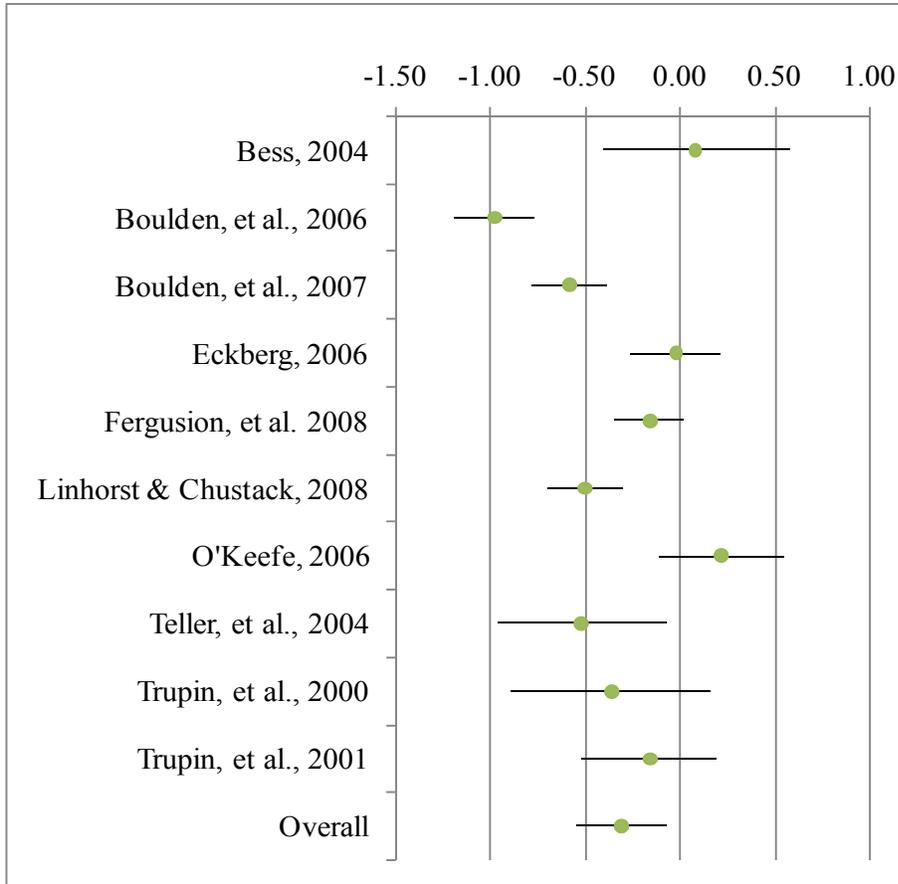
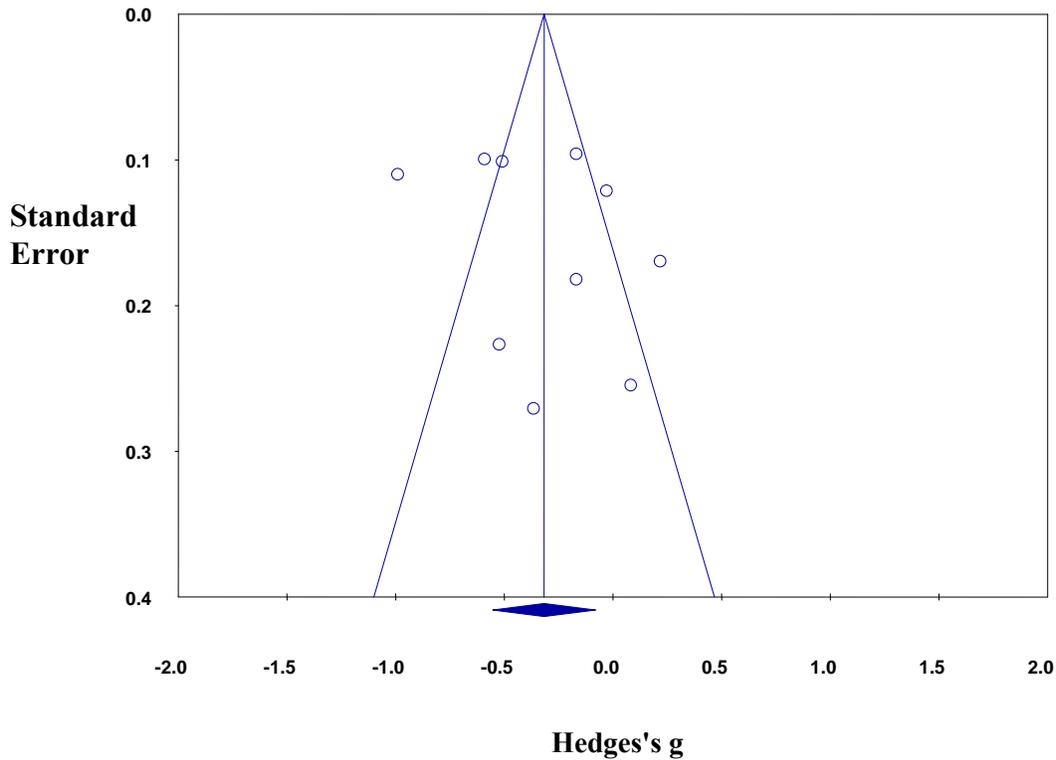


Table 10. *Studies Published in Non-peer reviewed Sources Showing Confidence Intervals and Hedges's g Mean (n=10)*



Non-peer reviewed studies published had a fail-safe N of 150. Figure 6 depicts this finding in a funnel plot. The plot does appear to be somewhat symmetrical.

Figure 6: *Funnel Plot of the Standard Error by Effect Size Hedges's g for Non-peer reviewed Studies*



Nine of the 13 studies (69%) published in peer reviewed sources reported recidivism outcomes (n=29). Nine of the 10 (90%) non-peer reviewed studies reported recidivism outcomes (n=33). The findings regarding recidivism were similar among studies in both groups though studies published in peer reviewed sources had a higher pooled effect size (Hedges's $g = -.55$, 95% CI = $-.80 - -.31$ $z=4.46$, $p<0.001$) than non-peer reviewed evaluations (Hedges's $g = -.47$, 95% CI = $-.70 - -.23$ $z=3.91$, $p<.001$). A heterogeneity analysis of recidivism outcomes found that both types of studies, those published in peer reviewed and those non- peer reviewed, were highly significant ($Q= 77.13$, $df=9$, $p<.001$, $I^2=89.6\%$; $Q= 53.88$, $df=8$, $p<.001$, $I^2=85.1\%$,

respectively). Studies published in peer reviewed outlets had a fail-safe N of 452. Non-peer reviewed studies had a fail-safe N of 229.

Among peer reviewed studies there were six studies reporting on a total of 16 mental health outcomes. Nine of the ten non-peer reviewed studies yielded 19 mental health related outcomes. With regard to these outcomes neither type of study, peer reviewed or non-peer reviewed, yielded significant results. The same was true of non-peer reviewed substance abuse outcomes. Studies among the peer reviewed sources had a total of only two substance abuse outcomes (Addiction Severity Index (ASI) -.28, (ASI): Alcohol only -.04 (Cosden et al., 2003). Lastly, there was only one quality of life outcome (Lehman quality of life .23) reported among the studies published in the peer reviewed sources (Cosden et al., 2003) and nine from the non-peer reviewed sources, and all were from the Bess (2004) study.

6. Moderation Analysis Results

The results of this meta-analysis show that generally there was a high degree of heterogeneity among trials. Traditionally, a meta-analyst has several options that he or she can utilize to deal with existing heterogeneity such as using a random effects model or stratifying the studies into homogeneous groups and estimating the pooled effects using a fixed effects model (Morton, Adams, Suttrop, & Shekelle, 2004). Meta-regression is another method. A meta-regression can be linear or logistic, uses the study as the unit of analysis and uses predictors that are study level such as age, sex or other study variables that may help explain the variation (Morton, Adams, Suttrop, & Shekelle, 2004). For the current meta-analytic study a random effects model was chosen as an attempt to deal with some of the heterogeneity. Meta-regression, however, was not possible at this time for two reasons (1) there was little variability with regard to sex, race and age to explore these potential moderators; and (2) most studies did not provide

enough detail about their court processes to thoroughly explore the potential sources of heterogeneity. Study quality was one possible moderator that could be explored in this analysis. That result of this analysis is described below.

Fourteen studies were categorized as “high quality” and nine as “low quality.” Generally most of the studies published in peer reviewed sources such as journals were deemed higher in quality than studies not published in traditional academic outlets. Table 11 and 12 depict these results visually.

Table 11. "High Quality" Studies Showing Confidence Intervals and Hedges's g Mean ($n=14$)

