Factors Associated with Client Satisfaction at Community-Based Mental Health Agencies in Ohio

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Chrisanne Wilks, MPA
Graduate Program in Public Health

The Ohio State University

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Dissertation Committee:
Professor Allard Dembe, Advisor
Professor Tamara Davis
Professor Sharon Schweikhart
Professor Abigail Shoben
ABSTRACT

Objectives: This research examines client, case manager, and agency factors including funding, that are associated with client satisfaction at community-based mental health agencies (CMHAs) in Ohio. There were three specific research objectives. The first was to examine the ways in which client satisfaction data are collected and used by CMHAs. Second, this research evaluated the differences between client and case manager perceptions of client satisfaction. Finally, this research evaluated the extent to which agency funding and other factors influence levels of client satisfaction.

Methods: A cross sectional survey-based study was completed using three questionnaires administered to agency administrators (N=38), clients (N=338), and case managers (N=185) at CMHAs in Ohio. The independent variables and cofactors examined in this research include agency expenditure per client, mean staff salary, proportion of funding from Medicaid, state dollars, ADAMH Boards, private insurance, and grants, agency characteristics (location, years providing services, size), county-level tax revenue per capita, and client and case manager socio-demographic variables (including race, gender, age, education status, chronic physical disease status, and relationship status). Level of client satisfaction was the dependent variable. Both logistic and multivariable regression were used to explore the relationships between independent variables and client satisfaction scores and to account for the differences between client and case manager perceptions of client satisfaction. A stepwise model building process was used to develop a best-fit model using the independent variables explored in this study.
Results: All respondent agencies (N=38) report collecting client satisfaction data and using data to improve services. Agency characteristics including size, location, and years providing services were not associated with whether agencies considered client satisfaction data to be a priority. Based on the data gathered in this study, the mean client satisfaction score for participating agencies was 83.9%. On average, case managers perceived clients to be less satisfied than the clients’ report. Agency expenditures per client and average staff salary were not found to have a statistically significant relationship with client satisfaction scores. However, the proportion of funding from grants, from state dollars, and caseload size was found to be associated with client satisfaction scores. Overall, the cofactors that had the most explanatory power involved clients’ perspectives about whether agency staff sought client feedback, and clients’ overall outlook on mental health services.

Conclusion: Variables that are most closely related to clients’ perspectives and outlook seem to have the most influence on client satisfaction scores when compared to agency-related and funding related variables. Agencies may improve client satisfaction scores by demonstrating that client feedback is an important part of the agencies self-evaluation and by decreasing caseload size. The study also shows variation in the methodology used to collect client satisfaction data. Creation of standardize client satisfaction data collection methodology may improve the transparency and the usefulness of client satisfaction data for CMHAs. Finally agencies should always adjust for social desirability, past service experience, and perception of impairment in analysis of quantitative client satisfaction data.
DEDICATION

This dissertation is dedicated to individuals in recovery, to the staff who serve individuals in recovery, and to Denniston and Marlene.
ACKNOWLEDGMENTS

I would like to express my appreciation to a number of individuals and agencies for their instrumental support in this research. At the same time, the content of the dissertation is not a reflection on any of the parties named below. Thank you to Dr. Dembe without whom this work could not have been completed. Many thanks also to the rest of my dissertation committee, Tamara Davis, Sharon Schweikhart, and Abigail Shoben. The gathered expertise of this group of individuals was essential for the successful completion of the dissertation. For funding, encouragement, and support I would like to thank the Ohio Department of Mental Health and Addiction Services, especially Dr. Kraig Knudsen and Helen Anne Sweeney. Thank you also to Tamalpais Matrix Systems for granting permission to use the Client Satisfaction Questionnaire as a part of this research. I am indebted to those ADAMH boards, community mental health agency leaders, case managers, clients, and support staff across Ohio, who with enthusiasm supported and encouraged this research.

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Vita

1999 ....................................................... B.A., Anthropology, Yale University

2003 .......................................................... M.P.A., New York University

2010 to present ........................................ Doctoral Candidate, College of Public Health,
                                            The Ohio State University

Fields of Study

Major Field: Public Health

Minor Field: Mental Health
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<th>Description</th>
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<tr>
<td>AAPOR</td>
<td>American Association for Public Opinion Research</td>
</tr>
<tr>
<td>ADAMH</td>
<td>Alcohol Drug and Mental Health</td>
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<tr>
<td>Adj.</td>
<td>Adjusted</td>
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<tr>
<td>AHRQ</td>
<td>Agency for Healthcare Research and Quality</td>
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<tr>
<td>CARF</td>
<td>Commission on Accreditation of Rehabilitation Facilities</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>CMHA</td>
<td>Community-based Mental Health Agency</td>
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<tr>
<td>CI</td>
<td>Confidence Interval</td>
</tr>
<tr>
<td>CL</td>
<td>Confidence Limit</td>
</tr>
<tr>
<td>CM</td>
<td>Case Manager</td>
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<tr>
<td>CMS</td>
<td>Center for Medicare and Medicaid Services</td>
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<tr>
<td>COA</td>
<td>The Council on Accreditation</td>
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<tr>
<td>CPST</td>
<td>Community Psychiatric Supportive Treatment</td>
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<tr>
<td>CQI</td>
<td>Continuous Quality Improvement</td>
</tr>
<tr>
<td>CSQ</td>
<td>Client Satisfaction Questionnaire</td>
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<tr>
<td>CSV</td>
<td>Comma Separated Value</td>
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<tr>
<td>FDR</td>
<td>False Discovery Rate</td>
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<tr>
<td>ED</td>
<td>Executive Director</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>Form 990</td>
<td>Internal Revenue Service Return of Organizations Exempt From Income Tax</td>
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<tr>
<td>HCAHPS</td>
<td>Hospital Consumer Assessment of Healthcare Providers and Systems</td>
</tr>
<tr>
<td>HHS</td>
<td>United States Department of Health and Human Services</td>
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<tr>
<td>IRS</td>
<td>Internal Revenue Service</td>
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<tr>
<td>IOM</td>
<td>Institute of Medicine</td>
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<tr>
<td>LEAN</td>
<td>Toyota Production System Quality Improvement Model</td>
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<tr>
<td>MHSIP</td>
<td>Mental Health Statistical Improvement Program</td>
</tr>
<tr>
<td>MSA</td>
<td>Metropolitan Statistical Area</td>
</tr>
<tr>
<td>N</td>
<td>Sample Size</td>
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<tr>
<td>NAMI</td>
<td>National Alliance on Mental Illness</td>
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<tr>
<td>NIMH</td>
<td>National Institute of Mental Health</td>
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<tr>
<td>ODMH</td>
<td>Ohio Department of Mental Health</td>
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<tr>
<td>OhioMHAS</td>
<td>Ohio Department of Mental Health and Addiction Services</td>
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<tr>
<td>OR</td>
<td>Odds Ratio</td>
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<tr>
<td>PDCA</td>
<td>Plan Do Check Act Cycle for Quality Improvement</td>
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<tr>
<td>QI</td>
<td>Quality Improvement</td>
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<tr>
<td>SAMHSA</td>
<td>Substance Abuse and Mental Health Services Administration</td>
</tr>
<tr>
<td>SE</td>
<td>Standard Error</td>
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<tr>
<td>TJC</td>
<td>The Joint Commission</td>
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<tr>
<td>Vs.</td>
<td>Versus</td>
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<tr>
<td>WCI</td>
<td>95% Wald Confidence Interval</td>
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GLOSSARY OF KEY TERMS

Alcohol Drug and Mental Health (ADAMH) Board: As set out in the Ohio Revised Code the ADAMH board is responsible for a service district covering any county or combination of counties having a population of 50,000 individuals or more [1]. The 53 boards are staffed by 14-18 volunteer members (clinicians, clients, family members, others from the mental health care field) [2]. Boards are responsible for providing a unified system of treatment for persons with mental illness and or addictions, encouraging and promoting the delivery of quality, cost effective, culturally sensitive, and comprehensive services [1].

Case Manager: Throughout this dissertation, the use of the term case manager refers to the duties of a case manager rather than to a specific job title. The term is not used to suggest that individuals with mental illnesses are cases that need to be managed [3]. A case manager may also be called a care coordinator, a care manager, a service coordinator, or a case coordinator. Case management services may be provided by a variety of trained, licensed, and/or certified individuals in Ohio. Case management services may have a variety of different names. For instance, in Ohio, case management services are called Community Psychiatric Supportive Treatment (CPST). In Ohio, the services a case manager typically provides include: ongoing assessment of needs; assistance in achieving personal independence; coordination of the individual’s service plan and the services identified in the individual service plan including formal and natural supports; symptom monitoring, coordination and/or assistance in crisis management and stabilization as needed; advocacy and outreach; and mental health
interventions that address symptoms, behaviors, and thought processes [4]. Not all clients receive the case manager service.

**Client:** Clients are the recipients of services at community-based mental health agencies. Some of the literature referenced in this dissertation may use other terms such as *consumer, patient, recipient, member, or enrollee* to refer to the same group of people. The term *client* is used here for consistency.

**Client Satisfaction:** Client satisfaction is defined as the measurement of the extent to which services meet the clients’ wants and needs for treatment and support services [5]. Several factors, some of which are modifiable, determine client satisfaction. For example, how much a client believes he or she deserves successful outcomes is modifiable. Other factors are not modifiable such as a client’s race, sex, and age. Combined with other service outcomes client satisfaction is an essential part of the evaluation of mental health services.

**Client Satisfaction Questionnaire:** The Client Satisfaction Questionnaire (CSQ) was created in 1979 to address the need for a standardized survey instrument for assessing client satisfaction. It was originally developed as a 32-item tool but is now available in abbreviated scales of 18, 8, 4, and 3 questions. The tool was designed specifically for the health and human service setting. It is used widely to measure satisfaction in the outpatient mental health setting. The version of the instrument used in this research is the eight question CSQ-8. The tool has high reliability, internal consistency, and has been validated in numerous studies across the world [6]. Further details on the scoring of the tool and its use in the outpatient mental health setting is discussed in the Methods section of Study 2. Each of the eight questions that make up the CSQ is scored on a level from one to four. The minimum total score is 8 (25%) and the maximum is 32 (100%).
Community-based Mental Health Agencies (CMHAs): Private non-state operated agencies certified by the Ohio Department of Mental Health and Addiction Services to provide treatment and/or support services for individuals with mental illness. CMHAs receive funding from a variety of sources: Medicaid and Medicare, tax levy dollars through the local ADAMH board, state grant dollars through OhioMHAS, private foundation grants, government grants, private insurance, and fees for services.

Compensation: Compensation as reported on the IRS Form 990 includes cash payments in the form of salary and non-cash benefits that an agency provides to an employee in return for a term of service [7]. Prominent elements of compensation include salary, retirement benefits, and fringe benefits [7]. Compensation might include educational benefits, deferred payments, entertainment, and personal use of the agency’s property, vehicles, meals, and below-market loans [7]. Average compensation per staff member is calculated using total compensation as indicated on line 15 of the IRS form 990 divided by the number of paid staff. Average compensation is one of the predictor variables in Study 3.

Cultural Competence: Every individual has a culture; a set of beliefs, values, language, customs, environment, pattern of social behavior, and norms which frames the way in which that individual perceives and experiences the world [8]. Culture affects whether and how individuals interact with the mental health system. When services fail to take culture into consideration there is a risk those services will be ineffective. A culturally competent provider has the ability to respond to the cultural needs of clients. Culturally competent providers reflect the policies of cultural competence in their values, language, attitudes, and practices [9]. Cultural competency is core requirement for mental health professionals working with diverse groups of clients [10].
**Form 990:** Form 990 is an annual return required by the Department of Treasury’s Internal Revenue Service (IRS). Organizations required to file a Form 990 include federally tax-exempt organizations, non-exempt charitable trusts, and certain political organizations. Form 990 contains financial information about organizations including details on their sources of funding. Form 990 provides a summary of an organization's financial health at a single point in time [11]. Form 990 does not include a review of service effectiveness or outcome measures. On its own, financial information from Form 990 does not provide sufficient information for making comparisons between organizations. However, when other non-financial information, gathered from Form 990, regulatory agencies, or directly from the organizations themselves are available, comparisons between agencies become possible. Such information includes the organizations’ size, age, location, network affiliation, and the services it provides. IRS Form 990 is a public document, which is accessible directly from the organization completing it, from the IRS, or from websites such as Guidestar.com or the Foundation.org.

**Funding:** In Study 3, funding is used in the broadest sense to refer to sources of financing for community-based mental health services. More specifically as the predictor variable, funding is defined in five ways. The first represents the allocation of funding within each agency for staff compensation (e.g., average annual salary per staff); the second represents dollars expended per client. The third represents sources of funding. Funding sources are broken down into two groups: insurance vs. grants). The fourth measure of funding represents the proportion of the total program revenue from each funding source. The fifth funding variable is the change in revenue across two years (2011-2012). The methods section for Study 3 gives a more complete explanation of how the measures are calculated.
**Government Grants**: In the “Statement of Revenue” section of the IRS Form 990, agencies are required to report all sources of revenue including government grants. Government grants are defined as “the total amount of contributions in the form of grants or similar payments from local, state, or federal government sources [7].” For the purposes of Study 3, government grants include grant funding from OhioMHAS (previously Ohio Department of Mental Health (ODMH)), local county boards, and federal authorities like the Substance Abuse and Mental Health Services Administration (SAMHSA).

**Mental Health Block Grant**: Block grants are provided by SAMHSA to states. The grants are a form of flexible funding that allow states to offer services or create programs that might not otherwise be receive funding. Block grant dollars may be used to fund services related to treatment, prevention, and recovery supports. Grant dollars are important for funding services for individuals without insurance, and services not covered by Medicaid or Medicare. States are required to submit an annual application and to collect performance and outcome data as a requirement of the grant [12].

**Medicaid**: A joint federal and state program for individuals with low incomes and for other carve out groups that helps with health care costs [13]. In Ohio, the state pays $.37 for every Medicaid dollar and the federal government pays the remainder [14]. Medicaid is the largest single payer for mental health services [14-18]. As costs increase for mental health and funding decreases, states often enact cost containment steps through Medicaid by limiting eligibility, or reducing reimbursement rates to providers [18].

**Mental Illness**: OhioMHAS describes mental illnesses as biologically based brain disorders that disrupt a person's thinking, feeling, mood, daily functioning, and ability to relate to others.
People affected can be of any age, race, nationality, sex, gender identity, religion, education level, or income. This definition promotes the idea that mental illnesses, like physical illnesses, are conditions related to biology and therefore should not be stigmatized. This definition also supports the assertion that with proper treatment and supports, recovery from mental illness is possible. The definition is consistent with that used by the National Alliance on Mental Illness (NAMI).

**Per capita tax revenue**: Using data from the department of taxation, per capita tax revenue was calculated by dividing the total property taxes in each county by the total population in that county. Per capita tax revenue is used as a proxy for county level wealth relative to other counties. Some states use similar measures to perform need-based allocations of state mental health funds [19]. To provide some context, the range of per capita tax revenue was from $12.02 in Scioto County to $43.54 in Ottawa County. Franklin County has a per capita tax revenue of $22.31. Counties were divided into groupings by per capita tax revenue in order to create the sampling strata used for Studies 2 and 3.

**Person-centered planning (PCP)**: “is a process for defining the life a person wishes to live and then describing what needs to be accomplished to assist that person in moving towards that life. It is rooted in values, goals, and outcomes important to the person but takes into account other critical factors that have an impact on his or her life, for example, family and agency views, a person’s disability, funding, and community supports” [20].

**Program Service Revenue**: The Program Service Revenue section of the IRS Form 990 is a part of the “Statement of Revenues.” Agencies are required to list their five largest sources of revenue. Program service revenue includes income received from Medicare and Medicaid, payments and
fees from clients and their guarantors (including private insurance), and unrelated trade or business activities that generate fees [7]. The proportion of revenue listed as program service revenue is used as one of the predictor variables in Study 3.

**Provider:** An agency that delivers treatment (such as counseling and medications), and support services (such as case management, client education, crisis hotlines, and vocational services) to individuals who live with mental illness and or substance use disorders. A provider will most often refer to an agency, but on occasion may be used to refer to an individual who works for one of these agencies and delivers services.

**Quality:** As defined by the Institute of Medicine (IOM), quality in health related fields is “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge [21].”