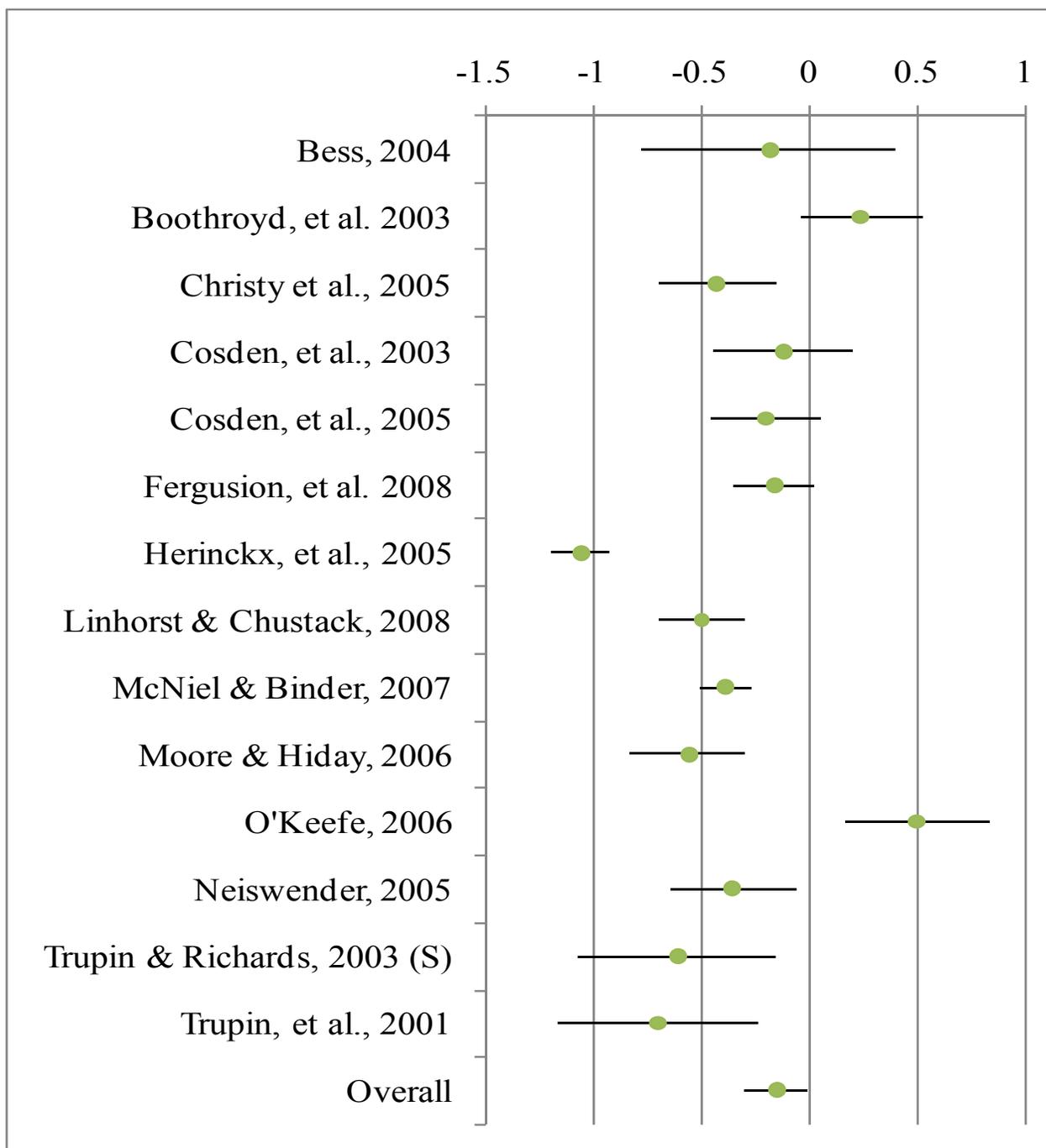
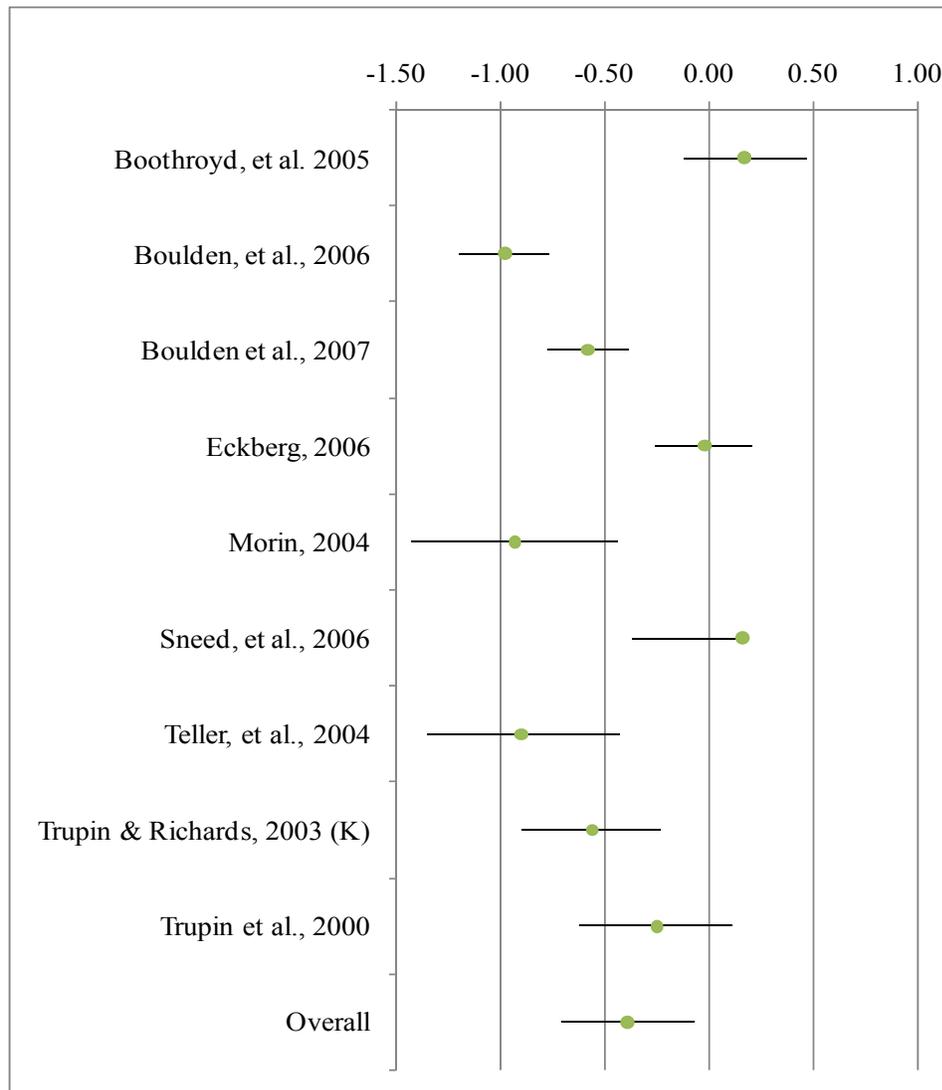


Table 12. “Low Quality” Studies Showing Confidence Intervals and Hedges’s *g* Mean (*n*=9)



As shown in the Tables 11 and 12, higher quality studies had a smaller overall mean effect size (Hedges’s $g = -.15$, 95% CI = $-.30 - .01$, $z = -2.10$ $p = .036$) than lower quality studies (Hedges’s $g = -.39$, 95% CI = $-.71 - .07$, $z = -2.42$ $p = .016$) and both findings were significant. Both the high and low quality studies had nonsignificant heterogeneity levels ($Q = 64.75$, $df = 13$, $p < .001$, $I^2 = 79.9\%$; ($Q = 91.39$, $df = 8$, $p < .001$, $I^2 = 91.2\%$), respectively. The moderator analysis shows that difference between higher and lower quality studies was significant (Hedges’s $g = -.19$, 95% CI = $-.33 - .06$, $z = -2.19$ $p = 0.028$). The associated heterogeneity statistic was not

significant. ($Q=1.78$ $df=1$, $p=.182$). This result indicates that study quality may potentially have a moderating effect.

I. SUMMARY

It was found that recidivism, quality of life, and mental health outcomes were positively influenced by the participation in an MHC program. Substance abuse outcomes were found not to have been significant and therefore, at least within this study, do not appear to have been positively influenced by the participation in a MHC program. In addition, it was found that non-peer reviewed studies had significantly higher effect sizes than peer reviewed studies. The same was also true of lower quality studies when compared to higher quality studies. Lastly, it was also revealed through a moderation analysis that there was a high degree of heterogeneity among trials. A nuanced discussion of the meaning of these findings put in the context of earlier MHC research is presented in the following chapter.

V. DISCUSSION

Despite the ongoing initiation of MHC programs across the United States it is not known whether they are effective interventions. A number of studies have examined whether they have been effective in reducing recidivism, improving quality of life, and linking participants to mental health treatments. The early results of individual studies show they have been successful in improving the aforementioned outcomes. This study presents the first meta-analytic data to support these early, individualized results. The following chapter presents a nuanced discussion of the study's findings that incorporates the extant MHC literature. Also identified are implications for research, social workers, and other mental health and criminal justice professionals involved in the MHC program. The chapter concludes with an examination of the limitations of the analysis, how subsequent studies could be improved and suggestions for future research.

The findings presented above represent the first meta-analytic study of MHCs to date. MHCs are relatively new and because of this a quantitative synthesis may not have been feasible before now. This review analyzed all of the available MHC evaluations from both peer-reviewed and non-peer reviewed sources that could contribute an effect size. Twenty-three studies representing 129 outcomes with over 11,000 participants were included. The mean effect size for all of the studies was -0.24 indicating that MHCs have a small to medium (Cohen, 1977, 1988) effect on clinical and recidivism outcomes.

While it is common to report the overall mean effect size, in this instance, it is not conceptually meaningful to combine various categories of outcomes. More empirically important was the assessment of whether MHCs were effective in reducing recidivism. When analyzed independently recidivism had a mean effect size of -0.52. This indicates that MHCs had a

moderate (Cohen, 1977, 1988) effect on decreasing recidivism among its participants. In effect, this study shows that MHC participants were significantly less likely to recidivate than non-MHC participants. The same was also true when recidivism outcomes among quasi-experimental trials were analyzed. An effect size of -0.58 was found, indicating that among quasi-experimental trials, participants of MHC trials were significantly less likely to recidivate when compared to non-participants. This finding, according to Cohen's effect size scale, also represents a moderately powerful effect on decreasing recidivism among MHC participants in quasi-experimental trials. In many ways, these are several of the most relevant findings since most MHCs were designed fundamentally with the goal of reducing recidivism.

A moderate reduction in recidivism is encouraging, but these results should be interpreted with caution. Very few of the evaluations were experimental. Quasi-experimental trials comprised over 70 % of the research designs. Of those 17 studies, 10 of them did not statistically control for differences between MHC and comparison participants. It is possible that because the comparison groups were often comprised of individuals who opted out of participation there was a bias favoring the MHC condition. For instance, in the Moore and Hiday, 2006 study, participants for the MHC were chosen by a judge who had knowledge of the community and the treatment history of many of the individuals who presented in court. This meant that individuals who may not have done as well in the MHC were diverted to the traditional court process. In this instance, an unknown bias may have been present.

Within the regard to the clinical/mental health category of outcomes, MHCs had a small to moderate effect of 0.28 on a participant's quality of life. This indicates that individuals who participated in an MHC had significantly higher quality of life scores than those who did not participate in the program. It is important to keep in mind, however, that most of these outcomes

came from the same study by Bess (2004). When the mental health/clinical outcomes were examined among all 23 studies, they were found not to be significant. That was true for most of the stratified analyses as well, with the exception of quasi-experimental studies. Among quasi-experimental studies there was a relatively small but significant effect size of -0.14 for mental health/clinical outcomes. This meant that individuals who participated in MHC programs had a significant increase in their use of appropriate and useful mental health services when compared to non-MHC participants. This is in line with the findings from the 2007 RAND Corporation study of the Allegheny County, Pittsburgh MHC, as well as with individual studies produced by Boothroyd et al., 2003 and 2005 and Henrickx et al., 2006, that show an MHC program has the potential to link participants to needed mental health services.

What could not be specifically determined from this analysis was whether there was a decrease in more costly services such as emergency room visits or psychiatric hospitalizations. With regard to substance abuse outcomes, it does not appear from this study that MHC participation significantly decreased participants' use of illegal substances. None of the substance abuse findings were significant. Therefore, it appears that MHCs have the greatest impact on the reduction of recidivism among individuals who participate in those programs.

The idea that participants who opted out of MHC may be different from individuals who opted to participate is worthy of further exploration. Unfortunately, there was not enough information contained within the studies to explore this empirically. There were, however, several authors who discussed the characteristics of individuals in greater detail who opted not to participate in the MHC program. For instance, Neiswender (2005) observed that the main reason participants opted out of the MHC program was because they did not believe they needed mental health treatment. Herinckx (2005) noted that 20 % of the possible participants in the MHC opted

out but did not state why they chose not to participate. In fact, of the original 368 individuals initially recruited for the study, a total of 222 (about 60 %) were terminated for noncompliance with requirements of the program, or opted out because they no longer wanted to be involved or because they were transferred to another program such as substance abuse or domestic violence court. In addition, Moore and Hiday (2006) reported that one third of the MHC defendants did not complete the program and were sent back to the traditional criminal court condition, mostly due to noncompliance. They were unable to detect a significant difference in demographic or criminal history variables between completers and non-completers.

It would be interesting to know more about the reasons individuals chose not to participate in the MHC program. A possible explanation is stigma associated with mental illness. Among individuals with a severe mental illness “internalized stigma” is relatively common (Yanos, Roe, Markus, & Lysaker, 2008. “Internalized stigma” Yanos et al., explain occurs when an individual loses the hope they previously had and adopts a more negativistic view about themselves. This type of stigma is negatively associated with important outcomes related to recovery.

It would also be helpful to know more about what precisely is meant by the term “noncompliance.” Many studies reported that some participants were noncompliant but did not detail what this term meant or why the clients failed to fully participate in treatment. One theory is that the individuals who either chose not to participate or were noncompliant with the treatments, are the same individuals who have difficulty recognizing that they are ill. As noted earlier, among individuals with SMIs such as schizophrenia and bipolar disorder, there exists a condition called anosognosia. Anosognosia is a neurological condition in which individuals are unable to recognize their illness (Amador, 2001). This condition has long been familiar to

neurology scholars and has been most studied among individuals who suffer strokes, traumatic brain injury and dementia (David et al., 1995; Orfei, Robinson, Bria, Caltagirone, & Spalletta, 2008). Since they do not believe they are ill, some individuals with an SMI subsequently refuse treatments. There are approximately 50 % of individuals with SMI who do not believe they are ill (Amador, 2001). Is this population at risk for being potentially missed by the MHC programs? In most MHCs, participation is voluntary. In some instances potential participants were not aware of the voluntary nature of these court programs (Boothroyd et al., 2003). If an individual does not believe they are ill then logically it follows that they may be less likely to participate in a program that focuses on linking them to mental health treatments. Without more specific information concerning individuals who declined to participate, it is not possible to know whether it was due to anosognosia. That may have been the case in the Neiswender study but without greater detail it is not possible to know whether anosognosia was responsible for individuals to initially opt out of the MHCs and also responsible for the subsequent non-compliance by those who had chosen to participate.

Anosognosia may prove to be of great significance in explaining why some individuals chose not to participate in an MHC program and why some individuals were noncompliant with treatments. Anosognosia, more importantly, may prove to be of great significance in the success of MHCs. If as a result of their illness, a large number of individuals believe they have no mental illness and choose no treatment for what they sincerely believe to be no illness, then nearly half of the potential population who might be helped will not be available to the MHC. As a result approximately half of those individuals with perhaps the most severe mental illness will not make themselves available to the MHC system and will thus be denied any possible benefit of

court directed treatment. In essence those who would benefit the most from the MHC system may be too ill to choose treatment.

It is known that as many as half of those diagnosed with an SMI are in complete denial that they suffer from a mental illness of any sort. This total denial has been well investigated by the mental health community as it is well accepted as a symptom of some SMI's, schizophrenia in particular (American Psychological Association, 2000; Dickerson, Boronow, Ringel, & Parente, 1997). Individuals who choose not to receive treatment (noncompliance) have a very poor prognosis (Flashman & McAllister, 2002) and will often begin the process of decomposition, a condition that begins an irreversible process of degradation. Those who choose treatment have a much better prognosis. The choice to receive or reject treatment is not always the prerogative of the seriously mentally ill individual. Those who are hospitalized, often against their will, and who refuse treatment, will be evaluated by the attending staff. Medications and hospitalization may be forced upon the client. The evaluatory process is lengthy and complicated, involving multiple reviews, an inpatient hospitalization hearing, and legal counsel for the client (Durand & Barlow, 2005). It is determined that the client is mentally ill and as such is not capable of making a sound judgment regarding their treatment. The assumption by which medical treatment is forced upon the client against their will is that the best interest of the client cannot be carried out without medical treatment. If the client were less ill, they would likely choose treatment. In the MHC studies cited, many individuals with an SMI chose not to participate or became non-compliant. The obvious question becomes: was it in the best interest of the individual to reject court directed therapy? Were the individuals capable of making decisions that would be in their best interest, or did their illness, by its very nature, prevent them from doing so? Perhaps individuals who chose not to participate or became non-compliant did so

only because they were too ill to make sound judgments or to comply. An evaluatory process, similar to that used by hospitals during the commitment process, might be implemented by MHCs to coerce mandated treatment. The safe guards for personal freedom that have been established in hospitals have proven satisfactory and have been well tested over time. Perhaps the MHCs could utilize a similar process to help those who are so very ill they cannot recognize their illness. The overall benefits of the MHCs, to society at large, could be increased if the MHCs mandated therapy for those with anosognosia.

Another potential explanation for non-compliance is substance abuse. Individuals with an SMI and co-occurring substance abuse related disorders may be less likely to comply with treatments. There are a high percentage of individuals with severe mental illnesses who also have co-occurring substance abuse disorders (Swartz & Lurigo, 2007). Descriptively, there was not enough information within this study regarding the participant's diagnosis and substance abuse related history to assess the specific role substance abuse disorders may have had on noncompliance with MHC participation. Several authors did include a discussion of the possible effect of drug and alcohol problems may have had on success in the MHC program, but it was far from complete. Cosden and colleagues (2005) for instance noted that the MHC was not effective for all participants but it was especially unhelpful for those with serious drug and alcohol problems. They found that individuals with serious drug and alcohol problems tended to go to prison at a higher rate than those who did not have serious drug and alcohol problems. This finding was consistent with their earlier 2003 study. Boulden et al. (2007) found that individuals with a substance abuse diagnosis were less likely to successfully complete the MHC program. O'Keefe (2006) reported a reduction in the frequency of alcohol and substance use among participants who completed the MHC program but that finding was not significant.

Relatedly, Boothroyd et al. (2003) found that MHC participants were more likely to report receiving behavioral health services at the eight-month follow-up than were participants from the comparison court, including substance abuse services. It should be noted, however, that in this latter study the data were gained through self-report and thus may be biased or inaccurate. Ferguson (2008) found that when some MHC participants ultimately reoffended, their crimes were less likely to be related to substance abuse when compared to non-program graduates. It is logical to believe that having a substance abuse diagnosis in addition to a serious mental health diagnosis makes compliance with treatment more difficult. Individuals with co-occurring disorders generally have lower rates of treatment compliance than individuals with a single diagnosis (Peters & Hills, 1997). It appears that this was the case in the aforementioned studies but more empirical evidence is needed to generalize these findings and to come to an overall understanding about how precisely substance abuse affects or interferes with MHC program participation.

Homelessness, living in shelters or misuse of disability funds may be other reasons to explain noncompliance (Morin, 2004). Morin (2004) in her study of MHCs found that 100 % of individuals who successfully graduated from the program had stable housing whereas those who did not were less likely to graduate. Generally, individuals with SMI are more likely to be homeless compared to those in the general population (Bachrach, 1992) and as a result are at an increased risk for involvement in the criminal justice system (Martell, 1995). A more recent study by Greenberg and Rosenheck (2008) showed that among adult jail inmates the rate of homelessness was very high (15.3 %), and according to the authors was 7.5 to 11.3 times higher than that found in the general population. This finding was after having controlled for age, race or ethnicity, and gender distribution. They also found that homeless inmates, relative to other

inmates, were more likely to be incarcerated for a property crime, have more prior criminal justice system offenses—both nonviolent and violent—, have more mental health and substance abuse problems, have a higher unemployment history, be more likely unmarried, and have lower incomes, less education and fewer personal assets. Greenberg and Rosenheck concluded from their data that prior incarcerations were a major risk factor in homelessness and thus may have resulted in the cycling between public psychiatric hospitals, jails and prisons, homeless shelters and the street. The effect that homelessness has on MHC participation or the opposite, the effect MHCs have on helping individuals achieve housing, is still unknown. This is an area that requires further investigation.

With regard to length of treatment, one theme that emerged from this research was the importance of graduation from the MHC program or receiving the “full dose” of the intervention. This point was emphasized by at least one third of the study authors. Participants who did not graduate from the program consistently did worse than participants who completed or graduated from the program. For instance, Moore and Hiday (2006) found that non-completers were arrested more often than individuals who completed the program. In fact, they found that individuals who completed the program were rearrested only 28 % of the rate of individuals who did not complete the program. Program completers had a rearrest rate less than one fourth that of TCC defendants, and the rate for non-completers was found to be not significantly different from that of TCC defendants (Moore and Hiday, 2006). Moore and Hiday believe these findings point to the importance of program completion in order for the intervention to be fully effective, at least with regard to reducing recidivism.

Herinckx (2005) made a similar point with regard to program completion. Non-graduates of the MHC in their study were 3.7 times as likely to reoffend compared to those who graduated.

Significantly, the authors noted that graduation status was the most important factor in determining the success of the program. Boulden et al. (2006) found that after 12 months, 19 % of successfully discharged clients received new charges whereas 61 % who had been terminated from the program received new charges and 55 % of individuals who voluntarily withdrew from the program accrued new charges. Boulden and colleagues in a later study (2007) found that generally, those who completed the program and were successfully discharged had lower recidivism rates than those who did not. Similarly, Linhorst and Chustack (2008) found that clients who successfully completed the program had a decreased arrest rate of 12.8 % compared to clients who did not successfully complete the program. In addition, the authors found that individuals who finished the program also were charged with less serious offenses, such as ordinance violations versus felonies. Based on these findings it seems evident that individuals who received the "full dose" of the MHC intervention gained the most benefit and therefore were less likely to recidivate when compared to non-graduates.

Another factor also seemed to make a difference in the success of participants in an MHC court program. Relationship with court personnel, in some instances, seemed to play a part in whether or not some participants were more successful than others. The role of the judge was different than normally seen in a traditional court. Judges, in some cases, acted more like case managers than traditional judges. Ferguson (2008) described the role of the judge as being a team leader. Other members of the MHC team included project managers and case managers. Morin (2004) in her study of MHCs speculated that the intervention may have been more successful had there been more staff involved with the program. Throughout the MHC intervention, Morin noted that there was a "skeletal crew" (p. 74). Lack of staffing, it was thought, may have directly impacted compliance rates (Morin, 2004).

Bess (2004) also speculated that staff and court personnel might make a difference in MHC outcomes. Bess (2004) believes that the judge in their experiment served as the "lynchpin" (p. 88) for the program and in many ways held the program together by incorporating traditional court process knowledge with that of the therapeutic recommendations of the MHC. Similarly, in the Allegheny County MHC (not included in this meta-analysis) it was clear that many of the participants had a very good relationship with the judge and other court personnel. According to the 2009 MHC report on their website (<http://www.alleghenycounty.us/dhs/mhcourt.aspx>), an important feature of their program is the consistency of the client's experience with the personnel who provided service coordination to clients in the court. The report shows that each client is supported by a member of the Justice Related Services MHC staff and by one of five special service probation officers with one judge who oversees the entire process. The MHC also has one assistant District Attorney and one Public Defender. They believe consistency is critical throughout the MHC process. Whether consistency and good relationships with court personnel were factors in successful MHC programs was difficult to capture empirically throughout this study. That is because many studies did not detail these aspects of court relationships. In the future this is an area that should be explored in more depth.

Another related trend that emerged was that the success of an MHC was sometimes related to the quality of services that were provided through the program. Unfortunately, there was not enough descriptive information to gain specific details about the services offered for all of the MHC programs studied. But among the studies that did provide this information, their authors commented on the fact that the quality of services being offered to the participants may have made a difference in whether the intervention was successful. Boothroyd (2005) did not find significant differences between their two groups on clinical outcomes but the authors

speculated it was because there was no new funding in the mental health system in tandem with the implementation of the MHC intervention. The authors believed that had there been better mental health services available there may have been a significant difference in clinical outcomes between the treatment and comparison groups.

The more rigorous studies such as those by Cosden et al. 2003 and 2005 tested whether the MHC group did better than the control group and found that both groups improved. That may be because when the study began, both the control and treatment group (in addition to the MHC intervention for the treatment group) received intensive case management services. That meant, at least with regard to the 2005 study by Cosden et al., that when the MHC intervention was implemented for the treatment group the control group began to receive better services. The comparison group was not actually getting any special intervention as did the MHC participants but it was noted by the authors that they felt as if they were (Cosden, 2005). The point is that better services promoted more positive outcomes even when it was non-intentional. Because the quality of services among the various studies could not be measured in this meta-analysis, no conclusions could be drawn about whether specific aspects of the MHCs were more effective than others. For instance, does cognitive behavioral therapy enhance MHC outcomes or would it be better to incorporate an intensive case management aspect into the program like the Cosden et al. studies did? Do programs that help participants secure housing prove more effective than those that do not? Or are programs that integrate substance abuse psychoeducation or services related to substance abuse, more effective than those that do not? The exact nature of the services offered by MHCs interventions remains unanswered. This is an important area that requires further investigation.

Lastly, it is also important to mention the Teller et al. study that did not receive a score for methodological quality. While not enough information could be gathered from the study to rate its methodology it was considered a valuable study and therefore included. In addition, it met the selection criteria. Methodological quality was a variable rated independently from the other inclusion criteria and therefore did not meet criteria for exclusion (Garcia-Campayo et al., 2008). In addition, the mean effect size was re-calculated excluding the Teller et al. study, and the difference was negligible

A. GENDER, RACE, AND MHCs

The existing MHC literature indicates an over-representation of White males, and in some cases, White females (Steadman, et al., 2006) participating in MHCs. A 2007 study of a broad range of jail diversion programs revealed that a disproportionate number of older, female, Caucasian individuals were diverted into these programs (Naples, Morris, & Steadman, 2007). Using that same Steadman et al. 2006 data, an unpublished master's thesis finalized in July of 2008, revealed through logistic regression analyses that females with an SMI were more likely to be accepted into the MHC program than men with an SMI, even when variables such as race, type of crime, and type of charge were controlled for (Baranek, 2008). Similarly, the present study found that a majority of the MHC study participants were Caucasian males in their mid-30s. Females did not however represent the majority of participants as they had in the Steadman et al. 2006 study.