**Quality Improvement:** Quality Improvement (QI) refers to efforts to increase or improve processes, structure, or results at service agencies. QI involves the measurement of quality across several dimensions [22]. The Health Resource Services Administration indicates that QI “consists of systematic and continuous actions that lead to measurable improvement in health care services and the health status of targeted patient groups [23].” The principles of a successful QI program include viewing QI as a related to systems and processes, as focused on clients, interactions between groups and teams, the use of data to drive process change [23].

**Recovery-Oriented Care:** Recovery-oriented care involves mental health treatment and services, which promote the idea that individuals can recover from mental illness in a way that is meaningful to each individual. Recovery involves a combination of conditions that are centered on the individual client (internal conditions), as well as external conditions which facilitate
recovery [24]. Internal conditions include feelings of hope, healing, empowerment, and connection to others. External conditions include effective treatment and supports, and an environment free of stigma. SAMHSA indicates that recovery is now the key goal of mental health services[25].

**Services**: A variety of treatments and supports that are provided by community-based mental health agencies [12]. Services include behavioral health counseling and therapy, mental health assessment, pharmacologic management, partial hospitalization, community psychiatric supportive treatment, peer counseling, referral services, adult education, vocational services, housing, forensic services, prevention, medical care, recreation, assertive community treatment, and occupational therapy. Agencies rarely provide all of these services. Clients must often use several agencies to fulfill all of their service needs.
CHAPTER 1: INTRODUCTION

Untreated mental illness, especially severe mental illness, has a devastating impact on the health, safety, independence, and wellbeing of individuals who live with it [26]. The negative impact of mental illness may also be seen in loss of income and workforce productivity [16, 27-29], premature loss of life [30], and increased health care costs [31]. Fortunately, evidence shows that quality treatment significantly improves the chances of recovery for individuals with mental illness [16, 32]. In short, higher quality services enhance the likelihood that individuals with mental illness will live more productive and independent lives.

Unfortunately, access to treatment and supports, and the quality of treatment once attained vary greatly across the mental health service landscape [33]. Between one third and two thirds of individuals who need services are unable to access those services [32, 34]. For those who do receive mental health services, outcomes are often suboptimal. Individuals with mental illness have shorter life expectancies, higher unemployment rates, more chronic medical conditions, and poorer quality of life when compared to the general population [35, 36].

The first strategy to decreasing the burden of mental illness is for policy makers and funders to commit to broader offerings of services proven effective. The second strategy is to focus on ensuring that existing services are of the highest quality through service evaluation and quality improvement initiatives. Service evaluation is essential to the identification of and promulgation of programs and services that provide the best care. However, an evaluation is only as good as the metrics on which it is based. Quality metrics are still being developed for
mental health services. Existing measures of quality are sometimes underutilized, as is the case with measures of client satisfaction.

A variety of factors has contributed to the dearth of standardized metrics for evaluating care in mental health. First, there remains inadequate scientific understanding of the causes and progression of mental illness [37]. The lack of understanding has hindered development of effective pharmacological and psychosocial treatments and supports for individuals with mental illness. Without the evidence of a treatment’s effectiveness, it is difficult to develop metrics for evaluating its success. Second, even in instances where an evidence-base exists, there is a gap between recommendations for treatment and the actual care being provided [22]. Third, the mental health field is suffering a shortage of appropriate workforce trained in culturally competent evidence-based practices [37-39]. Fourth, authority over the mental health service system is decentralized. Service requirements and quality metrics vary across and within service systems, resulting in fragmentation[39]. Providers must report different or redundant metrics to funders, regulatory agencies, managed care organizations, insurers, and accrediting organizations [40]. Several of these factors may be distilled to insufficient resources for both services and research. Historically, insufficient resources have been allocated for appropriate services and the identification and measurement of useful indicators of quality in the field of mental health services [39]. The budget for mental health services research was only 16% of the public and non-profit health services research budget in 2012 [41].

The result is the infrastructure to support activities like evaluation, and ongoing quality improvement is “less well-developed” in mental health when compared to general health [42]. For instance, hospitals are evaluated on key standardized measures such as mortality rates and re-hospitalization rates for various conditions, the frequency of adverse events, and the level of
patient satisfaction. Hospitals may use data which evaluates the services they provide to identify areas in need of quality improvement. Specifically, many studies show that hospitals use patient satisfaction data to engage in quality improvement [43-50]. This is not the same in mental health services. There is a need for research that might help improve the effective collection and integration of client satisfaction data for service evaluation and quality improvement processes of mental health services.

Client satisfaction is an extremely meaningful measure of service effectiveness and quality for three reasons [51-54]. First, metrics for evaluating performance are under-studied in mental health. Second, satisfaction is closely associated with technical clinical outcome measures [55-57] and treatment compliance [58]. Third, measures of client satisfaction are essential for evaluating the recovery-orientation of services [59]. Furthermore, research is necessary to understand which factors might influence client satisfaction so that service providers may improve the effectiveness of services.

In recent years, federal policy has shifted in a way that promotes effectiveness research, and standardization within the mental health service system. Two key policies demonstrate the increased priority that is being given to mental health. The Wellstone-Domenici Mental Health Parity and Addiction Equity Act of 2008 has elevated the status of mental health treatment in health plan benefits [60]. The Patient Protection and Affordable Care Act of 2010 expanded Medicaid and parity for Mental Health and provided additional support for the promotion of effective community-based mental health care [60]. In addition, many of the strategic initiatives of federal mental health research agencies include objectives indirectly supporting and encouraging research on client satisfaction.
The offices within Department of Health and Human Services (HHS), which are primarily responsible for research, funding, and oversight of mental health services, Agency for Healthcare Research and Quality (AHRQ), Substance Abuse and Mental Health Services Administration (SAMHSA), and National Institute of Mental Health (NIMH), all have strategic initiatives focusing on quality and costs. For instance, NIMH has a strategic objective targeted to “improve understanding of the factors that affect access to services, quality, and costs of services, and the means by which newly discovered effective mental health services are disseminated and implemented [61].” Furthermore, the Institute of Medicine (IOM) and the Office of the U.S. Surgeon General have repeatedly called for more research that can improve the availability and effectiveness of mental health services [32, 62]. The research in this dissertation on client satisfaction addresses those strategic initiatives, by examining the ways in which client satisfaction can be used as a tool for service evaluation and improvement, and by analyzing the impact of funding on client satisfaction.

The overall goal of this dissertation is to evaluate factors that influence client satisfaction. This dissertation is intended to contribute to the understanding of how client satisfaction is currently used, and the possibilities for how it can be used going forward. Three separate studies were performed. Study 1 focuses on assessing whether and how agencies use client satisfaction information. Study 2 measures client satisfaction with services using the Client Satisfaction Questionnaire (CSQ), a well-validated measurement tool commonly used to assess client satisfaction in community mental health settings. Study 2 also measures the views of case managers regarding client satisfaction and compares those ratings to the satisfaction scores from clients. Study 3 investigates whether satisfaction scores are associated with how an agency is funded and how the agency allocates the funds it receives.
The conceptual framework shown in Figure 1 describes the setting of interest (CMHAs) and the relationships of interest in the three studies. The model documents the presence of external macroeconomic, macro-political, and macro policy influences, which may affect the outcomes of all three studies. These factors might include the state of the economy, workforce availability, what particular political party is in power, or public reaction to the number of high visibility crimes committed by individuals with mental illness [63]. These external influences are not the focus of the study and are not explored. Yet, it is important to note that macro factors may affect the rate, configuration, and allocation of funding for mental health services, and that they are generally outside of the agency’s sphere of control [64, 65]. The framework shows that the central goal of Studies 1 and 2 is to expand the understanding of client satisfaction using surveys to agency administrators, clients, and case managers. Study 3 examines the relationship between funding variables (specific variables listed in the model) and client satisfaction. Furthermore, Study 3 involves an exploration of possible mediators or moderators of the relationship between funding and client satisfaction (referred to in the framework as cofactors).
Figure 1. Conceptual Framework

Research Questions

Study 1

Question 1: To what extent do CMHAs collect and use client satisfaction data and use it to improve service delivery.

- **Hypothesis 1a**: Most CMHAs engage in the collection of client satisfaction data, but may not do so consistently.
- **Hypothesis 1b**: CMHAs use non-validated survey methodology to a greater extent than they do validated survey methodology.
- **Hypothesis 1c**: Few CMHAs use client satisfaction data for quality improvement.
Hypothesis 2: Agencies that do collect and use client satisfaction data will be larger, located in urban settings, and will have more experience providing services.

**Study 2**

Question 1: How satisfied are clients with the services provided at CMHAs in Ohio?

- **Hypothesis 1:** Overall, clients in Ohio will indicate satisfaction scores of 80% or above with services received from CMHAs.

Question 2: To what extent do clients and case managers agree on levels of client satisfaction?

- **Hypothesis 1:** Client satisfaction will tend to be higher when case manager and client perceptions of client satisfaction are aligned, and client satisfaction will be lower when case manager and client perceptions of client satisfaction are not aligned.

**Study 3**

Question 1: How does funding affect client satisfaction scores?

- **Hypothesis 1a:** On average, client satisfaction scores will increase as expenditure per client and average staff salaries increase.
- **Hypothesis 1b:** On average, client satisfaction scores will increase as the percentage of funding from insurance payments (as compared to government grants) increases.
- **Hypothesis 1c:** On average, client satisfaction scores will be higher for agencies that reflect a positive change in revenue across two years.

Question 2: What agency-specific and other factors mediate or moderate the association between funding and client satisfaction?
Hypothesis 1: There are important agency-specific and other co-factors that influence the relationship between funding and client satisfaction, indicating that increased funding is only a partial predictor of better quality services as measured by satisfaction.

BACKGROUND ON AND SIGNIFICANCE OF CLIENT SATISFACTION

Satisfaction Theory and Conceptual Model

Critics have pointed out that client satisfaction measures are problematic for evaluating health care services. Sitzia and Wood (1997) suggest that one of the weaknesses of satisfaction research to date has been that there is insufficient attention paid to the construct and definition of satisfaction. They further argue that data collection far outpaces the theoretical development of the concept of client satisfaction. Other issues include how to define client satisfaction and what dimensions of the care experience should be included in measures of satisfaction. In addition, the validity of client satisfaction measures has been questioned because of the general tendency towards high client satisfaction scores. These criticisms are as relevant to client satisfaction in mental health as they were and are to patient satisfaction with medical care.

The term client satisfaction, as it applies to community mental health service users, is predated in the literature by references to patient satisfaction in the inpatient hospital setting. Much of the theory of satisfaction and the associated research have involved patient satisfaction studies in hospitals. This theoretical base has since been expanded or adapted to fit other service settings, including the community mental health setting.

Theories about satisfaction have tried to present frameworks that explain and/or predict the behaviors and attitudes of clients. Thus far, there has been no unifying theory
of satisfaction accepted as superior to others. However, there are two sets of theories, which appear regularly in the literature. The Discrepancy Theory, proposed by Michalos (1985), suggests that the worth of satisfaction measures is in gathering information about those who are dissatisfied with care [71, 72]. This theory suggests the focus of satisfaction research should be on dissatisfaction. Lebow (1983) conducted a review of health and mental health satisfaction studies and found that on average, approximately 10% of clients expressed clear dissatisfaction with care[73]. A Discrepancy Theory would suggest that analysis and subsequent services or procedural changes would focus on the 10% of clients who expressed dissatisfaction with care. Models following this theory focus on discovering why clients are dissatisfied and if appropriate make changes to address the dissatisfaction.

Other theories of satisfaction, referred to as “gap theories” suggest that satisfaction measures the gap between client expectations and experiences. These theories are based on the understanding that one of the determinants of satisfaction is how well services meet the previously established expectations of the client. The goal of satisfaction research based on gap theories is to determine whether the gap has been minimized [74]. Gap theories vary in their definition of what an expectation is, and have been criticized for not addressing the issue of patients (clients) with low expectations [75]. Clients with low expectations about what outcomes they should expect from services may express a high level of satisfaction with lower quality services.

This dissertation research is exploratory and does not rely on a specific theory of satisfaction. However, there is a conceptual model presented by Baker (1997) which is useful for understanding the relationship between the variables related to satisfaction [71].
Baker suggests that research on client satisfaction does not have to halt until investigators agree on the best theoretical models to predict and explain client satisfaction. He instead argues that satisfaction research can move forward with a knowledge of the determinants of satisfaction and the pathways by which various factors interact with satisfaction. Although his model was created for patients in a general medical practice, it is easily adapted for the community mental health care setting.

In the lower right hand box of Figure 2 are the individual characteristics that influence client satisfaction levels. Individual client characteristics also influence the client’s care preferences and the client’s treatment-related behavior. The conceptual model is useful for understanding what elements in the satisfaction pathway are amenable to intervention. The model is also useful for guiding analyses of satisfaction data. For instance, providers have the most influence over the elements of care or services available to clients. However, providing services is insufficient without knowing what the needs and wants are of the clients being served. The model shows that the provider’s ability to meet the preferences and the priorities
of the client will shape how the client interacts with staff and engage in services. Ultimately, client satisfaction and behaviors like treatment compliance are impacted by the provider’s ability to match the service needs and wants of the client. Although Baker’s model does not list outcomes in the upper right box as one of the factors impacted by client satisfaction other studies have demonstrated the relationship between client satisfaction and clinical outcomes [55]. Despite the absence of a unifying theory about client satisfaction, Baker used the existing research on client satisfaction to create a model of practical use to researchers and providers.

**Components of Satisfaction**

Although there remains debate on the theoretical framework that should be used to explain and predict client satisfaction, there is agreement that clients do make judgments about the services they use [66, 74]. There are several popular definitions of client/patient satisfaction. An earlier definition provided by Lebow (1982) defines satisfaction as “the extent to which treatment gratifies the wants, wishes, and desires of clients [76].” Marsden et al (2000) expand the definition provided by Lebow (1982) to include all services and not just treatment [5, 77]. They define client satisfaction as “the ability of services to meet the wants and needs of the client [5].” Both definitions, meant for clients in mental health care, are similar to well used definitions for patient satisfaction with medical care. For instance, Cleary and McNeil (1988) define patient satisfaction as “how patients react, emotionally and cognitively, to the structure, processes, and outcomes of services [78].” The definition provided by Cleary and McNeil (1988) shows that satisfaction has several components and is multidimensional [78]. The Marsden definition will be used for this research because it is easier to understand and was create for the mental health field.
Each definition for client satisfaction either explicitly states or alludes to the multidimensional quality of satisfaction. Ware et al. (1983) indicate that client satisfaction encompasses patient ratings which are objective, as well as ratings related to perceptions of the care experience [79]. This is what Cleary and McNeil (1988) refer to as the technical and interpersonal aspects of services [78]. Ware lists eight dimensions of service satisfaction, which together capture the objective and perception of care evaluations from patients. The eight dimensions are interpersonal interactions, technical quality of care, accessibility/convenience, finances, service outcomes, or efficacy, continuity of care, physical environment, and service availability.

Each dimension may capture both objective and perception-of-care information. For example, within the dimension of service availability, a client might be asked, “How long was the wait between appointments?” as an objective measure, and “Was the wait between appointments longer than you expected?” as a perception of care measure. These dimensions have formed the basis of much of the research around client satisfaction in medical care and in mental health care. For researchers and agency administrators it is important to understand which dimensions of satisfaction are being measured so that analysis of and action based on satisfaction data may be directed appropriately.

**Determinants of Satisfaction**

Understanding the components of satisfaction is important, but so is understanding what factors influence the level of satisfaction. Outside of the perceptions about whether services meet clients’ wants and needs, there are a set of determinants that influence satisfaction levels. Some determinants are associated with the client, and are called social
psychological antecedents, while others are associated with external non-client factors [66].

The five social psychological determinants of satisfaction include:

1. the actual service occurrence or event,
2. the value the encounter had for the client,
3. expectations the client brought into the encounter,
4. the rating of the interpersonal interaction compared to other such encounters,
   and
5. feelings of entitlement held by the client.