It is unclear why Caucasians emerged as the majority of MHCs participants. This finding is of concern given that among jail populations in the United States, as of midyear 2007, African-American males were the largest percentage (35.4%) of inmates in federal prisons, state facilities, or local jails (Sabol & Couture, 2008). In fact, African-American males between the

ages of 30 and 34 had the highest custody incarceration rate of any race, age or gender group (Sabol & Couture, 2008). The 2007 midyear report by the Bureau of Justice Statistics also showed that black males are six times more likely to be held in custody than white males and four times more likely than Hispanic males. Among the females, African American women were incarcerated 3.7 times more than Caucasian women (Sabol & Couture, 2008). Additionally, some research suggests that African Americans are over diagnosed with disorders such as schizophrenia, a common diagnosis found among MHC participants. Minsky, Vega, Miskinmen, Gara, and Escobar (2003), in a large sample of behavioral health service data collected in New Jersey, indicated that African Americans were diagnosed more frequently with schizophrenia spectrum disorders than were Whites or Latinos. In a related instance, Chu, Sallach, Zakeria, and Klein (1985) found that African Americans presenting to treatment, display more severe psychotic symptoms than their white counterparts. If African Americans are in some instances over diagnosed with schizophrenia spectrum disorders and also tend to display more severe psychosis symptoms while having much higher incarceration rates than Whites, then why is it that they are less likely to be involved in MHCs? It is not yet known why White males and in some instances White females are overrepresented among MHC participants. Location may be one explanation. It is possible that the MHC studies were conducted in areas in which there were a low number of African-Americans or other minority racial or ethnic groups. Unfortunately, the studies included in this analysis did not detail enough about the specific location or the composition of the racial makeup within the community in which the MHC experiment or evaluation took place. What is known at this time is that African Americans, both male and female, and individuals of other diverse races, are not the majority of individuals participating in MHCs. This finding merits further investigation and explanation.

B. IMPLICATIONS FOR SOCIETY AND THOSE WITH A SEVERE MENTAL ILLNESS

Mental health courts represent a drastic departure from the current trend of incarcerating those with an SMI. Within the context of MHCs, individuals with an SMI are viewed not as criminals but as individuals afflicted with an illness that impairs their psychological capacity to stop certain behaviors considered crimes punishable by law. Instead of focusing on punishing the individual, the MHC recognizes the need for helping those afflicted with SMI. MHCs symbolize a compassionate return to helping the individual, a principle consistent with the values of professional social work. MHCs seem to be assisting individuals in the bettering of their lives. It might also be said that MHCs signal a change in philosophy towards people with SMI. Crucially and perhaps most importantly, instead of negating the root of the problem and inflicting retribution-style punishments for those with SMI committing crimes, MHCs are focused on rehabilitation and giving individuals a chance to rebuild their lives. Helping individuals into treatment can positively affect an individual's quality of life. It can also serve to reestablish a life otherwise negatively impacted by illness or incarceration. Additionally, society benefits from MHCs because they have the capacity to prevent future crimes by offering treatment in place of punishment. This, in turn, may mean that MHCs can reduce the costs of taxes associated with the building of additional jails and prisons.

C. IMPLICATIONS FOR RESEARCH

A number of research implications can be derived from the study. These findings suggest that MHCs are an effective mechanism for reducing recidivism, connecting individuals to mental health treatments, and improving their quality of life. This is the first study to synthesize all of the available studies to make an evidence-based statement on the status of MHCs. From a

research perspective, it is important to utilize interventions that are evidence-based. The implication of this is that MHCs had been operating in absence of a solid body of research to justify their ongoing development. Earlier studies have indicated they are effective interventions and this study supports and reaffirms those results.

It is also important to note that despite attempting to access as many MHC evaluations as possible, using the dual approach of directly contacting program directors and searching the academic literature, including multiple databases, reference lists and Internet websites, only 23 studies were located. Only 14 of those studies could be found in peer-reviewed sources such as academic journals. Why are there so few evaluations available? Some of the program directors, in their response for requests for data, reported that they found it difficult to locate individuals with the appropriate research skills to conduct an evaluation. Several had contracted with local policy agencies to conduct evaluations. A few mentioned that funding was a barrier to evaluation. With at least 150 MHCs in existence and many more being built, there should be a more concerted effort to evaluate these courts. This same assertion was expressed by Steadman and Redlich in their 2006 review of seven MHC programs. They suggested that, “it may be advisable for communities to slow the tide of new mental health courts until the specified effectiveness of current ones can be demonstrated.” (p. 9). Thus, research has significantly lagged behind implementation of the courts.

As mentioned earlier, quasi-experimental trials comprised over 70 % of the research designs. As noted by Ferriter and Huband (2005), many believe that randomized controlled trials (RCTs) are the only type of studies that have any value. They also observed that the lack of RCTs have led some systematic reviewer's to conclude that the evidence in a particular discipline is insufficient because there were too few RCTs. Ferriter and Huband attempted to assess whether

nonrandomized study designs produced similar results to those of randomized studies. They concluded, along with others such as Shadish and Ragsdale (1996), that nonrandomized designs can produce results similar to that of RCTs. This is not to say that nonrandomized control designs are equal to RCTs but they make the argument that they should not be excluded from systematic reviews. Their finding supports the decision to include nonrandomized studies within this analysis. It also highlights the lack of RCTs conducted in MHC research.

Lastly and perhaps most importantly is the finding that some individuals did not complete the MHC program because they chose not to participate or were deemed noncompliant. The implication of this finding is that possibly a significant portion of individuals did not access MHCs for reasons that have yet to be identified through research. The inference is that these individuals may have been less motivated to succeed or to participate in treatment. Further, these two groups may have been comprised of the most recalcitrant offenders. The implication of this is an overestimation of program benefits.

D. IMPLICATIONS FOR SOCIAL WORK, OTHER MENTAL HEALTH PROFESSIOINALS AND CRIMINAL JUSTICE PROFESSIONALS

Several findings from the study have specific significance for social workers, mental health professionals, and criminal justice officials associated with MHCs. Some of these findings include, 1) MHC personnel may affect outcomes; 2) quality of mental health services may also affect MHC outcomes; and 3) there may be an increase in the use of community mental health services by offenders involved in MHC programs.

The idea that court personnel may affect MHC outcomes may imply that professionals with certain qualities, attitudes, or personal characteristics are better suited than others to work with participating offenders. What are those interactions like? Who is part of the treatment/court

team? Are social workers typically involved in MHCs, and if so, what are their roles? It would also be helpful to know more about how criminal justice officials and mental health staff interact. Do they have good working relationships or are there conflicts of interest due to their differing training or perspectives? In traditional court settings the judge, attorney, and other criminal justice officials typically have adversarial or formal relationships with defendants (Goldcamp, 1999). The MHC has a nontraditional relationship that is geared towards rehabilitation instead of punishment. If court personnel positively influence MHC outcomes then it is important to examine and understand the nature of those relationships.

This study also found that among the 18 quasi-experimental trials, involvement in MHCs increased a participant's use of appropriate and useful mental health services. This meant that individuals who were previously not in treatment were connected to services. In addition, presumably they were accessing these services in community mental health settings. This may have important implications for mental health professionals and in particular, social workers. As noted by Newhill and Korr (2004), social workers are currently the primary providers of clinical services to clients with mental health needs. It is likely there will be a notable increase in the number of clinicians working with clients with a history of crime, possibly violent crime, requiring agencies to focus on worker safety issues and concerns. Individuals with SMI are not typically more dangerous than individuals without any SMI, but they may be if they have a history of violence, not taking their medication and are abusing illegal substances (Monahan, 1992).

Clinicians may also be faced with treating individuals who possibly deem their involvement in MHCs as involuntary even though it is a voluntary program. There has been some evidence that it is not always clear to participants whether the MHC program is voluntary (Boothroyd et

al., 2003). Clinicians within the community mental health setting working with involuntary clients usually do so as case managers (Rooney, 1992; 2009). Case managers and others who work with involuntary clients, especially those with SMI, have described their work as difficult (Rooney, 1992; 2009). In addition, mentally ill offenders are known to be particularly resistant to treatment (Lamb, Weinberger, & Gross, 1999). The implication of this would be that clients who perceive treatment as involuntary may be more challenging to treat than individuals who believe they are attending on their own volition.

In addition, if MHC participants are utilizing community mental health services as their primary source of treatment, then it is possible that clinicians are not properly trained to treat individuals with SMI. In addition, some research has shown that community mental health workers are not only reluctant but afraid to treat mentally ill offenders (Lamb & Weinberger, 1998). Unfortunately, this study was unable to determine whether individuals are in fact accessing community mental health services, what types services they were accessing, the nature and quality of those services, or whether participants within MHC programs had violent or substance abuse histories. The aforementioned are possible implications that cannot be verified or determined at this time.

D. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

According to this analysis, MHCs are effective interventions but these findings should be interpreted with the following limitations in mind. First, as shown by the statistically significant heterogeneity Q scores, many of the characteristics in the studies varied considerably. This variance was further evident when analyzing the I^2 percentages. Most of the I^2 percentages were in the 80 to 90 percentage range. This indicates that a high percentage of the observed variance was the result of real variance between the effect sizes (Borenstein et al., 2009).

Related to this is the fact that only one moderator analysis could be performed. Study quality was examined as moderator. When studies were divided on study quality it was found that lower quality studies had a significantly higher effect size than higher quality studies. There are some who contend that higher quality studies tend to have lower effect sizes when compared to lower quality studies. The premise is that higher quality studies are more rigorous and thus control for more variability than do lower quality studies. Some studies have shown that nonrandomized designs or other lower quality studies may produce larger treatment effects than do more rigorously designed studies (Colditz Miller, & Mosteller, 1989; Devine & Cook, 1983), although not everyone shares this view (see Ferriter & Huband, 2005; Shadish & Ragsdale 1996). In this study lower quality studies had significantly higher effect sizes than lower quality studies. Future meta-analytic reviews might conduct a more thorough analysis to determine the variability in effect sizes.

A second limitation of this study is that there is possible overlap between the studies. As mentioned above, several authors had conducted earlier studies on MHCs but did not specify in those later studies whether the participants were the same as in previous studies. There is a chance that there may have been overlap in some studies. A third limitation may be that not all available studies were included as part of this analysis. A full attempt was made to capture all the existing studies but it is plausible that some studies may have been missed. A fourth limitation is related to measurement and instrument scales. No study reported on the psychometric properties of measures for their specific evaluation. Therefore it was difficult to gauge the quality of these scales. Some research has shown that measures that are more reliable tend to produce larger effects than less well-developed measures (Smith, 2006). Also, some studies utilized self-report measures. There is concern with the use of self-report measures.

There has been some research that has indicated that self-report responses may have more to do with psychological or sociological variables rather than the construct of interest (Harrison, McLaughlin & Coalter, 1996). The fifth limitation is that studies contained in this review may have methodological shortcomings. As was mentioned earlier, only three studies were experimental. Most were quasi-experimental and therefore more high quality evaluations are needed. Methodological quality can also account for a substantial variation in effect sizes (Wilson & Lipsey, 2001). A sixth limitation is related to generalizability. Throughout the literature MHCs are known to vary considerably (Steadman et al., 2001) and the same was found in this analysis. Because there is no current standardized model of MHCs it is difficult to generalize these findings to all courts across the United States. Despite these aforementioned caveats, it is reasonable to assert that MHCs have the potential to be effective in achieving their main goal of reducing recidivism as well as in improving mental health and quality of life outcomes.

One of the positive aspects of meta-analyses is the ability not only to determine the current status of the empirical data but also to uncover the gaps in the knowledge base. This is particularly true with regard to theory development. Areas for future research include assessing what types of treatments are being facilitated by the MHCs. More research is needed to determine whether some treatments are better than others. Other gaps in the literature lack of knowledge about the comparison groups within MHC evaluations and about, what effect substance abuse diagnoses have on outcomes, as well as lack of detailed explanation of why certain individuals choose not to participate in a court, and of what exactly is meant by "noncompliance." What are the characteristics of those who chose not to participate? What explains why some individuals would choose remaining in jail as opposed to participating in the

MHC when therapeutic services are offered in place of incarceration? Is it because they lack insight into their illness? There may be logical answers to these questions but at this point they have yet to be uncovered.

It is also important to highlight that a selection effect known as creaming may have been present within these studies. Creaming is the tendency of program administrators to choose clients who are most likely to succeed in the program and to exclude those perceived to be more difficult to treat (Glazer & Erez, 1988). In most cases, a judge makes a decision on whether an individual is appropriate for MHC (Boothroyd, et al., 2003). Individuals may be deemed inappropriate for any MHC program for reasons such as the following: individual does not believe they have a mental health problem; it is perceived that the offender is not motivated to accept treatment; or in some cases, the individual has pending felony charges (Fileccia, 2008). As mentioned earlier, in the Moore and Hiday 2006 study, MHC participants were chosen by a judge who had knowledge of their history. In this instance, the judge may have chosen individuals who were the most likely to succeed over those less likely to succeed. This potential selection effect may limit the generalizability of these findings.

Another major area in need of work is related to the theoretical understanding of how an MHC operates. Therapeutic jurisprudence, the idea that specialized courts can work to rehabilitate offenders rather than punish them, is a theoretical framework that has been applied to MHCs primarily by Bruce Winick and David Wexler as well as a few other researchers. However, most of the studies within this analysis contained little or no discussion of theory. Hunter and Schimdt (2004) argue that meta-analysis can uncover empirical knowledge essential for theory development. This may be particularly germane to MHCs since relative to other behavioral interventions, fairly little is known about them. Understanding the theory behind why

MHCs should work may serve to better clarify the operation and the overall purpose and justification of MHCs. Future research and meta-analyses could attempt to develop theory.

E. POLICY AND PRACTICE RECOMMENDATIONS

Several policy recommendations can be derived from this study. First, there is a need for additional evaluations of MHCs. As mentioned earlier, only 23 could be located for this analysis while there are at least 150 courts in operation. The obvious advantage of this would be to provide a broader and more nuanced understanding of the courts. Second, meta-analytic studies of MHCs should be conducted as new evaluations are published. Wells and Littell (2009) highlight the commitment of a team of Norwegian researchers who conduct systematic reviews of welfare-to-work programs every two years. Wells and Littell suggest that this is one way systematic reviews can continually contribute to the knowledge base of a social problem. Third, there should be an effort to explore the reasons why some individuals opted not to participate in MHCs. A way to accomplish this could be to make an effort to document an individual's rationale for not wanting to participate. It seems logical that most rational individuals would choose treatment over incarceration. It is possible that individuals who chose not to participate in an MHC program did so because they did not recognize they had a mental illness. If it is known why an individual is not interested in participating then MHCs may be able to change their admission practices accordingly. At the very least, documenting this knowledge may lead to a better understanding of which participants the courts are best suited for. Related to this idea, is the fact that it was never made clear, throughout the studies, why some individuals were described as noncompliant and removed from the program. Study authors should provide the specific criteria used to deem individuals noncompliant. It is important to understand why these

two groups, those deemed noncompliant and those who chose not to participate, were ultimately not included in MHC programs.

A practice recommendation includes a more thorough understanding of the interdisciplinary team that typically operates within MHC's. Some studies have indicated, for instance, that the judge was considered to be intrinsically linked to the success of the MHC program. There is a need to understand more about these relationships. Qualitative studies may be helpful in unveiling the roles of critical players and understanding the relationships between MHC staff and its participants.

A second practice recommendation is related to the fact that not enough is known about what types of treatments MHCs are linking participants to. Depending on the location of the court, rural or urban area, the amount of funding they have in place to operate day-to-day, and other related factors, treatments are likely to vary from court to court. There should be an effort to examine what types of services MHC participants are being referred to, who are the providers of these services, and how they are paid for. The Pittsburgh RAND study of the Allegheny County MHC found that Medicaid was the primary provider of mental health costs. Is this true of other MHC programs as well? Further, a determination should be made about whether the services are effective or whether some are better than others. Finally, the last practice recommendation is related to the overwhelming majority of Caucasians males who make up most of the MHC participants. This finding should be further explored. To accomplish this, studies should describe in more detail how candidates for MHCs are identified. The aforementioned policy and practice recommendations may lead to a more in-depth understanding of how MHCs operate, decrease recidivism and improve other clinical mental health outcomes.

F. CONCLUSION

This first meta-analytic study adds to the limited knowledge base of mental health courts. It showed they are effective interventions. This finding is remarkable given that they have been operating in the absence of considerable evidence supporting their effectiveness. Within this analysis MHCs were able to reduce recidivism by an effect size of -0.52. This effect size can be considered moderately powerful with regard to recidivism outcomes. This finding suggests that individuals who participate in an MHC program are statistically less likely to recidivate than are non-participants. Also found was that an MHC had the potential to positively impact the quality of life of participants as well as connect them to needed and effective mental health services. What was less clear was whether MHCs significantly decreased the use of emergency psychiatric services such as hospitalizations or if they can be effective for individuals who have a co-occurring substance abuse diagnosis. Individual studies showed that MHC interventions can be effective for individuals with co-occurring substance abuse problems, but that was not a finding supported by this meta-analysis. This study also showed that the majority of participants in MHCs were white Caucasian males in their mid-30s. This finding is slightly different from an early summary of seven MHCs (Steadman et al., 2006) that described Caucasian females as being the dominant participation group.

As reported earlier, there are over 150 courts in existence but very few studies have been completed to demonstrate their effectiveness. A quick search through Google News, the Lexis-Nexis database, or the Criminal Justice/Mental Health Consensus Project website shows that there has been continued development of MHCs across the United States. These courts are currently being created in the absence of strong empirical data demonstrating their effectiveness.

Despite these early positive findings, this study is only a starting point. There is a need for a continued effort to incorporate new MHC studies into future meta-analyses.

APPENDIX A- MEASURES UTILIZED IN PRIMARY STUDIES

Outcome Measure	
Quality of Life/Life Satisfaction	
Quality of Life/Life Satisfaction	The Lehman's Quality of Life-Short Form (QL-SF)
Clinical/Mental Health	
Depression/anxiety	Behavior and Symptom Identification Scale (BASIS-32)
Psychiatric status composite	Addiction Severity Index (ASI)
Psychosis	BASIS-32
Impulsive/addictive behaviors	BASIS-32
Daily Living Skills	BASIS-32
BASIS-32-average score	BASIS-32
Total BPRS score	Brief Psychiatric Rating Scale-Anchored Version
GAF score	The Global Assessment of Functioning (GAF)
Group therapy	NMG*
Individual therapy	NMG
Case management	NMG
Medication monitoring	NMG
Crisis intervention	NMG
Treatment episodes	NMG
General hospitalization	NMG
State psychiatric hospitalization	NMG
Psychiatric emergency room	NMG
Psychiatric hospitals	NMG
Inpatient treatment days	NMG
Outpatient service days	NMG
Intake and evaluation	NMG
Treatment hours	NMG
Monthly treatment hours	NMG
Substance Use/Abuse	
Readiness to change (alcohol & substance abuse problems)	NMG
No alcohol use in past 6 months	NMG
No substance use in past 6 months	NMG
Abstinent of alcohol use	NMG
Abstinent of substance use	NMG
Alcohol use status composite	ASI
Illegal drug use composite (part of	ASI
ASI: Alcohol	ASI
Recidivism**	
New violent charge	
Any new charge	
Jail days	

Rearrest	
Arrests	
Seriousness of charge	
Days incarcerated	
Booking rate	
Number of bookings	
Annual jail length of service (LOS)	
Jail LOS per booking	
Annualized bookings	
Annualized booking rate	
Annualized jail rate	
Mean charge severity	
Reincarceration	
Recidivism	
Recidivism severity	
Felony offenses	
Misdemeanor offenses	
Convictions	
Charges	
Current drug offense	
Miscellaneous	
Legal status composite	ASI
Medical status composite	ASI
Employment status composite	ASI
Family/social status composite	ASI
Relation to self and others composite	ASI
Race	NMG
Gender	NMG
Age	NMG

Duplicates outcomes not included; *No measure given; ** Gathered from counts and administrative data

BIBLIOGRAPHY

- Abramowitz, M. (2005). Prisons and the human rights of persons with mental disorders. *Current Opinion in Psychiatry, 18*, 525-529.
- Abramsky, S. (2008). The politics of mental illness: A worthy diversion. *The American Prospect, 19*, 9.
- Abramson, M.F. (1972). The criminalization of mentally disordered behavior: Possible side-effect of a new commitment law. *Hospital and Community Psychiatry, 23*, 101-107.
- Amador, X. (2001). Anosognosia keeps patients from realizing they're ill. *Psychiatric News, 36*, p. 12.
- American Psychiatric Association, (2000). Diagnostic and Statistical Manual of Mental Disorders, (4th ed.). American Psychiatric Association, Washington, DC: Author.
- Arsenault, L., Moffitt, T.E., Caspi, A., Taylor, P., & Silver, E.A. (2000). Mental disorders in violence in a total birth cohort. *Archives of General Psychiatry, 57*, 979 -986.
- Austin, J., Marino, B.A., Carroll, L, McCall, P.L., & Richards, S.C. (2001). The use of incarceration in the United States. *Critical Criminology, 10*, 17-41.
- Bachrach, L.L. (1992). What we know about homelessness among mentally ill persons: An analytical review and commentary. *Hospital and Community Psychiatry, 43*, 453-464.
- Baranek, K.D. (2008). Mental health courts-Do certain factors influence the decision outcome of acceptance or rejection? Unpublished master's thesis, Villanova University, Pennsylvania. Retrieved April 22, 2009 from the ProQuest database.
- Bazelon Center for Mental Health Law. (2003). Criminalization of people with mental illnesses: The role of mental health courts in system reform. *Jail Suicide/ Mental Health Update, 12*, 1-11.

Bazelon Center for Mental Health Law. (2004). The role of mental health courts in system reform. Retrieved April 22, 2009 from <http://www.bazelon.org/issues/criminalization/publications/mentalhealthcourts/#about>

*Bess Associates. (2004, October). *Mentally ill offender crime reduction grant program*. Butte County Forensic Research Team (FOREST). Oroville, Ca: Author.

Blitz, C. L., Wolff, N., Pan, K., & Pogorzeiski, W. (2005). Gender specific behavioral health and community release patterns among New Jersey prison inmates: Implications for treatment and community reentry. *American Journal of Public Health, 95*, 1741-1746.

Bolton, A. (1976). *A study of the need for and availability of mental health services for mentally disordered jail inmates and juveniles in detention facilities*. Boston: Arthur Bolton Associates.

*Boothroyd, R.A., Mercado, C.C., Poythress, N.G., Christy, A., & Petrila, J. (2005). Clinical outcomes of defendants in mental health court. *Psychiatric Services, 56*, 829-834.

*Boothroyd R.A., Poythress, N.G., McGaha, A., & Petrila, J. (2003) The Broward County mental health court: Process, outcomes, and service utilization. *International Journal of Law and Psychiatry, 363*, 55–71

Borenstein, M. (2005). Software for Publication Bias. In H.R. Rothstein, A.J. Sutton and M. Borenstein (Eds.), *Publication Bias in Meta-Analysis – Prevention, Assessment and Adjustments* (pp. 93-121). Chichester, U.K: John Wiley & Sons, Ltd.

Borenstein, M., Hedges, L., Higgins, J. & Rothstein, H. (2005). *Comprehensive Meta*

- Analysis, Version 2*. Englewood, NJ: Biostat.
- Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. London: John Wiley.
- *Boulden, J.M., Stapleton, C.S., Liedtke, E. (April 2007). *Evaluation of the Jackson County Mental Health Court Program*. Resource Development Institute. Kansas, MO.
- *Boulden, W.T., Johnson, J.M., Stapleton, C.S., Liedtke, E. (October 2006). *Evaluation of the Jackson County Mental Health Court Program*. Resource Development Institute. Kansas, MO.
- Brennan, P.A., Mednick, S.A., & Hodgins, S. (2000). Major mental disorders and criminal violence in a Danish birth cohort. *Archives of General Psychiatry*, 57, 494- 500.
- Bureau of Justice Assistance. (2006a). *Justice and mental health collaborative program*. Retrieved July 28, 2009 from http://www.ojp.usdoj.gov/BJA/pdf/MIO_Program.pdf
- Bureau of Justice Assistance. (2006b). *Mental health courts program*. Retrieved July 28, 2009 from <http://www.ojp.usdoj.gov/BJA/grant/mentalhealth.html>
- Casey, P., & Rottman, D.B. (2000). Therapeutic jurisprudence in the courts. *Behavioral Sciences & the Law*, 18, 445-457.
- Caulkins, J.P., Reuter, P., Iguchi, M.Y., & Cheisa, J. (2005). *How goes the "war on drugs?" An assessment of the U.S. drug problems and policy*. Santa Monica, CA: RAND Drug Policy Research Center.
- *Christy, A., Poythress, N.G., Boothroyd, R.A., Petrila, J., & Mehra, S. (2005). Evaluating the efficiency and community safety goals of the Broward County mental health court. *Behavioral Sciences & the Law*, 23, 227-243.