Baker’s model (see Figure 2) provides a depiction of how these determinants fit together to influence client services compliance, tenure with a provider, service needs, and satisfaction with services. An examination of the determinants show why client satisfaction is a challenging construct but also demonstrate the potential for client satisfaction measures to be used as telling indicators of service quality. On the challenging side, agencies must contend with the fact that within a satisfaction evaluation, only one determinant is fully within the agency’s control (Number 1 above), and two are partially within the agency’s control (2 and 4). While the remaining (3 and 5) seem outside of an agencies control. Even when an agency ensures objectively effective treatments, services that meet needs prioritized in a service plan, and quality interpersonal interactions, the client’s expectations and feelings of entitlement weigh into the calculation of satisfaction. The result of the importance of a client’s prior experience and expectations means that an agency is never being evaluated solely on the services it provides. Rather every client satisfaction score reflects how the agency being evaluated compares to previous services and takes into account the client’s prior life experiences and the
intensity of the client’s need. Given the mix of personal beliefs, past experience, and current
symptoms that serve as determinants of client satisfaction, one would expect more variation in
client satisfaction ratings. So, why do satisfaction scores tend to be so high on average?

Even within the list of determinants of client satisfaction, there is a hierarchy. Linder-
Pelz (1982) suggests that the perceptions and attitudes of clients, specifically the expectations
they have prior to receiving services, supersede their values, feelings of entitlement, and
feelings about the actual service interaction as a determinant of satisfaction [80]. It is a
tremendous statement to suggest that the client’s expectation about the service interaction is
more important to client satisfaction that the actual service interaction. Given the hypothesized
relationship between satisfaction scores and client expectations, one would expect more
variation in satisfaction. However, overall clients tend to be overwhelming satisfied. As it
relates specifically to client expectations, two conclusions may be drawn from high satisfaction
scores. First, it is possible that satisfaction scores tend to be high because of low client
expectations. Second, it is possible that clients have high expectations which are being met by
the services they use. The stigma of mental illness, the severe burden it presents, the poor
societal view of individuals with mental illness, the low rates of return to productive lives once
diagnosed with mental illness, and the scarcity and variation in quality treatment provide
overwhelming evidence that the first conclusion is the appropriate one.

On the positive side, the psychological determinants of client satisfaction are
modifiable. Through education, advocacy, and improved services, any of the five determinants
may be changed. The recovery movement has been key to helping individuals with mental
illness expect more of themselves and of the services they receive. Herein lies one of the
potential utilities in client satisfaction. We can more effectively use client satisfaction data and
make it a more useful measure if we evaluate both the determinants of satisfaction along with
the level of satisfaction, and if agencies engage in activities that positively modify the
determinants of satisfaction.

There are however, other client characteristics that are non-modifiable or not easily
changed, but that have also been shown to influence satisfaction levels. These determinants
include age, race, gender, health status, and educational level [66, 67, 81-85]. Studies vary in
the estimates of the extents to which these factors influence satisfaction but there is some
agreement that they may have some influence [86]. Demographic information (race,
educational status, age, and gender) will be collected on the surveys in Study 2 in order to test
the association of these variables with client satisfaction. As a part of the process of analyzing
client satisfaction data, it is important to understand what client characteristics vs. external
factors influence satisfaction. In this way, agencies and researchers can be realistic about which
factors are modifiable as a part of a quality improvement process. In addition, satisfaction
estimates may be standardized to account for influences due to non-modifiable factors, such as
client race.

Measurement Approaches

Client satisfaction data can be gathered using interviews, focus groups, by observation,
or with questionnaires [75]. Focus groups and interviews are informative, allowing those
collecting the data to understand the ‘why’s’ behind client perceptions. At the same time, focus
groups and interviews are also time-consuming and are difficult to put in a generalizable form.
It is also difficult to identify trends in focus group and interview data. Surveys are the most
accessible and most popular method for gathering satisfaction data. Several scales have been
developed for measuring client satisfaction of inpatient and outpatient mental health care targeting adults. Examples of scales include:

- 19-item Kentucky Consumer Satisfaction Instrument [87],
- 54-item Verona Service Satisfaction Scale [88],
- 16-item Charleston Psychiatric Outpatient Satisfaction Scale [89, 90],
- 51-item Patient Satisfaction Questionnaire [89], and the
- 25-item Perception of Care Survey.

Despite the availability of multiple instruments, client satisfaction is rarely measured in a systematic and regular way. Service providers often develop and use non-validated satisfaction scales within their agencies [91].

In a study examining the properties of client studies, Sitzia (1999) found that only 6% of studies used instruments which had been examined for content, criterion, construct validity, and reliability [92]. Furthermore, certain instruments are meant for a specific service setting such as the inpatient or outpatient medical care setting. Few instruments have been created for or validated with a mental health service population. The Client Satisfaction Questionnaire (CSQ-8) used in Study 2 has been tested repeatedly in the outpatient mental health setting and has been shown to have reliability. Even expertly created surveys have the weakness of forcing a broad set of experiences into a set of pre-selected answer choices. Some surveys allow respondents to write in answers but in the end, surveys are unable to provide an explanation for why individuals may or may not feel satisfied. The ideal scenario combines regular surveys of clients with intermittent focus groups or interviews.
Use of Client Satisfaction Data

Beginning in the late 1960s the collection of patient satisfaction data resulted from the convergence of an increased focus on measuring the effectiveness of medical care, a shift towards consumerism in public services, and a sociological interest in the relationship between doctors and patients. The importance of patient satisfaction data gradually increased at hospitals from the 70’s to the 90’s [66]. During the same period, satisfaction was also beginning to be collected in the field of mental health [93]. Since then, the measurement of client satisfaction has become an essential element in the evaluation of mental health service quality [94-96].

The impetus for the increasing focus on satisfaction came from several sources. In the medical field, Sitzia and Wood (1997) suggest that the interest in measuring patient attitudes or perceptions about care came about due to three separate mechanisms [66]. First, there was growing interest in measuring more than just the economic and clinical outcomes of care. This interest came mostly from government bodies and other third party payers who were interested in ensuring that dollars were being directed towards appropriate care [73]. Second, the interest in service evaluation was complemented by a growing interest in the field of sociology on interpersonal relationships, specifically the relationship between practitioners and patients [66]. Third, there was a growing movement of consumerism in social services, which encouraged hospitals to offer services that were more customer-oriented [66]. It is noteworthy that prior to these changes in thinking, practice, and scholarship, little attention had been given to the perceptions of patients [66].
Similar mechanisms have influenced the collection of client satisfaction data in the community mental health setting. The recovery movement, the change in expectations about the burden of mental illness throughout a person’s lifetime, an increased need for accountability, and a need for mechanisms to measure the efficacy of services, have all influenced the collection of satisfaction data in the community mental health setting [97]. Satisfaction measures have traditionally been used for one of four purposes: 1) to understand how clients perceive the services they receive, 2) to learn about the processes associated with services, 3) to evaluate the service experience, and 4) to meet accreditation or regulatory requirements [66, 98]. The third element, evaluating services can vary in scope and by the dimensions of satisfaction being measured. Clients may be asked to evaluate specific treatments, individual clinicians, programs, whole organizations, or even service systems [66]. For the purposes of this research, I am interested in client satisfaction scores that evaluate services at the agency-level. As mentioned above, the literature suggests that most mental health agencies collect client satisfaction data. This research will help OhioMHAS, ADAMH boards, and providers understand the current climate related to client satisfaction at CMHAs. The research may also be used to help guide plans on standardizing the collection of client satisfaction data.

At the completion of this dissertation, CMHAs will be provided with information for their decision-making tool kits. For some providers, the information will be new and for others it may affirm issues they have already identified. Specifically, agencies will know how other agencies perceive and take action on client satisfaction data. CMHAs will have a sense of whether they are pioneers, comparable, or lagging behind their peers. Second, in addition to having an estimate of client satisfaction, agencies will understand whether the case managers they employ
understand the wants and needs of clients. Finally, agencies will learn whether the decisions they and funders make about funding are associated with the level of satisfaction of the clients receiving services.
CHAPTER 2: COLLECTION AND USE OF CLIENT SATISFACTION DATA AT COMMUNITY-BASED MENTAL HEALTH AGENCIES (CMHAs) IN OHIO

Introduction

The focus of this study is to determine how CMHAs in Ohio collect and use client satisfaction data. Client satisfaction data has become a fundamental part of the evaluation of mental health services [51, 52, 58, 59, 98, 99]. Unfortunately, in the mental health field there is no single source of guidance about how to collect and use client satisfaction data to improve services. Consequently, each CMHA or local group of CMHAs devises and implements procedures regarding client satisfaction that are locally specific, or responsive to individual funders, regulators, or accrediting organizations [42]. This study provides information that will be useful to CMHAs, regulatory bodies, and policy makers concerning the behavior of CMHAs related to client satisfaction. Specifically, this study answers questions about the extent to which CMHAs prioritize and collect client satisfaction data, and how data is used after it is collected. This study is particularly relevant because it provides information that can be used to facilitate CMHA decisions on using client satisfaction data; the use of which is important to the effective growth and success of CMHAs [100-102]. CMHAs may use this information to benchmark their own actions against those of peers. This study provides the opportunity to disseminate information, which may not otherwise be shared beyond a local level. For regulators, the study demonstrates variations in CMHA behavior across Ohio, and provides a basis for movement towards standardization on client satisfaction data.
The success of all agencies, including CMHAs, is predicated on a detailed knowledge of the environment in which the agency functions [42], [101]. Information about the behavior of competitors and partners allows agencies to better assess their own performance [100, 103]. Decisions made without information from the environment in which an agency functions may prove detrimental to the future of that agency [104]. While administrators are aware of the behavior within their own agency, and perhaps other agencies in a local county network, it is difficult to gain knowledge of how other agencies within their broader service system are behaving. There is currently no state-level evaluation program for mental health agencies and the county-level administration of mental health services in Ohio, does not lend itself to broad information sharing [105]. This study provides an objective examination of CMHA behavior regarding client satisfaction that can be shared without cost with all CMHAs in Ohio.

**Study Aims**

Client satisfaction data is useful for improving the patient-centeredness of mental health care, and for evaluating the effectiveness of changes in services [94]. The research aim of this study is to understand how CMHAs in Ohio currently collect and use client satisfaction data. The data collected from this study will answer the question, to what extent do CMHAs collect client satisfaction data and use the data to improve service delivery. The study was guided by two main hypotheses based on the research literature. Hypothesis 1 is broken down into three parts. **Hypothesis 1a** is that most CMHAs engage in the collection of client satisfaction data, but may not do so consistently. **Hypothesis 1b** is that CMHAs use non-validated survey methodology to a greater extent than they do validated survey methodology. **Hypothesis 1c** is that few CMHAs will use the client satisfaction data they collect for quality improvement (QI).
Hypothesis 2 is that agencies that collect and use client satisfaction are larger, located in urban settings, and have been providing mental health services for a longer time than agencies that do not collect and use client satisfaction data.

Per Hypothesis 1a, the study will show that agencies collect client satisfaction data because those data are often required by regulatory authorities and accreditation agencies [98]. Hypotheses 1b and 1c are both supported by the lack of consensus in the mental health field about service evaluation [42, 106]. There is also an under-representation of research related to the collection and use of client satisfaction data in the literature. Vandiver and Corcoran (2013) indicate that there is no absence of appropriate instruments for evaluation [107]. However, unless a single standardized methodology (a specific instrument, rules for recruitment, frequency of administration, analytical methods, and use of results) is required by all funders, regulators, and accrediting bodies, agencies may have no motivation to choose appropriately validated instruments over those they design themselves [107]. In addition, many agencies may comply with requirements to gather client satisfaction data but may still not see the value in actively using client satisfaction data [94].

A search of the literature using the Medline and Web of Science™ research engines did not reveal many studies about the use of client satisfaction data in mental health agencies. However, a few of the existing studies demonstrate how useful client satisfaction data can be in both designing quality improvement interventions and evaluating their success. For example, Crosier, Scott, and Steinfeld (2012) completed a case study of a behavioral agency that engaged in a continuous quality improvement (CQI) process in order to improve client satisfaction [94]. The organization combined results from satisfaction surveys and focus groups to develop a QI plan focused on improving the client-clinician relationship, the variable expressed by clients as
being most important to their level of satisfaction. Over five years, the organization was able to make improvements in satisfaction and learned a great deal about effective organizational strategies [94].

A second study involved the unsuccessful implementation of a QI initiative targeted at improving the management of depression in a primary care setting. The authors report that there were no changes in outcomes, including client satisfaction, after the implementation of three interventions to improve care [108]. In this instance, client satisfaction surveys, which were administered before and after the intervention, were useful in evaluating the success of the intervention.

The expectation in Hypothesis 2, that agencies collecting and using client satisfaction data will be larger, will be located in urban settings, and will have more experience providing mental health care (e.g., older agencies), is based on findings in the literature about organizational change and innovation. First, the literature on change suggests that agency size is associated with performance on certain types of innovation due to the better access to resources available to a larger agency [109-114]. Lebow (1983) indicates that in both the health and mental health care fields, larger organizations are more likely to capture satisfaction data [73]. However, some of the literature shows that larger agency size has a negative association with innovation, likely due to the lack of flexibility that may come with the standardized behaviors in a large organization [109, 115, 116]. Other studies have shown that more experienced agencies are more likely to adopt change, as are agencies in urban locations [115].

Integration of client satisfaction data as a fundamental part of service evaluation represents a significant shift in attitude, behavior, and policy for many mental health agencies [98]. While client satisfaction data have been collected since the mid 1970’s, thinking formally...
about client satisfaction as a legitimate measure of service effectiveness, regularly collecting client satisfaction data, and using the data for quality improvement, all require agencies to change their behavior and adapt new ways of thinking. Overall, it has been shown that in the mental health field the ability to change is based on agency climate or characteristics such as the type of managerial style, agency size, affiliation, experience providing services, funding source, stage of development, treatment of employees, or access to resources [117-119].

Methods

Study Design

Study 1 employed a cross-sectional research design with both descriptive and analytical components. A questionnaire was used to gather satisfaction data from agency administrators about how their agency collects client satisfaction data and what is done with the information after it is collected. The analytical component of the study tested for significant associations between agency behavior related to client satisfaction and agency characteristics.

A cross-sectional design was appropriate for this study because the independent and dependent variables were being measured simultaneously. Additionally, cross-sectional surveys are useful for: 1) assessing information about perceptions, and 2) examining the data by population subgroups (e.g. large vs. small CMHAs) [120]. Unfortunately, cross-sectional studies only capture a single snapshot in time; hence, no information on trends or changes in variables can be analyzed using this study design.

Setting and Study Population

The designated target population for this study were the group of 419 community-based mental health agencies in Ohio that provide treatment and or support services to individuals
with mental illness. In summary, in order to qualify for study participation a CMHA had to meet the following criteria:

- The CMHA provided services to individuals with mental illness. In order to ensure agencies provided services for individuals with mental illness, each agency had to provide at least one Medicaid approved mental health service.
- The CMHA was credentialed by any of the three accrediting bodies: The Commission on Accreditation of Rehabilitation Facilities (CARF), The Council on Accreditation (COA), or The Joint Commission on Accreditation of Healthcare Organizations (TJC).
- The CMHA was located in the state of Ohio.
- The CMHA was certified by the OhioMHAS.

The contact list (sampling frame) of mental health agencies was provided by OhioMHAS. OhioMHAS only requires mental health agencies that access local ADAMH board funding or provide housing services to obtain OhioMHAS certification. There are a variety of support services agencies or treatment agencies that may provide services but do not require certification by OhioMHAS. Those agencies were not the target of this study. The contact list included 419 agency names, addresses, phone numbers, and dates of licensing with OhioMHAS. E-mail addresses were included for most agencies. Information about the number of services provided by each agency was gathered from the OhioMHAS client referral website. Of the list of 419 CMHAs, 99 agencies were excluded because they did not provide a Medicaid approved mental health service (see Figure 1). After the recruitment began it was discovered that four (4) agencies were closed, and one agency was not in the target population (did not provide Medicaid services), revising the target population to 315. Of the 315 agencies believed to represent all of the CMHAs of interest, e-mail addresses were missing for 26 agencies and for
another six (6) recruitment e-mails were returned as undeliverable. The maximum number of agencies that could have received the recruitment e-mail was 283. Since not all agencies in the target population were contacted, a census was not completed. Possible selection bias may occur if members of the target population that are not contacted differ in traits or behaviors that are relevant to the variables being studied [121].