- Chu, C., Sallach, H.S., Zakeria, S.A., & Klein, H.E. (1985). Differences in psychopathology between black and white schizophrenics. *International Journal of Social Psychiatry, 31*, 252-257.
- Chu, F.D., & Trotter, S. (1974). *The madness establishment*. New York: Grossman.
- Corcoran, J. & Nichols-Casebolt, A. (2004). Risk and resilience ecological framework for assessment and goal formation. *Child and Adolescent Social Work Journal, 21*, 211-235.
- Cohen, J. (1977). Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York: Academic Press.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Colditz G.A., Miller J.N., & Mosteller F. (1989). How study design affects outcomes in comparisons of therapy. *Statistical Medicine, 8*, 441-466.
- Cooper, H. (1998). *Synthesizing research: A guide for literature reviews* (3rd ed.). Beverly Hills, CA: Sage.
- *Cosden, M., Ellens, J., Schnell, J., Yasmeen, Y., Wolfe, M. (2003). Evaluation of a mental health treatment court with assertive community treatment. *Behavioral Sciences & the Law, 21*, 415-427.
- *Cosden, M., Ellens, J., Schnell, J., & Yamini-Diouf, Y. (2005). Efficacy of a mental health treatment court with assertive community treatment. *Behavioral Sciences and the Law, 23*, 199-214.
- David A., van Os J., Jones P., Harvey I., Foerster A., Fahy, T. (1995). Insight and psychotic illness. Cross-sectional and longitudinal associations. *British Journal of Psychiatry 167*, 621-628.

- Deeks, J.J., Altman, D.G. & Bradburn, M.J. (2001) Statistical methods for examining heterogeneity and combining results from several studies in meta-analysis. *Systematic Reviews in Health Care. Meta-analysis in Context*. (eds M. Egger, G.D. Smith and D.G. Altman), pp 285-312. British Medical Journal Publishing Group, London.
- Deutsch, A. (1946). *The mentally ill in America. A history of their care and treatment from colonial times*. (3rd ed.). New York: Columbia University Press.
- Devine, E.C., & Cook, T. D. (1983). A meta-analytic analysis of effects of psychoeducational intervention on length of post-surgical hospital stay. *Nursing Research*, 32, 267-274.
- Dickerson, F.B., Boronow, J.J., Ringel, N., & Parente, F. (1997). Lack of insight among outpatients with schizophrenia. *Psychiatric Services*, 48-195-199.
- Ditton, P.M. (1999). *Mental Health and Treatment of Inmates and Probationers*. (Bureau of Justice Statistics Bulletin NCJ 174463). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Draine, J.D., Salzer, M.S., & Culhane, D.P., & Hadley, T.R. (2002). Role of social disadvantage in crime, joblessness, and homelessness among persons with SMI. *Psychiatric Services* 53, 565-572.
- Draine, J.D., Wolff, N., Jacoby, J.E., Hartwell, S., & Duclos, C. (2005). Understanding community re-entry of former prisoners with mental illness: A conceptual model to guide new research. *Behavioral Sciences & the Law*, 23, 689-707.
- Durand, V.M. & Barolow. H. (2005). *Essentials of Abnormal Psychology*. (4th ed). Belmont, CA: Wadsworth Publishing Company.
- *Eckberg, D. (2006). *Evaluation of the Hennepin County mental health court*. Hennepin County, Minnesota. Fourth Judicial District Research Division.

- Elbogen, E. B. & Johnson, S. C. The intricate link between violence in mental disorder. *Archives of General Psychiatry*, 66, 152-161.
- Fagan, J. (1997). *The challenge of crime in a free society: Looking back ... looking forward*. U.S. Department of Justice, Office of Justice Programs. Washington, DC: U.S. Department of Justice.
- Feder, L. (1994). Psychiatric hospitalization history and parole decisions. *Law and Human Behavior* 18, 395–410.
- Fenton, W. S., Blyler, C. R., & Heinssen, R. K. (1997). Determinants of medication compliance in schizophrenia: Empirical and clinical findings. *Schizophrenia Bulletin*, 23, 637-651.
- *Ferguson, A., Hornby, H., & Zeller, D. (2008). *Outcomes from the last frontier: An evaluation of the Anchorage mental health court*. Anchorage, Alaska: Alaska Mental Health Trust Authority.
- Ferriter, M., & Huband, N. (2005). Does the non-randomized controlled study have a place in the systematic review? A pilot study. *Criminal Behaviour and Mental Health*, 15, 111-120.
- Fileccia, C. (2008). The treatment of mentally ill offenders: a description of mental health courts. Unpublished master's thesis, California State University, Long Beach. Retrieved on April 22, 2009 from the ProQuest database.
- Fisher, W.H., Roy-Bujnowski, K.M., Grudzinskas, A.J., Clayfield, J.C., Banks, S.M., & Wolff, N. (2006). Patterns and prevalence of arrest in a statewide cohort of mental health consumers. *Psychiatric Services*, 57, 1623-1628.
- Fisher, W.H., Silver, E., & Wolff, N. (2006). Beyond criminalization: Toward a

- criminologically informed framework for mental health policy and services research. *Administration and Policy in Mental Health and Mental Health Services Research*, 33, 554-557.
- Flashman L.A., & McAllister T.W. (2002). Lack of awareness and its impact in traumatic brain injury. *NeuroRehabilitation* 17, 285-96.
- Fleiss, J.L. (1994). Measures of effect size for categorical data. In H. Cooper & L.V. Hedges (Eds). *The handbook of research synthesis* (pp. 245-260). New York: Russell Sage Foundation.
- Glaser, D., & Eriz, E. (1988). *Evaluation research and decision guidance: For correctional, addiction-treatment, mental health, and other people-changing agencies*. New Brunswick, NJ: Transaction Books.
- Goldkamp, J. (1999). Drug court response: Issues and implications for justice change. *Albany Law Review*, 63, 961.
- GovTrack.us.S.714—11th Congress (2009). National Criminal Justice Commission Act of 2009, *GovTrack.us (database of federal legislation)*
<http://www.govtrack.us/congress/bill.xpd?bill=s111-714> (accessed Jun 16, 2009)
- Greenberg, G.A., & Rosenheck, R.A. Jail incarceration, homelessness, and mental health. A national study. *Psychiatric Services*, 59, 170-177.
- Gronfein, W. (1985). Incentives and intentions in mental health policy: A comparison of the Medicaid and community mental health programs. *Journal of Health and Social Behavior*, 26, 196-206.
- Grob, G.N. (1994). *The mad among us: a history of the care of America's mentally ill*. New York: The Free Press.

- Garcia-Campayo, J., et al. (2008). A meta-analysis of the efficacy of fibromyalgia treatment according to level of care. *Arthritis Research & Therapy, 10*, 81-105.
- Garret, C. (1985). Effects of residential treatment on adjudicated delinquents: A meta-analysis. *Journal of Research in Crime and Delinquency, 22*, 287-308.
- Gilks, W.R., Richardson, S., & Spiegelhalter, D.J. (1996). Markov chain monte carlo in practice. London: Chapman and Hall.
- Glass, G.V., McGaw, B., & Smith, M.L. (1981). *Meta-analysis in social research*. Beverly Hills, CA: Sage.
- Haddock, C.K., Rindskopf, D., & Shadish, W.R. (1998). Using odds ratios as effect sizes for meta-analysis of dichotomous data: A primer on methods and issues. *Psychological Methods, 3*, 339-353.
- Harrison, D.A., McLaughlin, M.E. & Coalter, T.M. (1996). Context, cognition and common method variance: Psychometric and verbal protocol evidence. *Organizational Behavior and Human Decision Processes, 68*, 246-261.
- Hedges, L. V. & Olkin, I. (1985). *Statistical methods for meta-analysis*. Orlando, FL: Academic Press.
- *Herinckx, H.A., Swart, S.C., Ama, S.M., Dolezal, C.D., & King, S. (2005). Rearrest and linkage among clients of the Clark County mental health court program. *Psychiatric Services, 56*, 853-857.
- Herman, M. (2005). Mental health court evaluations. An annotated review of the literature with commentary. Williamsburg, VA: National Center for State Courts.
- Higgins, J.P., Thompson, S.G., Deeks, J.J., & Altman, D.G. (2003). Measuring inconsistency in meta-analysis. *British Medical Journal, 327*, 557-560.

- Hoaglin, D.C. (1985). Summarizing shapes numerically: the g-and-g distributions: In Hoaglin, D.C., Mosteller, F., & Tukey, J.W. (Eds.) *Exploring data tables, trends and shapes* (pp.417-513). New York, N.Y. John Wiley & Sons, Inc.
- Hodgins, S., Tiihonen, J., & Ross, D. (2005). The consequences of conduct disorder from males who developed schizophrenia: Associations with criminality, aggressive behaviour, substance abuse, and psychiatric services. *Schizophrenia Research*, 78, 323-335.
- Hodgins, S., Cree, A., Alderton, J., & Mak, T. (2007). From conduct disorder to severe mental illness: Associations with aggressive behaviour, crime and victimization. *Psychological Medicine*, 38, 975-987
- Huedo-Medina, T.B., Sánchez-Meca, J., Marín-Martínez, F., & Botella, J. (2006). Assessing heterogeneity in meta-analysis: Q statistic or I^2 index? *Psychological Methods*, 11, 193-206.
- Human Rights Watch. (2003). *Ill equipped: U.S. prisons and offenders with mental illness*. Retrieved June 10, 2009, from: <http://www.hrw.org/reports/2003/usa1003/usa1003.pdf>
- Hunt, M. (1997). *How science takes stock: The story of meta-analysis*. NY: Russell Sage Foundation.
- Hunter, J.E., & Schmidt, F.L. (2000). Fixed effects vs. random effects meta-analysis models. *Journal of Selection and Assessment*, 8, 275-292.
- Hunter, J.E., & Schmidt, F.L. (2004). *Methods of meta-analysis: Correcting error and bias in research findings*. (2nd edition). New York: Academic Press.
- Insel, T.R. (2008). Assessing the economic costs of serious mental illness. *American Journal of Psychiatry*, 165, 6.
- James, D.J., & Glaze, L.E. (2006). *Mental health problems of prison and jail inmates* (Bureau of

- Justice Statistics Special Report NCJ 213600). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- James, D.V. (2006). Court diversion in perspective. *Australian and New Zealand Journal of Psychiatry, 40*, 529-538.
- Junginger, J., Claypoole, K., Laygo, R., & Crisanti, A. (2006). Effects of serious mental illness and substance abuse on criminal offenses. *Psychiatric Services, 57*, 879-882.
- Kaplan, A. (2007). Mental health courts reduce incarceration, save money. *Psychiatric News, 24*. Accessed August 2, 2007.
- Kessler, R.C., Heeringa, S., Lakoma, M.D., Petukhova, M., Rupp, A.E., Schoenbaum, M., et al. (2008). Individual and societal effects on mental disorders on earnings in the United States: Results from the National Comorbidity Survey Replication. *The American Journal of Psychiatry, 165*, 703-711.
- Kiesler, C.A., & Sibulkin, A.E. (1987). *Mental hospitalization: Myths and facts about a national crisis*. Newbury Park, California: Sage Publications.
- Lamb, R.H., Weinberger, L.E. (1998). Persons with severe mental illness in jails and prisons: A review, *Psychiatric Services, 49*, 483-492.
- Lamb, R.H., & Weinberger, L.E. (2005). The shift of psychiatric inpatient care from hospitals to jails and prisons. *Journal of American Academy of Psychiatry and Law, 33*, 529-534.
- Lamb, R.H., Weinberger, L.E., Gross, B.H. (1999). Community treatment of severely mentally ill offenders under the jurisdiction of the criminal justice system: A review. *Psychiatric Services, 50*, 907 -913.
- Lamb, R. H., Weinberger, L.E., & Marsh, B.H. (2007). Treatment prospects for persons with severe mental illness in an urban county jail. *Psychiatric Services, 58*, 782-786.

- Lamberti, J.S. (2007). Understanding and preventing criminal recidivism among adults with psychotic disorders. *Psychiatric Services, 58*, 773-781.
- Landenberger, N.A., & Lipsey, M.A. (2005). The positive effects of cognitive-behavioral programs for offenders: A meta-analysis of factor associated with effective treatment. *Journal of Experimental Criminology, 1*, 451-476.
- Latimer, J. (2001). A meta-analytic examination of youth delinquency, family treatment and recidivism. *Canadian Journal of Criminology, 43*, 237-253.
- Light, P. C. (2000). *Government's greatest achievements of the past half century*. Washington, D.C.: The Brookings Institution.
- Light, R. J., & Pillemer, D.B. (1984). *Summing up: The Science of Reviewing Research*. Cambridge, Massachusetts.: Harvard University Press.
- *Linhorst, D.M., & Chustack, R. (2008, May). *An evaluation of the first six years of the St. Louis County Municipal Mental Health Court*. Paper presented to St. Louis Department of Justice Services, St. Louis, MO.
- Lipsey, M.W. (1990). *Design sensitivity: Statistical power for experimental research*. Newbury Park, CA: Sage.
- Lipsey, M.W. (1992). The effect of treatment of juvenile delinquents: Results from meta-analysis (pp.131-143). In F. Lösel, D. Bender, & T. Bliesener (Eds.), *Psychology and law: International perspectives*.
- Lipsey, M.W., & Wilson, D.B. (1993). The efficacy of psychological, educational and behavioral treatment: Confirmation from meta-analysis. *American Psychologist, 48*, 1181-1209.
- Lipsey, M.W., & Wilson, D.B. (1998). Effective intervention for serious juvenile offenders: A

- synthesis of research. In R. Loeber & D.P. Farrington (Eds.), *Serious and violent juvenile offenders: Risk factors and successful interventions* (pp. 313-345). Thousand Oaks, CA: Sage.
- Lipsey, M.W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage
- Light, R. J., & Pillemer, D.B. (1984). *Summing up: The science of reviewing research*. Cambridge, MA: Harvard University Press.
- Littell, J. H., Corcoran, J., & Pillai, V. (2008). *Systematic reviews and meta-analysis*. New York: Oxford University Press.
- Longshore, D., Turner, S., Wenzel, S., Morral, A., Harrell, A., McBride, D., et al. (2001). Drug courts: A conceptual framework. *Journal of Drug Issues, 31*, 7-26.
- Lovell, D., Gagliardi, G.J., & Peterson, P.D. (2002). Recidivism and the use of services among persons with mental illness after release from prison. *Psychiatric Services, 53*, 1290-1296.
- Lurigio, A.J. (2000). Persons with severe mental illness in the criminal justice system: Background, prevalence and principles of care. *Criminal Justice Policy Review, 11*, 312-328.
- Lurigio A.J. (2001). Effective services for parolees with mental illnesses. *Crime and Delinquency, 47*, 446-461.
- Madden, R.G., & Wayne, R.H. (2003). Social work and the law: A therapeutic jurisprudence perspective. *Social Work, 48*, 338-347.
- Manderscheid, R.W., Atay, J.E., & Crider, R.A. (2009). Changing trends in state psychiatric hospital use from 2002 to 2005. *Psychiatric Services, 60*, 29 -34.
- Marshal, H.E. (1937). *Dorothea Dix Forgotten Samaritan*. Chapel Hill: The University of

North Carolina Press.

Martell D.A., Rosner, R., & Harmon, R.B. (1995). Base-rate estimates of criminal behavior by homeless mentally ill persons in New York City. *Psychiatric Services* 46, 96–601.

Mauer, M., & King, R.S. (2007). *A 25-year quagmire: The war on drugs and its impact on American society*. Washington, D.C.: The Sentencing Project.

*McNeil, D.E., & Binder, R.L. (2007). Effectiveness of a mental health court in reducing criminal recidivism and violence. *American Journal of Psychiatry*, 164, 1395-1403.

Mechanic, D. (1999). *Mental health and social policy: The emergence of managed care*. (4th ed.). Boston: Allyn & Bacon.

Mechanic, D., & Grob, G. (2006). Rhetoric, realities, and the plight of the mentally ill in America. In R.A. Stevens, C.E. Rosenberg & L.R. Burns (Eds.), *History and health policy in the United States: Putting the past back in*. Piscataway, NJ: Rutgers University Press.

Mechanic, D., & Rochefort, D.A. (1992). A policy of inclusion for the mentally ill. *Health Affairs*, 11, 128-150.

Meyer, R.G., & Weaver, C.M. (2005). *Law and mental health: A case-based approach*. New York: The Guilford Press.

Miller, W.R., Brown, J.M., Simpson, T.L., Handmaker, N.S., Bien, T.H., Luckie, L.H., et al. (1995). What works? A methodological analysis of the alcohol treatment outcome literature. In R.K. Hester & W.R. Miller (Eds.), *Handbook of alcohol treatment approaches: Effective alternatives* (2nd ed., pp-12-44). Needham Heights, MA: Allyn & Bacon.

Minsky, S., Vega, W., Miskimen, T., Gara, M., & Escobar, J. (2003). Diagnostic patterns

- in Latino, African American, and European American psychiatric patients. *Archives of General Psychiatry*, 60, 637-644.
- Moher D., Cook D.J., Eastwood S., Olkin I., Rennie D., & Stroup D.F. (1999). Improving the quality of reports of meta-analyses of randomised controlled trials: The Quorum Statement. *The Lancet*, 354, 1896-900.
- *Moore, M.E., & Hiday, V.A. (2006). Mental health court outcomes: A comparison of re-arrest and re-arrest severity between mental health court and traditional court participants. *Law and Human Behavior*, 30, 659-674.
- Monohan, J. (1992). Mental disorder and violent behavior: Perceptions and evidence. *American Psychologist*, 47, 511 -521.
- *Morin, M. L. (2004). Effects of criminal court-ordered mental health treatment on offender jail term and recidivism. *Dissertation UMI #3153757*.
- Morton S.C., Adams, J.L., Suttrop, M.J., & Shekelle P.G. (2004). *Meta-regression Approaches: What, Why, When, and How?* Technical Review 8 (Prepared by Southern California–RAND Evidence-based Practice Center, under Contract No 290-97-0001). AHRQ Publication No. 04-0033. Rockville, MD: Agency for Healthcare Research and Quality.
- Munetz, M.M., & Griffin, P.A. (2006). Use of the Sequential Intercept Model as an approach to decriminalization of people with serious mental illness. *Psychiatric Services*, 57, 544-549.
- Naples, M., Morris, L.S., & Steadman, H.J. (2007). Factors in disproportionate representation among person recommended by programs and accepted by courts for jail diversion. *Psychiatric Services*, 58, 1095-1101.
- National Commission on Correctional Health Care: *The health status of soon-to-be-*

- released inmates: A report to Congress.* (2002). National Commission on Correctional Health Care. Washington, DC.
- National Prison Rape Elimination Commission. (2009). *National Prison Rape Elimination Commission Final Report.* (Bureau of Justice Statistics Bulletin NCJ 226680). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- National Research Council. (1992). *Combining information: Statistical issues and opportunities for research.* Washington, DC: National Academy Sciences Press.
- *Neiswender, John R. (2005) *An outcome evaluation of the mental health court of King County, Washington: An affirmation of the specialty court system.* Doctoral dissertation, Washington State University, United States — Washington. Retrieved April 22, 2007, from ProQuest Digital Dissertations database. (Publication No. AAT 3206161).
- Newhill, C. E., & Korr, W.S. (2004). Practice with people with severe mental illness: Rewards, challenges, burdens. *Health & Social Work, 29,* 297-305.
- O'Connor v. Donaldson, 422 U.S. (1975).
- *O'Keefe, K. (2006. September). *The Brooklyn mental health court evaluation. Planning, implementation, courtroom dynamics, and participant outcomes.* New York, NY: Center for Court Innovation.
- Orfei, M.D., Robinson, R.G., Bria, P., Caltagirone, C., & Spalletta, G. (2008). Unawareness of illness in neuropsychiatric disorders: Phenomenological certainty versus etiopathogenic vagueness. *The Neuroscientist, 14,* 203-223.
- Orwin, R.G. (1994). Evaluating coding decisions. In H. Cooper & L.V. Hedges (Eds.), *The handbook of research synthesis* (pp. 139-162). New York: Russell Sage Foundation.
- Overton, R.C. (1998). A comparison of fixed effects and mixed (random effects) models for

- meta-analysis test of moderator variable tests. *Psychological Methods*, 3, 354-379.
- Peters, R.H., & Hills, H.A. (1997). *Intervention strategies for offenders with co-occurring disorders: What works?* Delmar N.Y: The National GAINS Center. Available:
<http://www.prainc.com/gains/publications/intervention.htm>
- Petrla, J., Ridgely, S.M., & Borum, R. (2003). Debating outpatient commitment: controversy, trends and empirical data. *Crime & Delinquency*, 49, 157-172.
- Petticrew, M., & Roberts, H. (2006). *Systematic reviews in the social sciences: A practical guide*. Malden, MA: Blackwell.
- Pogorzelski, W., Wolff, N., Pan, K., & Blitz, C. (2005). Behavioral health problems, ex-offender re-entry policies and the "Second Chance Act". *American Journal of Public Health*, 95, 1718-1724.
- President's New Freedom Commission on Mental Health: Interim Report of the President's New Freedom Commission on Mental Health*. (2002). Retrieved January 22, 2008, from mental health commission website:
http://www.mentalhealthcommission.gov/reports/Interim_Report.htm
- President's New Freedom Commission on Mental Health: Transforming Mental Health Care in America*. (2003). Retrieved January 22, 2008, from mental health commission website:
<http://www.mentalhealthcommission.gov/reports/FinalReport/toc.html>
- Pritzker, S. & McBride, A.M. (2005). *Service-learning and civic outcomes: From suggestive research to program models* (CSD Working Paper 05-12). St. Louis: Washington University, Center for Social Development.
- Public Law 106-515, *America's Law Enforcement and Mental Health Project*, (Nov. 13, 2000, 114 Stat. 2399).

- Public Law 108-414, *Mentally Ill Offender Treatment and Crime Reduction Act of 2004*, (Oct 30, 2004, 118 Stat. 2327).
- Pyne, J.M., Bean, D., & Sullivan, G. (2001). Characteristics of patients with schizophrenia who do not believe they are mentally ill. *The Journal of Nervous & Mental Disease*, *189*, 146-153.
- Puente, M. Care of mentally ill prisoners costly for jails. (2006, January 20). *The Plain Dealer*. Retrieved January 21, 2006, from <http://www.cleveland.com/printer/printer.ssf?/base/news/113774963955330.xml?nohio&coll=2>
- Quanbeck, C., Frye, M., & Altshuler, L. (2003). Mania and the law in California: Understanding the criminalization of the mentally ill. *American Journal of Psychiatry*, *160*, 1245-1250.
- Redlich, A.D. (2005). Voluntary, but knowing and intelligent? Comprehension in mental health courts. *Psychology, Public Policy and Law*, *11*, 605-619.
- Redlich, A.D., Steadman, H.J., Monahan, J., Robbins, P.C., & Petrila, J. (2006). Patterns of practice in mental health courts. *Law and Human Behavior*, *30*, 347-362.
- Reed, D.B. (2002, January/ February). Federal funding and further developments in mental health courts. *Community Mental Health Report*, *2*, 19.
- Reitzel, L.R., & Carbonell, J.L. (2006). The effectiveness of sexual offender treatment for juveniles as measured by recidivism: A meta-analysis. *Sex Abuse*, *18*, 401-421.
- Rice, D. P. & Miller, L. S. (1996). The economic burden of schizophrenia: Conceptual and methodological issues and cost estimates. In M. Moscarelli, A. Rupp, & N. Sartorius (Eds.), *Schizophrenia* (pp. 321-334). Chichester, UK: Wiley.