<table>
<thead>
<tr>
<th>419 Sampling Frame</th>
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<tr>
<td>- 99 Did not provide at least one Medicaid approved MH service</td>
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<tr>
<td>= 320 Target Population</td>
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<tr>
<td>- 4 Agencies merged or closed</td>
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<tr>
<td>= 315 Revised Target Population</td>
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<td>- 26 Missing e-mail addresses</td>
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<td>- 6 E-mails returned as undeliverable</td>
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<tr>
<td>= 283 Agencies believed to have received recruitment</td>
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Figure 3. Sampling Frame and Number of Agencies Contacted

The primary agency administrator Chief Executive Officer (CEO) or Executive Director (ED) was the targeted respondent for the questionnaire. However, the CEO or ED could designate another member of the leadership staff to complete the survey such as the Director of Quality Improvement, the Compliance Officer, or the Chief Research Officer. The ability of the CEO or ED to designate the questionnaire to another individual more knowledgeable about the questionnaire content, was allowed in order to increase the possibility of factual reporting [122]. The study was submitted for human subjects research review to the Ohio State University Office of Responsible Research Practices. The OSU Institutional Review Board approved research documents, and the recruitment strategy, and the handling of data.
Recruitment

The systematic recruitment process is described below. Recruitment materials are included in the appendices.

1. On March 14, 2014, an introduction letter was sent to the Ohio Council of Behavioral Health and Family Services Providers (the Ohio Council), the association of community mental health agencies in Ohio. Fifty-three (53) letters were also sent to the local mental health boards. There are 88 counties in Ohio, but some boards represent multiple counties. The introduction letter announced the research project and its intended goals and requested that CMHAS be informed of the project. Several county boards responded that they would forward the information onto the agencies in their area and one county board allowed the researcher to complete a presentation at one of its meetings. Responses were received from 19 boards. No response was received from the Ohio Council.

2. On June 16, 2014, an introduction letter was sent to agencies via email giving them advanced warning about the research and associated surveys. Introduction letters were sent two weeks before the start of recruitment in order to increase response rates.

3. On June 30, 2014, a recruitment letter was sent to agencies via e-mail requesting they participate in Study 1 by completing the questionnaire online.

4. The online software was programmed to send reminders to agencies monthly during the data collection process.
On August 12, 2014, a second set of recruitment e-mails was sent to the same provider list, excluding agencies who had already responded. Recruitment and data collection continued through March 2015. The recruitment strategy was based on the literature which suggests that when completing surveys, executives respond most to four factors: 1) the relevance of the research topic to their work, 2) sufficient advanced notice of the request to participate in research, 3) promotion of the research project by others within their organization or their social network, and 4) multiple follow-up reminders [123]. Both the introduction and recruitment letters detailed that the research would be useful to the agencies by facilitating comparisons to other mental health agencies. The letters also outlined that the research would present a relatively low burden on the staff and clients from each agency.

**Survey Design and Data Source**

The content needed for this study was unavailable in existing survey instruments. However, questions administered to health care executives and other agency leadership were used as a guide to design the survey for this study. A brief questionnaire was constructed using the extensive research literature on the design and administration of research surveys. These texts provided guidance on how to construct survey questions, answer choices, identify weak questions, physically arrange questions, and how to present instructions [124-126].

Questionnaire design began with the research aims of the study and the list of concepts associated with the research question. The preliminary questions were designed using existing examples of agency administrator surveys, and several survey design texts. A list of questions was drafted and then refined. After the questions were drafted, they were subsequently vetted through three individuals who work as administrators in the Ohio mental health system (one administrator from OhioMHAS and two ADAMH board directors). These individuals reviewed
the content of the survey as well as the language in the survey (e.g., whether the term “clients” would be acceptable to CMHA administrators). They also read each question and described what concept or idea they thought the question was supposed to measure [122]. Questions were rewritten for clarity if the concept was unclear. The questionnaire was also piloted with four graduate students to ensure ease of understanding and lack of errors. Czaja and Blair (2005) indicate that a general audience can be used to test the instrument for logic and readability [127].

There were 24 questions included on the questionnaire about client satisfaction and agency demographics. Twenty-three questions included forced-choice responses. Some questions required one answer choice only. Others allowed an agency administrator to choose all of the responses that applied. Question types included attitude statements (e.g., Question 3), ranking formats (e.g., Question 15), and checklists (e.g., Question 12). The final question was a write in and asked for the agency’s name. The forced choice response option predominated because:

- it makes data easier group into categories, display and understand,
- categorical variables did not interfere with the analysis intended for this study,
- choosing an answer category instead of writing in an answer decreases the likelihood of item-level non-response, and
- for busy individuals who may have low motivation to participate, multiple choice responses are easier to complete than open-ended responses [128].

Questions designed with multiple choice or forced-choice responses do have disadvantages. This question type forces the respondent to select from a set of choices that may not perfectly
describe their situation. To accommodate this, an “other” response category was provided with each question and respondents were able to write in an answer.

**Agency Perceptions on Client Satisfaction Data**

A list of survey questions is found in Table 1 and the complete questionnaire, which includes answer choices, question prompts, and question skip dynamics, is included in Appendix B. Questions 1-3 were included to establish whether gathering information on client perspectives was a strategic priority for the agency. Question 2 served to document whether gathering information on client perceptions was a part of the explicit steps the organization takes towards achieving its goals [129]. Having information about how an agency views the perceived experiences of the individuals they serve provides a basis for interpreting answers to questions about the agency’s behavior. Questions 4-12 were included in order to determine the processes around the collection of client satisfaction data. Question 4 establishes whether client satisfaction data is collected from the clients served by the agency, while Question 5 and 6 establishes whether the data is collected by the respondent agency or by another organization. Question 7 and 8 establish the periodicity of data collection for each client and for the agency overall. Question 9 asks agencies what method they use to collect satisfaction data. Popular methods of data collection include focus groups, interviews, questionnaires, comment cards, and direct observation. Each method has different costs and are more or less useful based on the information the agency administrator hopes to capture [130]. For instance, survey data can be quantified and easily analyzed. However, surveys do not provide an in-depth portrayal of how respondents think, are costly to develop, and can provide biased information if not appropriately administered [130]. Questions 4-12 also served to provide a potential
counterpoint to the first three questions, in the cases where an agency’s behavior differed from its stated priorities.

<table>
<thead>
<tr>
<th>CMHA Administrator Survey</th>
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<td>15</td>
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<td>16</td>
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Table 1. CMHA Administrator Questionnaire: Questions on Client Satisfaction

It was expected that the majority of agencies would indicate they do collect client satisfaction data, but that the method of doing so might differ. Specifically, it was anticipated
that most agencies would not use a well-validated questionnaire to collect data, but rather would use an instrument that they developed internally or use a different instrument each time. Questions 13-14 were included in order to capture information about what agencies use the client satisfaction data for after they are collected. Question 15 asked agencies about the topics or domains on which they wanted client satisfaction data collected. The answer choices were taken from the eight dimensions of satisfaction described by Ware [79]. Given the absence of information from the research literature, it was expected that most agencies would consider their obligation complete with the collection of the data. Agencies might report their satisfaction scores in grant applications but there would only be minor efforts to use the data to modify or improve services. The last question (Question 16) was included for several reasons. It was important to ask agency administrators whether they would want guidance and support on how to use client satisfaction data in order to gather information for policy makers and funders. The question was also included as another check for consistency with the responses expressed in Questions 1-3. The expectation is that if agencies professed to appreciate client perceptions, they would welcome continued guidance and or support on how to use the data for ongoing quality improvement.

*Agency Descriptors*

The sixteen questions related to the collection of client satisfaction data were followed by questions about agency characteristics. The questions about agency characteristics included some additional questions about agency priorities and then questions about agency demographics (see Table 2). Questions 1-2 in this section were included to determine if the agencies were guided by client-centered principles such as cultural competence/sensitivity, and recovery-orientation.
The U.S. Department of Health and Human Services’ Office Of Minority Health reports that culture and language have a significant influence on how individuals interact with health care system, hence organizations must have a comprehensive strategy for ensuring culturally appropriate services [131]. Cultural competence is the ability of agencies to understand and respond effectively to the cultural and linguistic needs brought by clients to mental health interaction, and the ability to represent this understanding in the provider’s policies, structures, practices, and attitudes [132, 133]. In order to be culturally competent, agencies must assess their needs related to cultural competence, provide services that are culturally competent, hire and retain culturally competent staff, document the commitment to cultural competence in policies and procedures, and finally, evaluate the effectiveness of their cultural competence [134]. Cultural sensitivity is similar to cultural competence, but acknowledges that while agencies are aware of the unique needs of clients, they may not have the resources to address all cultural needs.
An agency’s decision to ensure staff members were trained in culturally competency or sensitivity is one measure of a commitment towards services that are person-centered (see Glossary). It was expected that agencies that were engaged in cultural competency training would be more likely to use client satisfaction data to modify services than agencies that did not require the training. The same is true for recovery-orientation (Question 2), which SAMHSA suggests should be the goal of all mental health services. The question included a definition for recovery as “a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential [25].” An agency’s commitment to recovery indicates commitment to helping achieve the best life possible for the clients they serve as well as an understanding that recovery requires evidence-based treatment and various support services in order to be realized [25]. It should be noted that these questions were used as very general proxies to measure cultural competency and recovery-orientation as agency characteristics.
values. It is possible and likely that some agencies answering in the affirmative engage in only minimal activities related to cultural competency or recovery orientation, while other agencies truly integrate both principles into day-to-day operations and service delivery.

Question 3 asks whether agency leaders were trained in quality or process improvement approaches such as Total Quality Management, Continuous Quality Improvement, PDCA, Six Sigma, LEAN, or Root Cause Analysis. It was included to establish the agency’s commitment to data-driven change and quality improvement (QI). QI approaches are useful for laying out a step-by-step process by which agencies evaluate their need for change, decide on what changes to implement, monitor implementation, and evaluate the effectiveness of change [135, 136].

Question 4 asked agencies to indicate whether they interact with clients online using the agency’s website, a blog, e-mail, Facebook, Google+, LinkedIn, Twitter, or YouTube. Most mental health clients (70-80%) use the internet to seek health and mental health information [137, 138]. To a lesser extent, due to the expense, clients use mobile technologies like smartphones to access health information [139]. However, there are many logistical, ethical, and privacy related obstacles, which CMHAs might face in trying to interact with clients online. Other issues, including lack of information technology infrastructure and lack of internal expertise, may present barriers to the use of online tools by agencies [60]. The use of online technology was included as an indicator of agency adaptation to change (e.g., the use of new technology) and client-centeredness (the willingness to communicate with clients in the ways that clients find convenient). Agencies that choose to navigate the challenges of engaging with clients through the internet demonstrate a commitment to using multiple strategies to improve the health of the people they serve [140]. In one study, participants reported that online information influences the decisions they make about health maintenance and managing
treatment, but that on some occasions they found the information confusing [141]. There is a significant amount of health misinformation online [142]. By becoming active online, CMHAs have an opportunity to ensure they individuals they serve have access to clear and accurate information. An effective online presence also allows CMHAs to help clients manage their care [142].

A final question asked agencies to provide their name. Having the agency name allowed the questionnaire answers to be merged back into other information about the agency location. Agencies were allowed the option of not answering this last question in order to protect their privacy. Two agencies chose to remain anonymous.

**Data Collection**

Cycyota and Harrison (2002, 2006) found that executives are motivated to complete surveys by a different set of stimuli than either non-executive employees of organizations or the general population [123, 143]. They suggest that attempts to personalize survey administration in order to increase participation may have negative effects, as executives feel more comfortable answering surveys when there is an appearance of distance and anonymity [123, 143]. For these reasons, the questionnaire was administered to agency leaders electronically using the online survey platform, Qualtrics®.

As described above, agency leaders were sent the recruitment e-mail with a link to the questionnaire and consent form in the Qualtrics.com research suite. Qualtrics® provides the web-based resources to help gather survey data from individuals and groups. The company focuses on academic and market research, employee feedback, concept testing, and customer perceptions. They are used to gather data at 1600 colleges and universities, and have administered one billion surveys in the last year [144]. Information on the data protection and
security of the Qualtrics® system can be found at http://ehe.osu.edu/downloads/oit/qualtrics-

Variables and Analyses

The Qualtrics® survey software automatically codes the responses to each question except for open-ended questions. Qualtrics® generates a downloadable data set in comma separated value (CSV) format. CSV files are compatible with and easily read by many statistical programs. Qualtrics® codes responses for questions where only one answer choice was allowed with numbers starting with one (1) and counting up to n (the number of responses). For questions where respondents were allowed to select multiple options (i.e. ‘Choose all that apply’), Qualtrics® created a dummy variable for each response choice, with a code of one (1) if the respondent selected that choice, and zero (0) if the respondent did not select that choice. A simple codebook was created with a list of variable names and questions. For example, question 1, “Does your agency seek client input on agency services, procedures, and major changes?” was coded as the variable “input.” Answer choices for question 1 were coded as 1 = yes, always, 2 = yes, sometimes, 3 = No, and 4 = Other response. The codebook also described coding decisions such as recoding of narrative (comment) responses and alterations to the dataset. There were two alterations (recoding) of the data to facilitate analyses. The first involved collapsing the rating scale ranging from “0” to “10” in Question 15 (On a scale of "0" to "10" with "0" meaning "not at all important" and "10" meaning "very important," on which topics is it most useful to get feedback from clients? ) as follows:

- 0-3 as the lowest = Not important
- 4-7 as the middle = Somewhat important
- 8-10 as the highest = Very important.
Collapsing the scale was done in order to make it easier for the variable results to be reported. The second recode involved a comment response to Question 11. The question asked whether agencies included open-ended response options on satisfaction questionnaires administered to clients. The comment from one agency indicated that the agency did not use open-ended response options, but did include a comments section on each questionnaire. This answer was recoded from “other” to “yes.” The intent of the question was to ascertain whether clients could share their thoughts outside of forced answer choices. A comments section allowed clients to share their thoughts.

Agency size was determined by using the number of clients served. Response categories were collapsed in order to facilitate analysis. There were insufficient respondents for each answer choice for analysis to be completed. De Vaus recommends either a substantive or a distributional approach to collapsing response variables [128]. Because years providing service and number of clients served were not composed of response groups that had a meaningful or substantive relationship to each other, the distributional approach was taken. In the distributional approach, approximately equidistant “cut points” were set to create groups that were approximately equal in size [145]. The agency size variable was collapsed into two groups: 1) <=1500 clients (46.1% of responses), and 2) > 1500 clients (53.9% of responses). Agency experience was determined using the length of time the agency had been providing mental health services. This variable was collapsed into three categories: 1) <=35 years (38.4%), 36-45 years (28.1%) and >45 years (33.3%). Agency location was calculated in two ways. The first was having the agency’s main facility in one of five Ohio regional areas. The five regions are referenced by the Bliss Institute of Applied Politics as having unique political inclinations, population distributions, levels of racial diversity, and religious affiliations [146]. The five
regions as described by the Bliss institute were chosen because political decisions influence the resources allotted to the mental health system and may shape the behavior of mental health agencies [19].

<table>
<thead>
<tr>
<th>Northeast</th>
<th>Northwest</th>
<th>Central</th>
<th>Southeast</th>
<th>Southwest</th>
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<tr>
<td>N=12</td>
<td>N=18</td>
<td>N=16</td>
<td>N=27</td>
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<td>Van Wert</td>
<td>Williams</td>
<td>Wood</td>
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Figure 4. Bliss Institute: Five Regions of Ohio

The second way in which agency location was defined was the presence of the agency’s main facility in a metropolitan statistical area (MSA). An MSA is defined by the U.S. Office of Management and Budget using U.S. Census information. MSAs represent urbanized areas and
the surrounding economically and socially integrated geographic areas with populations of 50,000 or more [147]. Designating a place as rural or urban can sometimes be misleading so the MSA designations was used instead [148].

In order to address the Hypothesis 1 for this study, univariable analyses were used to generate summary descriptive statistics from the questionnaire. The statistical software used was SAS version 9.4. Proportions or means were calculated for each survey question showing the percentage of respondents who selected that answer choice out of all of the respondents who answered the question. There were several instances of item non-response, where answers were missing for individual questions. Typically, survey researchers should employ some strategy to deal with missing data [121, 149]. Complete-case analysis was used for this study, where descriptive statistics and tests for association were completed only with the survey answers provided and missing data are excluded. The number of responses (N) to each question is reported in each data table.

For Hypothesis 2, tests for significant associations in the relationship between agencies size, years of experience providing services, and location (independent variables) and the extent to which agencies collect and use satisfaction data (dependent variables) were completed. Since both the independent and dependent variables were either binary or categorical and responses from different agencies were not correlated, Chi-square ($X^2$) tests were used initially to check for relationships between each dependent and independent variable. However, the contingency tables demonstrated several cell sizes had fewer than five items or contained zero items [150]. Therefore, Fisher’s Exact Test was then used to check for relationships between the independent and dependent variables [151]. Both the Chi-square and Fisher’s Exact test may be used to provide evidence of whether two variables are not independent of each other [152].
The null hypothesis is that the two variables are independent of each other. For this study, I was interested in seeing whether an alternative hypothesis (that the variables were dependent on each other) was correct. Due to the high number of individual tests for association (124), a false discovery rate test was also used to adjust p-values based on the possibility of finding significant associations solely due to repeated tests [153, 154]. The p values of all Fisher's Exact are reported. Due to the number of tests, the appropriate threshold for a significant test was set at $\rho < .0004$, calculated by dividing the .05 $\rho$-value by the number of tests (124). Also reported are the adjusted $\rho$ values calculated using the Benjamini and Hochberg False Discovery Rate (FDR) calculation [153-155]. Tests were considered significant at an FDR $\rho$-value of < .05.

Relationships that showed significant associations from the Fisher’s Exact Tests (at FDR $\rho < .05$) were also examined by simple logistic regression. Simple logistic regression is appropriate when using binary or continuous independent variables and dichotomous dependent variables especially for forced survey responses [145, 156-158]. Relevant independent and dependent variables (those found to have associations with Fisher’s Exact Test) were converted to binary variables. For example, for question 3, agencies that considered client satisfaction data to be essential to the evaluation of services (codes as 1) were compared to all other responses, including useful but not essential, and unrelated to the evaluation of services (coded as “0”). Each regression equation contained one dependent variable and one independent variable.

Also included in the findings are descriptive data that examine the representativeness of the estimates gathered in this data. One tool for examining representativeness is the response rate. The response rate is the most often used as a method for determining whether the research participants are representative of the target population [159]. A second method for
gauging representativeness is to compare known characteristics between the research participants and non-participants. The data available for all agencies in the target population included Region and county-level per capita tax revenue for 2011. The idea is that if respondents are similar to the target population on many other characteristics they may also be similar to the target population on the issues being measured in the survey.

Results

Response Rates

Of the 315 agencies that were in the target population, 32 were not contacted and 283 were believed to have received the recruitment material. Ninety-eight (98) provided explicit responses about participation. There were 59 refusals, and 38 completed surveys. One agency initially provided consent to participate but later withdrew the consent. The response rate was calculated using a formula from the American Association for Public Opinion Research (AAPOR) [149] [160]. The APPOR’s formula is a widely used calculation for response rate (see Figure 5). The formula takes into consideration members of the target population that were not contacted. It also includes “unknowns” which are agencies that were contacted but provided no response. The response rate is 12.1%.

\[
\frac{(\text{Completed} + \text{Partial})}{(\text{Completed} + \text{Partials}) + (\text{Refusals} + \text{No Contacts} + \text{Duplicates}) + (\text{Unknowns})}
\]

\[
\frac{39}{(39) + (59 + 32) + (185)}
\]

Figure 5. AAPOR Response Rate Calculation Formula
Respondent Agency Compared to the Target Population

Table 3 shows that 34% of agencies have been providing mental health services for more than 46 years. Only seven agencies have been providing mental health services for less than 15 years. There were more large agencies in the respondent group than there were smaller agencies. Almost 45% of respondent agencies served more than 2,000 adult clients with mental illness. One of the participating agencies served adolescents but did not provide services to adults. The lowest participation was from Northwest (7.7%) and Southeast (2.6%) Ohio regions, while the highest was from the Northeast (35.9%). On average, agencies that participated in the survey received the majority of their funding from Medicaid, followed by the local ADAMH board.
<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency</th>
<th>Percent (%)</th>
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<td>Years Providing Mental Health Services</td>
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<tr>
<td>1 - 5 years</td>
<td>2</td>
<td>5.3%</td>
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<tr>
<td>6 - 15 years</td>
<td>5</td>
<td>13.2%</td>
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<tr>
<td>16 - 25 years</td>
<td>3</td>
<td>7.9%</td>
</tr>
<tr>
<td>26 - 35 years</td>
<td>4</td>
<td>10.5%</td>
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<tr>
<td>36 - 45 years</td>
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<td>46 or more years</td>
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<td></td>
<td>38</td>
<td>100.0%</td>
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<tr>
<td>Number of unique adults with mental illness served annually</td>
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<tr>
<td>No adult clients (Age 18+)</td>
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<td>2.6%</td>
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<tr>
<td>1-100 clients</td>
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<td>7.8%</td>
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<td>13.2%</td>
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<td>5.3%</td>
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<tr>
<td>1501-2000 clients</td>
<td>4</td>
<td>10.5%</td>
</tr>
<tr>
<td>2001 or more clients</td>
<td>17</td>
<td>44.7%</td>
</tr>
<tr>
<td></td>
<td>38</td>
<td>100.0%</td>
</tr>
<tr>
<td>Geographic Distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northwest</td>
<td></td>
<td>7.9%</td>
</tr>
<tr>
<td>Northeast</td>
<td></td>
<td>36.8%</td>
</tr>
<tr>
<td>Central</td>
<td></td>
<td>29.0%</td>
</tr>
<tr>
<td>Southwest</td>
<td></td>
<td>23.7%</td>
</tr>
<tr>
<td>Southeast</td>
<td></td>
<td>2.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.0%</td>
</tr>
<tr>
<td>Funding Source (Note: Multiple options allowed. Frequencies do not add to 38).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>37</td>
<td>60.3%</td>
</tr>
<tr>
<td>Private insurance</td>
<td>24</td>
<td>5.3%</td>
</tr>
<tr>
<td>ADAMH Board funding</td>
<td>31</td>
<td>21.3%</td>
</tr>
<tr>
<td>State dollars (OhioMHAS)</td>
<td>16</td>
<td>4.7%</td>
</tr>
<tr>
<td>Grants</td>
<td>11</td>
<td>3.6%</td>
</tr>
<tr>
<td>Other (E.g., Self-pay, rents, contracts)</td>
<td>19</td>
<td>4.8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.0%</td>
</tr>
<tr>
<td>Agency Located in a MSA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>25</td>
<td>65.8%</td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>34.2%</td>
</tr>
<tr>
<td></td>
<td>38</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 3. CMHA Administrator Questionnaire: Summary Agency Characteristics
Agencies that did not participate in the survey (N=277) are located in the Northwest (11.2%), Northeast (35.0%), Central (17.3%), Southwest (24.6%), and Southeast (11.9%). In terms of the region in which the agency is located, Fisher’s Exact Test (p = .25) did not show a statistically significant difference between agencies that participated in the study and those that did not. A t-test (p=.14) showed no difference in the mean per capita tax revenue for respondent agencies ($21.47) compared to non-respondent agencies ($20.53).

**Importance of Client Satisfaction**

Results from questions on how important client perceptions are to agencies are listed in Table 4. Most agencies (97.4%) indicated that client input into agency operations is an important priority at least some of the time. All but one of the agencies had formal written policies or a written plan requiring the collection of client satisfaction data. The agency without a formal written policy indicated in the comments section that although the requirement was not written, there is an expectation within the agency that client satisfaction data are collected. The majority of agencies (79%) indicated that client satisfaction data was essential for the evaluation of services. However, 21% of agencies indicated that the data were useful but not essential. No agencies indicated that client satisfaction data is unrelated to the evaluation of services or detrimental to the evaluation of services.
Agencies Views on the Importance of Client Satisfaction Data (N=38)

<table>
<thead>
<tr>
<th>Question</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your agency seek client input on agency services, procedures, and major changes?</td>
<td></td>
</tr>
<tr>
<td>Yes, always</td>
<td>50.0%</td>
</tr>
<tr>
<td>Yes, sometimes</td>
<td>47.4%</td>
</tr>
<tr>
<td>No</td>
<td>2.6%</td>
</tr>
<tr>
<td>Does your agency have a written policy requiring the collection of client satisfaction data?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>97.4%</td>
</tr>
<tr>
<td>No</td>
<td>2.6%</td>
</tr>
<tr>
<td>How essential are client satisfaction data to your agency evaluation of services?</td>
<td></td>
</tr>
<tr>
<td>Essential to the evaluation of services</td>
<td>79.0%</td>
</tr>
<tr>
<td>Useful for evaluation, but not essential</td>
<td>21.1%</td>
</tr>
</tbody>
</table>

Table 4. CMHA Agency Administrator Survey: Importance of Client Input

**Findings for Hypothesis 1a and 1b: Data Collection Processes**

All 38 (100%) participating agencies indicated they do collect client satisfaction data. Most agencies collect data themselves (64.9%) using only internal resources. A smaller proportion collected data with assistance from an external organization (35.1%). In these latter cases, comments indicated that sometimes the external agency (such as the ADAMH board or the accrediting agency) collected client satisfaction data independent of the agency. In other cases, the data was collected by the agency but analyzed by an external organization. Not all agencies provided details in the comments section.

The methods agencies used to collect client satisfaction data included focus groups (31.6%), interviews (10.5%), surveys they developed themselves (94.7%), and surveys developed externally (34.2%). Agencies also indicated in the comments section that they employed other methods of client data collection including a suggestion box, a client advisory council, family nights, and an electronic checklist. Thirty-two percent (31.5%) of agencies included open-ended
or comments sections on the surveys they used. Of the 13 agencies using surveys developed externally, most indicated that they did not use any of the nine validated survey instruments that appear most often in the literature (see Table 5). Of the instruments listed, the Client Satisfaction Questionnaires and the Outcome Rating Scale were the most commonly used. Most agencies (86.8%) indicated they use a survey that was not on the list. Examples of survey instruments agencies used that were not on the list of nine include:

- surveys designed by the local ADAMH board,
- surveys using items taken from multiple validated surveys,
- the Mental Health Corporations of America Customer Satisfaction Survey,
- the Heath Resources and Services Administration Survey,
- the Patient Satisfaction Scale,
- a survey developed by the agency and approved by the accrediting body, and
- the Ohio Outcomes Survey.

Regardless of whether they used an instrument developed internally or externally, most agencies used the same surveys or questionnaires all the time (77.8%), but several (22.2%) only used the same instrument sometimes. Two agencies explained in the comments that while overall content is the same, they do modify the formatting and wording on surveys annually.
Table 5. Agencies Indicating Use of Instruments that Have Been Validated

<table>
<thead>
<tr>
<th>Questionnaire Name</th>
<th>Responses</th>
<th>Use</th>
<th>Do not use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charleston Psychiatric Outpatient Satisfaction</td>
<td>12</td>
<td>0.0%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Client Satisfaction Questionnaire</td>
<td>12</td>
<td>25.0%</td>
<td>75.00%</td>
</tr>
<tr>
<td>Empowerment Scale</td>
<td>12</td>
<td>0%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Experience of Care and Health Outcomes Survey</td>
<td>12</td>
<td>0.0%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Kentucky Consumer Satisfaction Instrument</td>
<td>12</td>
<td>0.0%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Mental Health Statistics Improvement Program</td>
<td>12</td>
<td>8.3%</td>
<td>91.7%</td>
</tr>
<tr>
<td>Outcome Rating Scale</td>
<td>13</td>
<td>15.4%</td>
<td>84.6%</td>
</tr>
<tr>
<td>Perception of Care survey</td>
<td>12</td>
<td>8.3%</td>
<td>91.7%</td>
</tr>
<tr>
<td>Verona Service Satisfaction Scale</td>
<td>12</td>
<td>0.0%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Any surveys listed above</td>
<td>13</td>
<td>46.2%</td>
<td>53.8%</td>
</tr>
<tr>
<td>Other surveys not listed above</td>
<td>13</td>
<td>84.6%</td>
<td>15.3%</td>
</tr>
</tbody>
</table>

There were two questions about when client satisfaction data was collected. The first asked whether satisfaction data was gathered when clients began services, when they terminated services, or at multiple points during or after services. Of the 38 agencies, the vast majority of agencies (97.3%) collected client satisfaction data at multiple points during or after clients obtained services. One agency only collected data at the completion or termination of services. The second question asked about the frequency of satisfaction data collection. The frequency with which data is collected is listed in Table 6.
How Often CMHAs Collect Client Satisfaction Data (N=38)

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily to weekly</td>
<td>7.9%</td>
</tr>
<tr>
<td>Every 2-3 weeks to monthly</td>
<td>5.3%</td>
</tr>
<tr>
<td>Every 2-3 months to every 6 months</td>
<td>23.7%</td>
</tr>
<tr>
<td>Once or twice a year</td>
<td>55.3%</td>
</tr>
</tbody>
</table>

Table 6. CMHA Administrator Survey: Frequency of Data Collection

*Findings for Hypothesis 1c: Agency Use of Client Satisfaction Data after Collection*

Table 7 describes how agencies use client satisfaction data once it has been collected. Some agencies did not respond to these questions. All but one of the 38 agencies indicated that they use client satisfaction data for quality improvement initiatives. The majority of agencies also share the data with stakeholders (including leadership and employees), and used them in staff training, grant applications, and to change services. Some agencies indicated in the comments section of the questionnaire that client satisfaction data was used for staff discipline, printed material for clients, sharing with the three accrediting organizations, CARF, COA, or TJC, or sharing with partner agencies.
### How Agencies Use Client Satisfaction Data After it is Collected

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Respondents</th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share the data with stakeholders</td>
<td>36</td>
<td>91.7%</td>
<td>8.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Place data on the agency website</td>
<td>37</td>
<td>32.4%</td>
<td>59.5%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Use in marketing/educational materials</td>
<td>37</td>
<td>56.8%</td>
<td>37.8%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Use for quality improvement processes</td>
<td>37</td>
<td>100.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Incorporate the data in staff trainings</td>
<td>37</td>
<td>89.2%</td>
<td>8.1%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Use data to change services</td>
<td>36</td>
<td>91.7%</td>
<td>5.6%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Include the data in applications for grants</td>
<td>37</td>
<td>73.0%</td>
<td>13.5%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Other response:</td>
<td>5</td>
<td>60.0%</td>
<td>40%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

With whom is client satisfaction data shared?

<table>
<thead>
<tr>
<th>With Whom</th>
<th>Respondents</th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local county ADAMH Board</td>
<td>33</td>
<td>78.8%</td>
<td>12.1%</td>
<td>9.1%</td>
</tr>
<tr>
<td>OhioMHAS</td>
<td>31</td>
<td>38.7%</td>
<td>45.2%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Other funders</td>
<td>33</td>
<td>78.8%</td>
<td>15.2%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Agency board or agency leaders</td>
<td>34</td>
<td>100.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Non-management employees</td>
<td>33</td>
<td>93.9%</td>
<td>3.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Clients, families, and/or advocates</td>
<td>31</td>
<td>80.7%</td>
<td>12.9%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Other response (Please specify):</td>
<td>20</td>
<td>50%</td>
<td>30.0%</td>
<td>20.0%</td>
</tr>
</tbody>
</table>

Table 7. CMHA Administrator Survey - Uses for Client Satisfaction Data

### Agency Perspectives

Agencies indicated that it was most important to gather information from clients about service outcomes (97%), interpersonal relationships with staff (95%), and unmet needs (87%). Fewer agencies thought that it was very important to gather information on service continuity or availability (see Table 8). The items from the comments section (“other” responses) that agencies considered important included accessibility, cultural competence, and wait time for services.
Client Satisfaction Domains Agency Leaders Find Useful (N=38)

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Agencies</th>
<th>Very Important</th>
<th>Somewhat Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal Interactions with Staff</td>
<td>38</td>
<td>94.7%</td>
<td>5.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Service outcomes</td>
<td>38</td>
<td>97.4%</td>
<td>2.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Service continuity</td>
<td>37</td>
<td>78.4%</td>
<td>18.9%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Service availability</td>
<td>37</td>
<td>81.1%</td>
<td>13.5%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Unmet needs</td>
<td>38</td>
<td>86.8%</td>
<td>13.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>62.5%</td>
<td>37.5%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Table 8. Administrator Preference for Topics Covered on Client Satisfaction Surveys

Table 9 shows that almost half the agencies indicated they do not want guidance or support on how to use client satisfaction data to change services. The majority of agencies leaders who decline additional guidance indicated that they already had access to guidance or support. The “other response” contained comments with answers like “unsure” or “maybe” or “it depends.”