- Ridgely, S.M., Engberg, J., Greenberg, M.D., Turner, S., DeMartini, C., & Dembosky, J.W. (2007). *Justice, treatment and cost: An evaluation of the fiscal impact of Allegheny County Mental Health Court*. Santa Monica, CA: RAND Safety and Justice Department.
- Rooney, R. (1992). *Strategies for work with involuntary clients*. NY: Columbia University Press.
- Rooney, R. (2009). *Strategies for work with involuntary clients* (2nd ed). NY: Columbia University Press.
- Rosenthal, R. (1991). *Meta-analytic procedures for social research*. Thousand Oaks, CA: Sage.
- Rosenthal, M.C. (1994a). The fugitive literature. In H. Cooper & L.V. Hedges (Eds.), *The handbook of research synthesis* (pp. 86-94). New York: Russell Sage Foundation.
- Rosenthal, R. (1994b). Parametric measures of effect size. In *The Handbook of Research Synthesis* (eds H. Cooper & L. V. Hedges). Russell Sage Foundation.
- Rottman, D., & Casey, P. Therapeutic jurisprudence and the emergence of problem-solving courts. (July, 1999). *National Institute of Justice Journal*, 240, 12-19.
- Sabol, W.J., & Couture, H. (2008). Prison inmates at midyear 2007 (Bureau of Justice Statistics Bulletin NCJ 221944). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Shadish, W.R., & Haddock, C.K. (1994). Combining estimates of effect size. In H. Cooper & L.V. Hedges (Eds.), *The handbook of research synthesis* (pp. 261-281). New York: Russell Sage Foundation.
- Shadish, W.R., & Ragsdale, K. (1996). Random versus nonrandom assignment in controlled experiments: Do you get the same answer? *Journal of Consulting and Clinical Psychology*, 64, 1290 -1305.

- Sharpe, D. (1997). Of apples and oranges: Why validity issues in meta-analysis will not go away. *Clinical Psychology Review, 17*, 881-901.
- Sherman, L. W., Gottfredson, D., MacKenzie, D. L., Eck, J., Reuter, P., & Bushway, S. (1997). *Preventing crime: What works, what doesn't, what's promising*. Washington, DC: National Institute of Justice.
- Sherman, L.W., Gottfredson, D.C., MacKenzie, D.L., Eck, J., Reuter, P. & Bushway, S.D. (1998). Preventing crime: What works, what doesn't, what's promising [Web site data files]. *National Institute of Justice, Research in Brief*. Washington, DC: National Institute of Justice.
- Smith, T. W. (2006). Measurement in health psychology research. In H. S. Friedman & R. C. Silver (Eds.), *Foundations of health psychology* (pp. 19-51). New York: Oxford University Press.
- *Sneed, Z., Koch, D.S., Estes, H., & Quinn, J. (2006). Employment and psychosocial outcomes for offenders with mental illness. *International Journal of Psychosocial Rehabilitation, 10*, 103-112.
- Soderstrom, I.R. (2007). Mental illness in offender populations: prevalence, duty and implications. *Journal of Offender Rehabilitation, 45*, 1- 17.
- Solomon, P., & Draine, J. (1995). Issues in serving the forensic client. *Social Work, 40*, 25-33.
- Solomon, P., Draine, J., & Marcus, S.C. (2002). Predicting the incarceration of clients of the psychiatric probation and parole service. *Psychiatric Services, 53*, 50-56.
- Solomon, A.L., Osborne, J.W.L., LoBuglio, S.F., Mellow, J., & Mukamal, D.A. (2008). *Life after lockup: Reentry from jail to the community*. Washington, D.C., Urban Institute.
- Souza, J.P., Pileggi, C., & Cecatti, J.C. (2007). Assessment of funnel plot asymmetry and

- publication bias in reproductive health meta-analyses: an analytic survey. *Reproductive Health*, 4:3.
- Stanley, T.D. (2001). Wheat from chaff: Meta-analysis as quantitative literature review. *The Journal of Economic Perspectives*, 15, 131-150.
- Steadman, H.J., Davidson, S., & Brown, C. (2001). Mental health courts: Their promise and unanswered questions. *Psychiatric Services*, 52, 457-458.
- Steadman, H.J., Monahan, J., & Hartstone, E. (1982). Mentally disordered offenders: A national survey of patients and facilities. *Law and Human Behavior*, 6, 31-38
- Steadman, H.J., & Redlich, A.D. (2006). *Final report: An evaluation of the Bureau of Justice Assistance Mental Health Court Initiative*. National Institute of Justice (NIJ), Washington, DC. Retrieved June 27, 2007, from <http://www.ncjrs.gov/pdffiles1/nij/grants/213136.pdf>
- Steadman, H.J., Osher, F.C., Clark Robbins, P., Case, B., & Samuels, S. (2009). Prevalence of serious mental illness among jail inmates. *Psychiatric Services*, 60, 761-765.
- Substance Abuse and Mental Health Services Administration. *Results from the 2002 National Survey on Drug Use and Health: National Findings* (Office of Applied Studies, NHSDA Series H-22, DHHS Publication No. SMA 03-3836). Substance Abuse and Mental Health Services Administration, Rockville, MD, 2003.
- Sutton, A.J., & Higgins, J.P.T. (2007). Recent developments in meta-analysis. *Statistics in Medicine*, 27, 625-650.
- Swank, G. & Winer, D. (1976). Occurrence of psychiatric disorder in a county jail population. *American Journal of Psychiatry*, 133. 1331-1333.
- Swanson, J.W., Van Dorn, R.A., Swartz, M.S., Smith, A., Elbogen, E.B., & Monahan, J.

- (2008). Alternative pathways to violence in persons with schizophrenia: The role of childhood antisocial behavior problems. *Law and Human Behavior*, 228-240.
- Swartz, J.A. & Lurigio, A.J. (2007). Serious Mental Illness and Arrest. The generalized mediating effect of substance abuse. *Crime and Delinquency*, 53, 581-604.
- The Sentencing Project. (2002, January). *Mentally ill offenders in the criminal justice system: An analysis and prescription*. Washington D.C. Retrieved January 23, 2008, from www.sentencingproject.org/pdfs/9089.pdf
- * Teller, J. L., Ritter, C., Salupo Rodriguez, M., Munetz, M. R., & Gil, K. R. (2004). *Akron Mental Health Court: Use of services by participants during the first two years*. Kent, OH: Ohio Department of Mental Health.
- Teplin, L.A. (1984). Criminalizing mental disorder: The comparative arrest rates of the mentally ill. *American Psychologist* 39, 794-803.
- Teplin, L. A. (1990). The prevalence of severe mental disorder among male urban jail detainees: Comparison with epidemiologic catchment area program. *American Journal of Public Health*, 80, 663-669.
- Teplin, L.A., Abram, K.M., & McClelland, G.M. (1996). Prevalence of psychiatric disorders among incarcerated women: Pretrial jail detainees. *Archives of General Psychiatry*, 53, 505-512.
- Teplin, L. A., Abram, K.M., & McClelland, G.M. (1997). Mentally Disordered Women in Jail: Who Receives Services?" *American Journal of Public Health*, 87, 604-609.
- Thompson, M., Osher, F., & Tomasini-Joshi, D. (2007). *Improving responses to people with*

- mental illness. The essential elements of a mental health court.* Council of State Governments Justice Center. Washington, DC: U.S. Department of Justice, Bureau of Justice Assistance.
- Torrey, E.F. (1988). *Nowhere to go. The tragic odyssey of the homeless mentally ill.* New York: Harper & Row.
- Torrey, E.F., Stieber, J., Ezekiel, J., Wolfe, S. M., Sharfstein, J, Noble, et al. (1992). *Criminalizing the seriously mentally ill: The abuse of jails as prisons.* Public Citizen's Health Research Group and the National Alliance for the Mentally Ill.
- Torrey, E.F., Zdanowicz, M. (2001). Outpatient commitment: What, why and for whom. *Psychiatric Services, 52*, 337-341.
- *Trupin, E., & Richards, H. (2003). Seattle's mental health courts: Early indicators of effectiveness. *International Journal of Law and Psychiatry, 26*, 33–53.
- *Trupin, E., Richards, H. J., Lucenko, B., & Wood, P. (2000). *Phase I process evaluation and preliminary outcomes data for the King County District Court Mental Health Court.* Retrieved February 3, 2007 from <http://www.metrokc.gov>.
- *Trupin, E., Richards, H., Wertheimer, D. M., & Bruschi, C. (2001). City of Seattle, mental health court evaluation report. Seattle, Washington: Seattle Municipal Court.
- Tyuse, S.W., & Linhorst, D.M. (2005). Drug courts and mental health courts: Implications for social work. *Health & Social Work, 30*, 233-241.
- Van Vleet, R.K., Hickert, A.O., Becker, E.E., & Kunz, C. (2008). *Evaluation of the Salt Lake County Mental Health Court final report.* Utah Criminal Justice Center: University of Utah.
- Valentine, J. C. & Cooper, H. (2003). *Effect size substantive interpretation guidelines:*

- Issues in the interpretation of effect sizes.* Washington, DC: What Works Clearinghouse.
- Vaughn, M.G., & Howard, H.O. (2004). Adolescent substance abuse treatment: A synthesis of controlled studies. *Research on Social Work Practice, 14*, 325-335.
- Vera Institute of Justice. (2006, June). *Confronting confinement: A report of the Commission on Safety and Abuse in America's Prisons.* New York, NY. Retrieved June 9, 2007, from http://www.prisoncommission.org/pdfs/Confronting_Confinement.pdf
- Wallace, C. Mullen, P.E., & Burgess, P. (2004). Criminal offending in schizophrenia over a 25-year period marked by the deinstitutionalization and increasing prevalence of comorbid substance use disorders. *American Journal of psychiatry, 161*, 716 -727
- Wells, K. & Littell, J.H. (2009). Study quality assessment in systematic reviews of research on intervention designs. *Research on Social Work Practice, 19*, 52-62.
- West, H.C. & Sabol, W.J. (2009). *Prisons inmates at midyear 2008-statistical tables* (Bureau of Justice Statistics Bulletin NCJ 225619). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Wilson, D.B., Gallagher, C.A., & MacKenzie, D.L. (2000). A meta-analysis of corrections based education, vocation, and work programs for adult offenders. *Journal of Research in Crime and Delinquency, 37*, 347-368.
- Wilson, S.J., Lipsey, M.W., & Derzon, J.H. (2003). The effects of school-based interventions programs on aggressive behavior: A meta-analysis. *Journal of Consulting and Clinical Psychology, 71*, 136-149.
- Wilson, D.B., MacKenzie, D.L., & Mitchell, F. N. (2005). *Effects of correctional boot camps on offending.* A Campbell Collaboration systematic review, available at <http://www.aic.gov.au/campbellcj/reviews/titles.html>

- Wilson, D.B., Mitchell, O., & MacKenzie, D.L. (2006). A systematic review of drug court effects on recidivism. *Journal of Experimental Criminology*, 2, 459-487.
- Woodward, H. Proposal adds services for inmates with mental illness. (2004, April 26). *The Olympian*. Retrieved June 3, 2006 from:
http://www.theolympian.com/home/news/20040412/topstories/25384_Printer.shtml
- World Health Organization. (2003). *Investing in mental health*. Retrieved July 30, 2007 from:
http://www.who.int/mental_health/media/investing_mnh.pdf
- Wu, E.Q., Birnbaum, H.G., Shi, L., Ball, D.E., Kessler, R.C., Moulis, M., et al. (2005). The economic burden of schizophrenia in the United States in 2002. *Journal of Clinical Psychiatry*, 66, 1122-1129.
- WGBH Educational Foundation. (n.d). *In Congress—mental health courts*. Retrieved January 22, 2008 from <http://www.pbs.org/wgbh/pages/frontline/shows/crime/trial/mhcourts.html>
- Yanos, P.T., Roe, D., Markus, K., & Lysaker, P.H. (2008). Pathways between internalized stigma and outcomes related to recovery in schizophrenia spectrum disorders. *Psychiatric Services*, 59, 1437-1442.