<table>
<thead>
<tr>
<th>Proportion of Agencies Interested in Guidance on Client Satisfaction (N=38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer Choices</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No, agency already has guidance/support</td>
</tr>
<tr>
<td>No, agency would not want guidance/support</td>
</tr>
<tr>
<td>Other response</td>
</tr>
</tbody>
</table>

Table 9. Agencies Wanting Guidance on Client Satisfaction

Two questions were asked to evaluate agency perspectives regarding cultural competency and recovery orientation. Of the 38 agencies that participated, approximately 95% require cultural competency or cultural sensitivity training for all employees. Thirty-seven
agencies indicated that helping clients achieve or maintaining recovery was a strategic goal of the agency. A majority of agencies (79.1%) indicated that managers or executives were trained in the use of a formal QI approach.

Agencies were asked to indicate whether they interacted with clients using a variety of online tools (see Table 10). The most used online tool was the agency website, followed by e-mail and the agency’s Facebook page. The two agencies indicating “other” wrote that they used texting. Sixty-five percent (65%) used at least one online tool to interact with clients.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Percent “Yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website</td>
<td>47.4%</td>
</tr>
<tr>
<td>Blog</td>
<td>5.3%</td>
</tr>
<tr>
<td>Facebook</td>
<td>26.3%</td>
</tr>
<tr>
<td>Email</td>
<td>29.0%</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>5.3%</td>
</tr>
<tr>
<td>Google+</td>
<td>0.0%</td>
</tr>
<tr>
<td>Twitter</td>
<td>10.5%</td>
</tr>
<tr>
<td>YouTube</td>
<td>5.3%</td>
</tr>
<tr>
<td>Any tool listed</td>
<td>65.7%</td>
</tr>
<tr>
<td>Other online</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

Table 10. Agency Use of Online Tools to Interact with Clients

**Findings for Hypothesis 2: Relationships between Agency Behavior and Agency Characteristics**

Hypothesis 2 involved a check for associations between three fixed agency characteristics (location, experience providing services, and size) and the extent to which agencies collect and use client satisfaction data. The result showed no significant associations between agency perspectives and behavior related to client satisfaction and the fixed agency
characteristics measured in this study (agency experience providing services, agency regional and metropolitan location, and agency size).

Table 11 shows results of Fisher’s Exact Tests, which indicate whether there were no significant associations (at $\rho < .0004$) between agency experience, size, regional location, and location in a MSA. The empty cells in the table represent the cross tabulations for which there were insufficient variation to calculate a difference between groups. For instance, since 100% of agencies collect client satisfaction data there would be no variation related to the collection of client satisfaction data by agency experience, size, or location. Using an unadjusted $p$ value, there were five significant associations (at $p < .05$) of the 124 comparisons made (highlighted in the table below). Regional location was associated with whether agencies believed client satisfaction data was essential to the evaluation of services. Region was also significantly associated with whether agencies used the client satisfaction data they gathered to train staff. The number of years that an agency provided mental health services was significantly associated with the type of information agencies think satisfaction questionnaires should gather. Agency size was significantly associated with whether agencies wanted guidance on how to use client satisfaction data to change services. Agency location in a MSA was associated with what information the agency indicated should be collected on surveys. However, as mentioned above, none of the $p$-values met the required initial threshold of $p < .0004$ and so no tests were significant using a FDR $p$-value of $< .05$. 
### Results of Fisher’s Exact Tests For Agency Fixed Traits Compared with Data Collection and Use.

<table>
<thead>
<tr>
<th>Questions on client satisfaction</th>
<th>Years</th>
<th>Size</th>
<th>Region</th>
<th>MSA</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Seek client input</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Have written policy to seek client input</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Think client satisfaction data essential</td>
<td></td>
<td></td>
<td></td>
<td>.02*</td>
<td></td>
</tr>
<tr>
<td>4. Collect satisfaction data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Collect alone or uses another agency</td>
<td></td>
<td></td>
<td></td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>6. Use ADAMH to collect data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Collect data multiple times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Collect data often</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Use focus groups, interviews, or surveys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Use the same survey all the time</td>
<td></td>
<td></td>
<td></td>
<td>.23</td>
<td></td>
</tr>
<tr>
<td>11. Use opened-ended questions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Use validated surveys from the research literature</td>
<td></td>
<td></td>
<td></td>
<td>.99</td>
<td></td>
</tr>
<tr>
<td>13. Use satisfaction data:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To share with stakeholders</td>
<td>.76</td>
<td>.99</td>
<td>.83</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>To place on agency website</td>
<td>.24</td>
<td>.60</td>
<td>.41</td>
<td>.66</td>
<td></td>
</tr>
<tr>
<td>For marketing or education</td>
<td>.51</td>
<td>.13</td>
<td>.56</td>
<td>.45</td>
<td></td>
</tr>
<tr>
<td>For quality improvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To train staff</td>
<td>.71</td>
<td>.99</td>
<td>.04*</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>To change services</td>
<td>.17</td>
<td>.18</td>
<td>.41</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>To apply for grants</td>
<td>.11</td>
<td>.26</td>
<td>.35</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>14. Share satisfaction data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Want satisfaction data on:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client interactions with staff</td>
<td>.86</td>
<td>.28</td>
<td>.65</td>
<td>.99</td>
<td></td>
</tr>
<tr>
<td>Client service outcomes</td>
<td>.41</td>
<td>.41</td>
<td>.72</td>
<td>.57</td>
<td></td>
</tr>
<tr>
<td>Service continuity</td>
<td>.39</td>
<td>.33</td>
<td>.55</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>Service availability</td>
<td>.41</td>
<td>.17</td>
<td>.82</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td>Unmet needs</td>
<td>.60</td>
<td>.34</td>
<td>.58</td>
<td>.55</td>
<td></td>
</tr>
<tr>
<td>Other topics not listed</td>
<td>.01*</td>
<td>.99</td>
<td>.12</td>
<td>.01**</td>
<td></td>
</tr>
<tr>
<td>16. Desire guidance on using data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions about Agency Processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cultural competence training required</td>
<td>.99</td>
<td>.16</td>
<td>.99</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>2. Recovery is a strategic goal</td>
<td>.99</td>
<td>.39</td>
<td>.34</td>
<td>.99</td>
<td></td>
</tr>
<tr>
<td>3. Managers trained in QI approaches</td>
<td>.50</td>
<td>.18</td>
<td>.38</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>4. Use online tools to communicate with clients</td>
<td>.92</td>
<td>.50</td>
<td>.18</td>
<td>.73</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05    ** p < .01.

Table 11. Fisher’s Exact Tests Results for Associations with Experience, Size, and Location
Further analyses were unnecessary considering the adjusted p values, which showed that there were no significant relationships. Even so, for the purposes of thoroughness, simple logistic regression was completed on the relationships that seemed significant prior to the FDR correction. The results are listed below and include odds ratio (OR) estimates and the associated 95% Wald Confidence Intervals (WCI). In most cases, the WCI indicated that the relationship showed no statistically significant association. In one regression (highlighted below) the association was significant at ρ <.05. This significant association indicated that compared to agencies in the Northeast, agencies that are not in the Northeast are eight times as likely to indicate that the collection of client satisfaction data is essential to the evaluation of services. This variable was not significant using the FDR corrected ρ value.

Analysis of Variables Showing Associations with Fisher’s Exact Tests.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Odds Ratio</th>
<th>Lower WCI</th>
<th>Upper WCI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agencies want client feedback on other topics.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency years of experience: 36-45 years vs. &gt;45 years</td>
<td>0.10</td>
<td>0.01</td>
<td>1.17</td>
</tr>
<tr>
<td>Agency years of experience: ≤ 35 years vs. &gt;45 years</td>
<td>0.50</td>
<td>0.04</td>
<td>6.98</td>
</tr>
<tr>
<td>Agency located in an MSA: Yes vs. No</td>
<td>0.58</td>
<td>0.09</td>
<td>3.53</td>
</tr>
<tr>
<td><strong>Agency wants guidance on client satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size: &gt;1500 clients vs. ≤ 1500 clients</td>
<td>0.83</td>
<td>0.19</td>
<td>3.68</td>
</tr>
<tr>
<td><strong>Client satisfaction data is essential to service evaluation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location Northeast: Yes vs. No</td>
<td>8.25*</td>
<td>1.31</td>
<td>52.1</td>
</tr>
<tr>
<td><strong>Agency uses client satisfaction data to train staff</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location Northeast: Yes vs. No</td>
<td>0.86</td>
<td>0.12</td>
<td>6.19</td>
</tr>
</tbody>
</table>

* p <.05

Table 12. Logistic Regression of Age, Size, and Location and Agency Actions
**Summary of Findings**

Overall, the study found that responding agencies do collect client satisfaction data and for the most part do use the data things like quality improvement, staff training, grant applications, and to inform stakeholders and business partners. There are differences across agencies and variation within agencies on the instruments used to collect satisfaction data, the frequency with which data is collected and who collects client satisfaction data. Examination of the relationship between agency size, location, and experience providing services showed no statistically significant relationships to any of the variables related to the collection and use of client satisfaction data.

**Discussion**

**Hypothesis 1: Data Collection, Validated Instruments, and Quality Improvement**

Hypothesis 1 had three parts. Hypothesis 1a was that most CMHAs engage in the collection of client satisfaction data, but may do so inconsistently. Hypothesis 1b was that CMHAs use non-validated methodology to a greater extent than they do validated methodology (e.g. instruments tested for validity and reliability, scientific sampling, adjustments for biases, psychometric testing). Hypothesis 1c maintained that few agencies were likely to use client satisfaction data for quality improvement initiatives. The data show that for the responding agencies 1a and 1b are correct but 1c is incorrect.

In terms of client satisfaction data collection, 100% of the participating CMHAs collected client satisfaction data either on their own or with the assistance of some external body, generally the local ADAMH board. This finding may be due in part to several factors. The
current emphasis on recovery orientation from relevant federal and state agencies and from advocates has increased [161]. There has also been a shift from what has historically been a paternalistic relationship between mental health agencies and clients, to a patient-centered approach [162]. Most importantly, agencies are being required to collect client satisfaction data by regulatory and accrediting organizations [98]. Per agency comments on the survey, some local county boards require the collection of client satisfaction data. The three accrediting bodies (CARF, TJC, and COA) also require the collection of client/patient satisfaction data [98, 105]. Finally, the strong influence of advocacy agencies, like the National Alliance on Mental Illness (NAMI), also contributes to agencies collecting client satisfaction data.

Most agencies indicate that client satisfaction is a serious priority. However, 21% of agencies indicated that client satisfaction data are useful but not essential for service evaluation. At the same time, the majority of agencies indicate they are recovery-oriented and require staff to be trained in cultural competence. These findings suggest a dissonance between agencies’ stated priorities and agencies’ behavior. All agencies collect data. Most agencies have client-centered practices. Most agencies formalize data collection in policy or procedure. Nevertheless, some agencies do not believe the data to be essential to service evaluation.

There are several possible explanations for this discrepancy. The first is that for some agencies client satisfaction data collection is part of a contractual obligation with the ADAMH board or an accreditation obligation and not a policy borne from within the agencies’ leadership. A second explanation may have to do with the nature of client satisfaction data itself. Overall client satisfaction scores tend to be relatively high. The literature indicates that agencies can often expect an average of 80% or higher on satisfaction scores [67, 163-166]. If agencies do not couple questionnaires with other methods of acquiring data concerning client perspectives (e.g.,
from focus groups, interviews, and observations), it is possible the agency will not perceive the information as useful. Only 30% of agencies reported using focus groups and 10% used interviews to collect client satisfaction data. If agencies are not collecting client satisfaction data with specific quality improvement goals in mind, as a way of identifying issues, or evaluating specific service changes, then they might not see how essential the data are for service evaluation. In one question, agencies expressed clear ideas about what topics should be included in client satisfaction surveys. CMHAs wanted to know client’s feedback mostly concerning service outcomes but also about client interactions with staff. These two issues were rated above service continuity and service availability, showing that agencies are interested in issues that can be modified. It would have been useful to ask a question about whether CMHA leaders found that the instruments used to collect client satisfaction data gathered the type of information that CMHAs found most useful.

The second element of Hypothesis 1a states that agency data collection is likely to be inconsistent. Across agencies, some collect the data themselves (65%), while others collect data with the help of an external organization (35%). The methods used (focus group, interview, and questionnaire) and the type of survey varied across agencies. Twenty-two percent (22%) of agencies indicated they did not use the same questionnaire each time they collected client satisfaction data. The frequency of data collection also varied. Agencies collected across a range of time with some collecting satisfaction data more frequently than once a month, others between every 2 months to every 6 months, and the majority of agencies collecting data once or twice per year. It is not clear how agencies determine the periodicity of client satisfaction data gathering. The annual data collection may be a matter of convenience or a requirement from an accrediting organization. At any rate, it seems that once or twice a year may be too infrequent.
if data is to be useful to assess specific changes. To this point, agencies indicated that they were interested in client satisfaction data on service outcomes, interpersonal interactions, and unmet needs. Addressing these issues may benefit from a more regular collection of data. Research which demonstrated what intervals or frequencies were most appropriate for the collection of satisfaction data was not available.

Most agencies are not using surveys that have been tested for reliability or validity on individuals with mental illness. In fact, agencies are using questionnaires they design themselves. It requires significant investment of time and resources to vet a survey instrument. This supports hypothesis 1b, which indicated agencies are not likely to use validated instruments. There are several problems with using surveys that have not been tested for reliability and validity. The first is that without testing, agencies cannot be sure the surveys are measuring the concepts they hope they are measuring. The second is that the surveys must be tested on the population on which they will be used to ensure relevance and comprehension by that population. Third, it is difficult to understand how the scores on an untested survey relate back to the concepts being measured [167]. These problems decrease the accuracy of any conclusions drawn from these survey results. Using non-validated instruments decreases the ability to trend data across multiple administrations of the instrument. While there are many validated instruments, the reality is that most are not available gratis. One of the instruments referenced on the questionnaire, the Client Satisfaction Questionnaire costs $.55 for each administration. Agencies may not be able to afford that cost out of limited resources.

As alluded to earlier, the other and very likely explanation for agencies using surveys that they develop internally is that none of the currently validated surveys are a good fit for the agencies, or do not capture the data they need. It is already clear that general satisfaction
questionnaires tend to find high levels of satisfaction. Agencies may be interested in getting information about specific aspects of care that are not captured by general satisfaction surveys. One agency indicated in the comments that they borrow relevant questions from a variety of validated surveys. The simple explanation may be that if agencies are expected to collect satisfaction data using validated tools, then the tools need to be more functional, specific, and ask clients the questions that are useful for agencies in improving services. It may also be that agencies are not familiar with validated surveys.

Interestingly, Hypothesis 1c was found to be incorrect. Thirty-seven of 38 agencies indicated they use client satisfaction data for QI, while 33 used client satisfaction data to train staff and to make changes to services. Seventy-nine (79%) of agencies have leaders trained in a formal QI approach. Despite the absence of research literature on use of QI in mental health agencies, these results show that CMHAs collect satisfaction data and use the results to drive data-driven ongoing internal change. However, it should be noted that the percentage of agencies indicating they use data for QI is far larger than the percentage with staff trained in QI. It would be interesting to know how those agencies that implement QI initiatives without a QI approach do so. In addition, the survey asked whether agencies were trained in a QI approach but did not gather details on which ones were used. And while examples of various QI approaches were included on the survey, a definition for QI was not provided. Without a definition for QI or more detail on what exactly agencies do in regards to QI it is possible that the survey question did not capture the information it was supposed to.
Hypothesis 2: Relationship between Agency Fixed Characteristics and Agency Use of Client Satisfaction Data

Hypothesis 2 is that agencies that do collect and use client satisfaction data will be older (have more experience providing mental health services), larger (serve more clients), and located in urban (metropolitan) settings. Fisher’s Exact Tests adjusted for a false discovery rate, found no associations between the predictor variables and agency behavior related to client satisfaction showed very few statistically significant associations. Further analysis using simple logistic regression found a significant relationship between agencies who considered client satisfaction data essential to service evaluation and agency location in the Northeast.

There are several possible reasons for the lack of more significant associations including the response rate and the possibility that the independent variables chosen for this study are not the agency characteristics that have significant associations with agency behavior related to client satisfaction scores. The low response rate may make it difficult to detect differences in the target population. For instance, several statistical comparisons using SAS 9.4 reported that a quasi-complete or a complete separation of data points was detected. Separation of data points is generally explained by a lack of variation (due in part to the sample size) which makes calculating the maximum likelihood difficult [169]. It is possible that with a larger number of responses there would have been more differentiation between the groups. It is also possible that there is no significant predictive relationship between an agency’s experience providing services, location, and size and how the agency behaves related to client satisfaction. Another study with a representative sample size would more definitively answer that question.
Limitations

Several limitations of this study are related to factors that decrease the power of the statistical analysis and increase bias. The first limitation of this study is the low response rate. Unfortunately, the response rate of 12.1% is likely too low to use for generalizing to all CMHAs in Ohio. Current survey response rates have been declining across research fields and modes of administration [170]. Response rates for executives of organizations tend to be the lowest of all respondent groups [170]. In addition, response rate enhancing techniques such as advance notice, and follow-up reminders have also decreased in their effectiveness [170, 171]. Despite the justifications for the response rate, it is much lower than the rates reflected in the literature for surveys at the organizational-level. Two meta-analyses of studies published between 2000-2005 and 1995-2008 respectively reported organizational-level survey response rate of 35.7% and 37% [172]. The OhioMHAS recently obtained a survey-response rate of 33% from the CMHAs targeted in this study [173].

The information gathered is still useful to understanding the behavior of those CMHAs who responded. In fact, several researchers suggest that using a low response rate as the only ruler for judging a study is unwise [159]. A more relevant evaluative tool is the amount of difference between those who did respond to the survey and the remainder of the target population (i.e. an evaluation of non-responder bias) [159]. There was insufficient information to complete a comprehensive analysis of respondents compared to non-respondents. However based on the available data, the two groups are not different in terms of mean per capita tax revenue, and location by region.

Another of the limitations of this study is that the questionnaire did not include an appropriate mechanism for capturing the explanations for why agencies answered in the way
they did (such as a follow up interview). Questionnaires provide information that is easily quantifiable, but they do not answer questions about why a respondent behaves in a certain way. In addition, the survey questions and answers choices were not comprehensively tested on the target population. Much like the criticism leveled at CMHAs for using non-validated surveys, it is possible the design of the survey in this study resulted in measurement error.
CHAPTER 3: COMPARISON OF CLIENT AND CASE MANAGER PERCEPTIONS OF CLIENT SATISFACTION AT COMMUNITY-BASED MENTAL HEALTH AGENCIES IN OHIO

Introduction

The focus of this study is to measure client satisfaction with services at CMHAs and to compare client and case manager perceptions of client satisfaction at CMHAs in Ohio. This study provides an external measure of client satisfaction across Ohio that CMHA leaders may compare to data gathered internally from the clients they serve. This study also uses the perspective of case managers, who have a role as liaisons between clients and agencies, to increase the understanding of how the collection and use of client satisfaction data may be made more valuable. In order to understand why case managers are in a unique role to comment on their perceptions of client satisfaction, it is important to understand the function of case managers within mental health agencies.

Case managers work closely and in some cases intensively with clients to arrange for support services, coordinate care, help to integrate care, and are primarily responsible for monitoring clients’ progress on goals [3, 174]. High quality case management services improve treatment compliance, retention in treatment, and service outcomes for individuals with mental illnesses [175, 176]. Case managers help improve the recovery orientation of mental health services by increasing clients’ knowledge about mental illness and service choices [175, 176]. Case management targeted to individuals with the highest needs (intensive case management)
reduces hospital admissions, length of hospital stay, self-harming behavior, and increases medication compliance for individuals with serious mental illness [177, 178]. Additional details on the actual day-to-day activities of a case manager may be found in the textbook edited by Daron and Yeager [179].

Apart from the essential job functions case managers perform, the nature of the interaction between clients and case managers also has important consequences to client outcomes, including client satisfaction. Effective relationships between clients and case managers are essential to overcoming barriers to treatment retention, which is the best predictor of successful outcomes [180-185]. One study has shown that a stronger working alliance with case managers is especially important to older clients, an important consideration given the aging population in the United States [186]. Other studies show that the ways in which case managers express emotion to clients (e.g. level of hostility, criticism, or positive attitude) is associated with clients’ symptoms, attitudes toward treatment, treatment compliance, and medication adherence [187-191]. In addition, the amount of agreement and collaboration between clients and case managers is correlated with higher client satisfaction scores [85].

Case managers are useful in providing a perspective on client satisfaction for the following reasons. First, case managers have substantial responsibility for ensuring that the wants and needs of clients are met through developing service plans and establishing service linkages [3, 179, 192, 193]. The extent to which services meets the wants and needs of clients is the very definition of client satisfaction being used in this research (see Glossary). Second, case managers have keen insight into how well agencies have incorporated recovery-oriented principles into programming [193]. Third, case management requires case managers to interact
with various agencies in order to help fulfill the needs of the clients they serve so case managers have a basis for the comparison of service quality across multiple service agencies [179].

There is some limited research literature that evaluates the perceptions of clients and case managers on treatment related issues. The implications of this research are discussed later but a summary is provided here. One comparison examined the reports of clients and case managers about clients’ functioning in the community and found reasonably good agreement between the two reports. The study also found that certain client characteristics (such as income level and behavioral issues) were associated with differences in the reports [194]. A second study examined clients’ and case manager’s views on a representative payee program. Representative payees are individuals appointed to manage social security benefits on behalf of clients who are unable to manage the clients’ finances [195]. The study found that while both case managers and clients thought the representative payee service was useful, clients were less satisfied with the payee program than case managers perceived clients to be [196]. A third study evaluated the level of client service empowerment from both the client and case manager perspective and found differences of perception between the two groups [197]. From the limited body of existing research the differences and similarities between case managers and clients may provide interesting insights for service planning and client outcomes. Given the importance of case management and the importance of client satisfaction in the current community mental health services system there just is not enough research to support program processes related to case management. This research contributes to a body of literature that still has many gaps.
Study Aims

This study has two aims. The first aim is to answer Question 1: How satisfied are clients with the services provided at CMHAs in Ohio? The most recent published data from the MHSIP survey, which provided an estimate of client satisfaction across Ohio, was from 2012. This study provides an updated estimate of the level of client satisfaction at CMHAs. The research hypothesis for Question 1 is overall, clients in Ohio will indicate satisfaction scores of 80% or above with services received from CMHAs. This hypothesis has considerable support from the research literature. In studies conducted between 1981 and 2012 mental health service users had an average satisfaction rating of 82.8% [85, 163, 165, 166, 198-203]. Specific to Ohio, the perception of care survey administered in the past by the Ohio Department of Mental Health and Addiction Services (OhioMHAS) showed a general satisfaction rating exceeding 83% in 2011 and 2012 [204, 205].

The second aim addresses Question 2: to what extent do clients and case managers agree on levels of client satisfaction? This study question is important to determining whether a shared perspective about the level of client satisfaction between clients and case managers is associated with higher client satisfaction scores. This consideration is important for agency hiring, staff training processes, and for initiatives to improve client satisfaction. There is some evidence that a shared understanding between treatment staff and clients predicts better treatment outcomes [206]. The hypothesis associated with this question is that client satisfaction will tend to be greater when case manager and client perceptions of client satisfaction are aligned, and that client satisfaction will be lower when case managers and client perceptions of client satisfaction are not aligned. If wants and needs are being addressed, case
manager and client scores should be strongly aligned. According to one study, clients tend to be more satisfied when the staff who work with them understands their (the clients) wants and needs [207]. More agreement between staff and clients influences the ability of staff to provide effective case management [208]. If wants and needs are not being addressed or the case manager and client have different understandings about what the client’s wants and needs are, then level of perceived satisfaction will not be aligned.

The Accountable Care Act (ACA) with its focus on care coordination has and will expand the role of case managers in health and mental health services [174, 179]. The importance of high-quality ongoing case management services cannot be understated, especially for individuals with the most serious mental illnesses [209]. Furthermore, as case managers seek to further refine their professional standards, it will be increasingly important to evaluate the value of each facet of case management services so that effective processes may be retained and ineffective ones abandoned [210]. This study will contribute to the understanding of the nature of the relationship between case managers and clients, and this improved understanding may inform the refining of the role of the case manager.

Methods

Study Design

Study 2 employs a cross-sectional research design with both descriptive and analytical components. Questionnaires are used to gather data on client satisfaction and personal characteristics from clients and case managers at participating agencies. The analytical component of the study involves tests for significant associations between agency, client, and case manager characteristics, and the level of client satisfaction. This study also tests for factors
that influence the relationship between clients’ views on client satisfaction and case managers’ view on client satisfaction. A cross-sectional design is appropriate for this study because the independent and dependent variables are being measured simultaneously. Additionally, cross-sectional surveys are useful for: 1) assessing information about perceptions, and 2) examining the data by population subgroups (e.g. race, gender, and educational status) [120]. Unfortunately, cross-sectional studies only capture a single snapshot in time; hence, no information on trends or changes in variables can be analyzed using this study design.

**Study Population and Sampling**

The research settings are community-based mental health agencies (CMHAs) in Ohio. Eligibility criteria for CMHA participation include certification by the Ohio Department of Mental Health and Addiction Services (OhioMHAS), provision of case management services (Community Psychiatric Supportive Treatment (CPST)), and accreditation by one of three accrediting bodies: The Commission on Accreditation of Rehabilitation Facilities (CARF), The Council on Accreditation (COA), or The Joint Commission on Accreditation of Healthcare Organizations (TJC). There were three groups of participants necessary for the completion of this study. An administrator, the agency’s Executive Director, or a designee, from each CMHA was required to provide information about the agency. Information included the number of case managers employed and the caseload ratios. Administrators also provided permission to recruit case managers and clients. Adult clients receiving mental health services at each CMHA were surveyed in order to have client satisfaction data for comparison with case manager data. Case managers were the third group of participants. Case managers answered a survey similar to the client survey.
One hundred and ninety six (196) CMHAs were eligible for Study 2. A representative sample was selected using a stratified cluster sampling technique. The strata were based on groupings of CMHAs related to the relative wealth of the county in which the CMHA was located. The clusters were the sample of agencies that were selected for participation in the study. The sampling units within the clusters were CMHA administrators, clients, and case managers. In order to create the strata, the agencies were divided into quartiles based on the per capita tax revenue within each county. It has been shown that one of the determinants of performance (service access, outcomes, and quality) of public health systems, including mental health service systems, is the amount of resources available for services [211-215]. In Ohio, where funding for mental health services is allocated locally and is in some part based on tax levies from the locality, some agencies have access to significantly more funds than others [19]. The wealth of the county within which the agency is located may be important to agency performance and potentially important to client satisfaction scores. In order to ensure that the sample captures agencies from all of the various county wealth levels, proportionate stratification was used to select the CMHA sample for this study.

The wealth strata for the 88 counties was calculated based on the per capita tax revenue reported in 2011, the latest year available at the time of study design. County tax revenue and county population data are public information and were retrieved from the Ohio Department of Taxation website [216]. Ohio’s 88 counties were divided into quartiles based on the per capita tax revenue. Within each of the quartiles, there was a range of approximately $4 dollars per capita, with the exception of the fourth, which included the eight counties with the highest per capita tax revenue, and which had significantly higher tax revenues when compared to the other levels. The 196 CMHAs were then matched to counties based on the primary
agency address provided by the Ohio Department of Mental Health and Addiction Services (OhioMHAS). After sorting the CMHAs into mutually exclusive strata based on the tax revenue per capita, sampling calculations were completed. The alpha rate (the acceptable type 1 error) was set at .05, with a t-value of 1.96 (appropriate for populations with N=> 120) and the acceptable margin of error (the acceptable type II error) was set at .2158 [217]. The acceptable margin of error was calculated using the standard deviation (2.7) from a previous study that measured client satisfaction using the Client Satisfaction Questionnaire (CSQ) with individuals with mental illness in an outpatient setting [85]. A simple random sample of N=73 was taken of the overall number of CMHAs and divided proportionally (see Table 13) by strata using Cochran’s equation for sample sizes [217].

<table>
<thead>
<tr>
<th>Tax Revenue Based Sampling Levels (A)</th>
<th>Tax Revenue per Capita (B)</th>
<th>Tax Revenue Range Size (C)</th>
<th>Counties in Each Level (D)</th>
<th>CMHAs in Each Level (E)</th>
<th>Proportion of Population (F)</th>
<th>CMHAs To Be Sampled (G)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>$12.00 - $15.99</td>
<td>$3.99</td>
<td>14</td>
<td>26</td>
<td>8.7%</td>
<td>6</td>
</tr>
<tr>
<td>Level 2</td>
<td>$16.00 - $19.99</td>
<td>$3.99</td>
<td>39</td>
<td>61</td>
<td>29.4%</td>
<td>21</td>
</tr>
<tr>
<td>Level 3</td>
<td>$20.00 - $23.99</td>
<td>$3.99</td>
<td>27</td>
<td>92</td>
<td>52.7%</td>
<td>39</td>
</tr>
<tr>
<td>Level 4</td>
<td>$24.00 - $44.00</td>
<td>$20.00</td>
<td>8</td>
<td>17</td>
<td>9.2%</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>88</td>
<td>196</td>
<td>100.0%</td>
<td>73</td>
</tr>
</tbody>
</table>

Table 13. CMHA Sample Size using County Tax Equity Per Capita as Strata

The secondary sampling consideration was the number of clients required for the survey. The criteria for participation for clients were that they must be age 18 and above, actively receiving services at the time of the survey, and able to provide consent to participate in the study on the day the survey is administered. There was no data during the design phase of
the study about the number of clients served by each agency. Ideally, a probability sample of clients would have been used in order to ensure clients who participated in the research were representative of all adult clients receiving services at each agency [122]. The ideal sampling process would require a sampling frame by agency listing all adult clients using services [149]. In this way, the sample size could be proportioned based on agency size and each client would have a known probability of selection into the study. However, for several reasons, it was not feasible to obtain identifying information for clients or case managers at each agency. In the first place, it was important for data collection that clients and case managers know that no identifying details would be associated with the study. Second, participation at the agency level would likely have decreased if the burden of participation had been higher for agencies. Third, ethics consideration about the collection and storing of identifying information would have increased the time for IRB approval and study data collection.

Instead, the required sample of clients and case manager were calculated based on the number of levels regression variables and using the total client population of Ohio. Bartlett et al (2001) recommend that the ratio of respondents to each predictor variable intended for analyses fall between 5:1 and 20:1 [217]. In total there were approximately 37 levels of independent variables examined for their relationship to client satisfaction scores (see Figure 6). A ratio of participants to variables of 10:1 was used. The resulting sample size for clients was 370 across all agencies. A second sample size estimate for clients was calculated using the 2012 results from the MHSIP survey, which indicated the services population, was approximately 98,860 adult clients [205]. A random sample for the population, with a 5% margin of error and a 95% confidence level would be about 383 clients. Together both sample size calculations suggested that the total number of clients had to be in the range of 370 to 383 clients. In order
to obtain the minimum number of clients needed from each agency the total number of clients required was divided by the number of agencies in the sample (370/73). A minimum of five (5) clients were required from each agency. In multi-stage sampling there is a tradeoff between the numbers of clusters selected (agencies) and the number of units (clients, and case managers) sampled within the clusters. As done here, it is the general practice to maximize the initial number of clusters (a larger group of agencies across Ohio) in order to ensure differences are captured and to increase the precision of estimates [128, 149].

Similarly, for case managers, the number of variables that were used to ascertain what factors influenced case managers’ perceptions of client satisfaction had 16 levels (Social desirability, chronic disease status, education, race, gender, age, case manager pay, caseload size). This meant the sample size for case managers was 160. A minimum of two (2) case managers were required from each agency.

The selection of the sample size for clients and case managers was the first step in the sample design. The second step was the selection of individuals for participation in the study. Both clients and case managers were selected using non-probability voluntary sampling. This means the sub-sampling, which occurred within each cluster (agency), was completed on a voluntary basis. Clients and case managers who were interested in participation self-selected into the study. On the one hand, a voluntary sample decreases agency burden, helps protect participant confidentiality, and is easier to implement than a probability sample. On the other hand, using this method of selecting individual participants removes the possibility of estimating the precision of the sampling estimates [122].

Individual case managers were not matched to the clients on their caseload. Rather, the study compares aggregate case manager perceptions to aggregate client perceptions. This
information will show in general whether CMHA case managers are aligned in terms of perceptions of satisfaction with the clients they serve.

Recruitment

As a part of the agency-level recruitment (described in detail in Study 1), CMHA administrators gave consent for their agencies to participate in Studies 1, and or 2 and 3. The
recruitment letter and the consent form are attached in the appendices. The recruitment of case managers was completed electronically and in person. CMHA administrators who provided consent for their agencies to participate in Study 2 were e-mailed a recruitment letter with a request that they forward the recruitment letter to case managers working with the agency. Case managers could then complete the survey online using the Qualtrics software described in Study 1 (See page 36). Four CMHA administrators requested that case managers be recruited in person at a monthly case manager meeting.

Client recruitment occurred at a single site of each of the participating CMHAs. Sixteen (16) of the 18 participating CMHAs received one client recruitment visit. At two of the agencies, an initial site visit resulted in no client participants and the administrators allowed a second visit for client recruitment. The client recruitment process involved setting up a table in the agency lobby with a large poster advertising the research project (see Appendix C). Interested clients approached me and indicated their desire to participate or requested additional information. Clients were given the consent form and the survey to complete. In one instance a client’s guardian provided consent and a verbal assent was read to the client. Clients were told that they did not need to write their name on the consent form and that they provided consent by choosing to complete the survey. Where space allowed it, clients completed surveys in a separate private room, otherwise they used a clipboard to complete the survey in the waiting room or lobby. In a few instances clients requested assistance with reading the documents. When clients returned the survey, they were asked a series of interactive consent questions. The surveys of clients who could not answer all of the interactive questions correctly after the third attempt were marked for exclusion from analysis. All clients who returned a survey were
provided with a $10 gift card regardless of the extent to which the survey that was completed. Clients were given a copy of the consent form to take with them.

There were several key steps taken as a part of this research process to protect the rights, confidentiality, and privacy of research participants. An informed consent process was used to obtain consent from each participant. For client participants an interactive consent process, in which clients were asked questions to confirm they understood the research, was used to ensure each individual understood what he or she was being asked to do. In addition, participants were not required to put their names on any documents. However, in a few instances clients indicated they wanted to sign the consent forms and put their names on the surveys. The study was reviewed and approved by the Ohio State University Office of Response Research Practices, which evaluates research for ethical considerations of human subjects. Study reports shared with agencies do not contain information that may be used to identify individual agencies, case managers, or clients. For instance, individuals who identify as Asian or Native Hawaiian/ Pacific Islander compose 2% and .1% respectively of Ohio’s population [218]. Only one each of the case managers and clients who responded to the questionnaire indicated that they identified as being Asian. If those two individuals have identified themselves as Asian within their CMHAs it would be possible to identify them and determine they had participated in the survey. In order to prevent this the responses for Asian and Native Hawaiian/ Pacific Islander were collapsed into the “Mixed or Other Race” category. Finally, research material will be scanned and stored on password protected drive stored in a locked file cabinet until it is appropriate for it to be destroyed.
Data Source

Data were gathered from agency leaders using a brief instrument designed to capture information that would aid in the analysis of the client and case manager data. This survey was administered as a part of Study 1 and included questions on number of case managers, caseload size, and rate of case manager pay (see Figure 7).

**Case Managers**

*Instructions: The next few questions are about employees who provide Community Psychiatric Supportive Treatment (CPST) and who may or may not have other job duties. You may refer to these employees as case managers, case coordinators, or service coordinators. In the following questions, these employees are called case managers.*

17. Please estimate the number of case managers who provide mental health services to adults at your agency? Please include full and part-time case managers at all agency sites.

_____ Number case managers

18. Approximately what percent of case managers at your agency work less than 35 hours per week? Please enter a number between 0-100.

_____ Percent < 35 hours.

19. How are case managers at your agency compensated? (Check all that apply).

- Hourly
- An annual salary
- Per encounter or billable unit
- Other response (Please specify): ________________

20. What is the estimated average hourly rate of pay for case managers in your agency?

- $7.95 - $15.99
- $16.00 - $24.99
- $25.00 - $33.99
- $34.00 - $42.00
- $43 or more
- Other response (Please specify): ________________

21. What is the average caseload of adult clients to each case manager at your agency?

- 1-14
- 15-20
- 21-25
- 26-60
- 31 or more
- Other response (Please specify): ________________

Figure 7. CMHA Administrator Survey - Questions on Case Management Staff
Client data were gathered using the Client Satisfaction Questionnaire-8 (CSQ) paired with a set of demographic and perception questions (see Appendix C). All of the questions on the client survey had fixed response choices. However, an “other” category was included on all but the CSQ part of the questions so that clients could write in answers. The CSQ is an eight-item survey, which has been validated repeatedly in the community mental health treatment setting as well as other service settings. The CSQ has the advantages of being shorter than several other general satisfaction scales, specifically validated in the community mental health setting, and focused on satisfaction. The CSQ does not use language which can be considered outdated or complicated (e.g. referring to individuals as patients, or using the word clinician instead of a more accessible word). The CSQ may be self-administered in 5-7 minutes and is also very easy to score. It should be noted that the CSQ is copyrighted and permission must be received in writing to use the form (Permission letter attached in the appendices). The CSQ was purchased at $0.55 per survey from Tamalpais Matrix Systems using a dissertation grant provided by OhioMHAS. The client incentives (gift cards to Walmart, Kroger, or Giant Eagle) for $10 each were also purchased using funds from the dissertation grant provided by OhioMHAS.

The socio-demographic questions were adapted from other surveys and included questions about race, age range, education, and relationship status. Specifically, response categories copied those used in the Census administered by the Census Bureau [218]. Questions that were used as a proxy for impairment (E.g. Do you feel like you are in control of your behavior and thoughts right now?) were modelled on other surveys [167].

In previous studies where case manager and client perspectives were compared, a similar or the same instrument was used with both case managers and clients [194, 219, 220]. Data was gathered from case managers using a survey designed to mimic the questionnaire for
clients (see Appendix D). Case managers were also asked a series of questions to gather
personal and demographic information to be used in the analysis. Both client and case manager
surveys questions required the selection of a response category but also included an “other”
option where clients and case managers could write in a response. Response categories were
used because they are less burdensome on the participant, are easier to code, and allow the
participant to group themselves into categories (as opposed to the researcher placing the
participant into a group during analysis) [128].

A major concern in the collection of survey data is response bias or response error; any
factor or set of factors that contribute to the measured estimate being different from the actual
statistics [149, 221]. Often response error may be decreased with appropriate survey design
and administration [221]. Individuals may consciously or unconsciously provide inaccurate
answers if they have concerns about their confidentiality. Inaccurate responses may also be
provided if individuals are afraid of the repercussions associated with their answers. Individuals
may also provide answers that they believe will make them seem more like others (socially
desirable) [222, 223]. Finally, sometimes individuals are motivated to provide answers they
believe will please whomever is gathering the data. Both the client and case manager surveys
contained three questions designed to adjust for possible response bias (resulting from social
desirability bias, or bias due to fear of repercussion) which may have resulted in a systematic
deviation in responses away from the true values [149]. Two questions, served as a proxy for
social desirability bias, which leads respondents to attempt to present themselves in a way that
makes them seem better or more like others [223]. The questions were modelled on questions
from the Crowne and Marlowe social desirability scale [222]. The third question evaluated the
level of likelihood of clients and case managers being honest on the survey, by asking about the degree to which they worried that survey answers could be used to harm them.

In addition to the questions about social desirability, the questionnaire responses were reviewed for possible automatic answer selection. Automatic selection occurs when the respondent either selects answer choices at random or selects the first answer choice to every question. The results of the satisfaction questionnaires were reviewed for this error. There were 8 client scores and 32 case manager surveys which showed scores which suggested automatic selection. On closer review, none of the client surveys revealed the pattern required in order to assume automatic responses. A review of the case manager surveys revealed a coding error that resulted in improper scoring of the online case manager surveys. After the correction of the error, none of the case manager surveys reflected the pattern required for automatic entry and all were retained for analysis.

**Analyses**

After the questionnaires were collected, the response choices were keyed into Excel in order to create a data set for analysis. In the case of survey data that were collected from case managers online, the data set was downloaded in a comma separated value (CSV) format from Qualtrics. The data were examined for inconsistencies, outliers, and errors. For the purposes of later analysis, several adjustments and exclusions were made to the data. There were 10 exclusions from the initial client data set (N=349). Two (2) questionnaires were excluded because the client was not able to demonstrate an understanding of the project during the interactive consenting process (See the interactive consent form in Appendix C). Specifically, the clients did not understand that the researcher did not work for the agency at which the
survey was administered or were unclear about what would happen to data after collection. Five (5) questionnaires were excluded because the respondent indicated that they were less than 18 years old and did not meet the criteria for study participation. Two respondents indicated that they had not received mental health services from the agency. The last exclusion was for one survey returned in which all response choices were circled for all questions. In the resulting sample (N=339), one survey did not answer the satisfaction question but did answer the remaining questions. There were no exclusions from the case manager data set.

Missing data was addressed in several ways. For the calculation of satisfaction scores, deductive imputation was used to decrease nonresponse bias and to supply missing answers [121]. This form of imputation uses each respondent’s own data (responses to other questions) to complete missing information. For example, if a client answered 7 of the 8 satisfaction questions with a value of 4 but missed or skipped the last question, the response choice 4 was substituted in place of a missing value to the last question. Another kind of imputation, cell mean imputation, which uses the average from other respondents to complete missing data was used for one agency that did not supply the total number of case managers [121]. The average number of case managers for agencies of similar size was used in that case. The remainder of missing data elements, such as unanswered demographics, were not imputed.

SAS® version 9.4 was used in the analysis of the survey data. SAS includes commands that are appropriate for complex survey designs. PROC SURVEYFREQ, PROC SURVEYMEANS, PROC SURVEYLOGISTIC, and PROC SURVEYREG were all used with options for rate, strata, cluster, weight, and in the case of agency-level, comparisons with the option for domains. In the case of multiple tests for significance, PROC MULTTEST was used to determine the Benjamini and Hochberg False Discovery Rate (FDR) [153-155].
The first set of analyses includes a summary of descriptive characteristics of those CMHAs who participated in Study 1 but not Studies 2 and 3, compared to CMHAs that participated in all three studies. There were also comparisons between the agencies that participated in all three studies and those in the target population who did not participate in any studies. This comparison was completed using the agency location by region, and per capita tax revenue level in the county, which housed the agency’s main office. This information was used to understand whether there were significant differences between the group of agencies that participated in the research and those that did not.

The second set of summary analyses involved socio-demographic characteristics of clients and case managers. Proportions were provided for each response category as well as the standard error (SE) and confidence intervals. In addition, Chi-square tests were used to understand whether case managers and clients looked different in terms of education level, gender, age, race, relationship status, and the presence of a chronic (physical) medical condition. A FDR p value is included in order to adjust the p values for the increased type I error that occurs from running multiple tests for significance [224]. Additional summary data is provided for those questions that were asked of clients and/or case managers. Analyses were also included to test for the differences between clients and case managers on social desirability questions and each of the eight questions that are combined to measure overall satisfaction. These comparisons were made at the individual response level for each question. In order to understand whether there were certain responses that clients or case managers were more likely to give.

The final model was created using variables with significant levels (at p< .05 or lower) from the models described above. Variables were added in a forward stepwise model building
process based on the level of significance in the previous models. Variables were only retained in the model if one of the response categories was significant. This was done for both the overall satisfaction score and for each of the 8 individual questions that make up the CSQ. For ease of comparison, the overall client satisfaction score was converted to a scale of 1-4, with 1 meaning quite dissatisfied and 4 meaning very satisfied (the same scoring used on the CSQ). This four-point scale is used for the eight questions that make up the CSQ-8.

Because of the multi-stage sampling (see above) and the size of the sample compared to the target population (73/196), weights and sampling fractions were included in the calculations [217, 225, 226]. The sampling weight for clients and case managers used the inverse of their selection probability, which in turn was calculated using the total clients and case managers from the agency administrator survey [225, 227]. The sampling weights were calculated after data collection since the information was not present during study design. Clients and case managers were assumed to have an equal probability of being selected within their agencies although in actuality, there may have been factors (discussed in the Limitations section) that resulted in unequal probabilities of selection. A first stage (strata) sampling rate was calculated in order to adjust for the finite population correction factor. This adjustment spreads the variance of the sample to include the part of the population that did not respond and decrease the variances within the sample [121].

Aggregate client satisfaction scores and scores by agency are reported. It is important to note that agency-level estimates may not be representative of the population of individuals within the agency as both clients and case managers volunteered to participate in the research. Finally, multiple regression was used to test for the association between client satisfaction and various sets of variables collected using the survey data.
Results

Agency-level Response Rates

One of the survey elements used to understand the accuracy of survey estimates is the respondent response rate. Lohr (1999) suggests researchers report multiple response rates in order to account for all of the calculations that may serve to inflate or diminish a response rate [121]. Three agency level response rates were calculated for Study 2 (see Table 14). Response Rate 1 was calculated using the number of participants divided by the number of units in the sample \((E/C)\) [121, 122] and provides the highest estimate of rate of response. Response Rate 2 was calculated using the number of participants divided by the number of units in the target population \((E/B)\). Response Rate 3 was calculated using the American Association for Public Opinion Research (AAPOR) formula listed in Figure 3 of Study 1 \((D/[(D)+(F+G)+(B-(D+F+G))]\) [160, 228]. The APPOR rate of response calculation is widely used to represent survey response rates [229, 230].
Table 14. Community-based Mental Health Agency Study Participation Rates

Response rates were not calculated for clients and case managers because they were not sampled using probability sampling. However, in order to gain an idea of the number of client and case manager participants compared to their population within each agency, a response proportion was calculated. CMHAs that participated in the research provided an estimate of the number of adult clients they serve by selecting one of the following response categories: 1) 1-100, 2) 101-250, 3) 251-500, 4) 501-1000, 5) 1001-1500, 6) 1501-2000, 7) 2001+. CMHAs also provided the exact number of case managers that were employed with their agencies. Clients served were calculated using the mean of the two endpoints at each response level, except for the last response level where the 2001 category was used. For clients, the proportion of the population at the 18 participating agencies that were surveyed was 1.1 percent on average with a range between .5% to almost 20%. For case managers the proportion of the population surveyed ranged from 7.5% to 97%, with an average proportion of 20.3%. Information on clients and case manager populations was not available for all of the agencies that formed the overall target population (N=196). Hence, comparisons were not made on how
well the respondent agencies represented non-respondent agencies in terms of client and case manager populations.

**Univariable Analyses of CMHAs Characteristics**

Summary CMHA characteristics are shown in Table 15 for agencies that participated in Study 2 as well as those agencies that participated in Study 1 and were eligible for Study 2 but declined participation. Results of Fisher’s Exact Tests comparing the distributions of years providing services, size, and geographic distribution of agencies in both Study 1 and 2 found no difference in years providing mental health services or in geographic distribution. However, there was a statistically significant difference ($\chi^2 = 11.26, \rho = .0239$) between respondent groups on agency size. Seventy-two percent (72%) of agencies that participated in Study 2 served 2001 or more clients while 21% of agencies that participated in Study 1 only served 2001 clients or more.

Data on two summary characteristics (geographic distribution, and sampling strata) were available for the entire target population of Study 2. For the target population of CMHAs (N=196) the geographic distribution was Northwest (14%), Northeast (32%), Central (17%), Southwest (23%), and Southeast (15%). A Fisher’s Exact Test showed that there was no statistically significant difference ($\chi^2 = 10.18, \rho = .0733$) between the regional distribution of the target population and those who completed Study 2. Table 14 shows that there is a difference between the distributions of agencies based on the tax-revenue based sampling strata. In fact, all of the 18 respondent agencies were concentrated in Strata 2 and 3. No agencies from the stratum with the lowest tax revenue per capita participated in the survey. Nor were there any respondent agencies from the stratum with the highest tax revenue per capita.
### Descriptive Characteristics for Agencies in Studies 1 and 2 vs. Study 1 Only

<table>
<thead>
<tr>
<th>Years Providing Mental Health Services</th>
<th>Study 1 and 2 Respondents (N=18)</th>
<th>Study 1 Only Respondents (N=14)</th>
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<tr>
<td>1 - 5 years</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>6-15 years</td>
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<td>14%</td>
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<tr>
<td>16-25 years</td>
<td>6%</td>
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</tr>
<tr>
<td>26-35 years</td>
<td>11%</td>
<td>7%</td>
</tr>
<tr>
<td>36-45 years</td>
<td>28%</td>
<td>36%</td>
</tr>
<tr>
<td>46 or more years</td>
<td>44%</td>
<td>21%</td>
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<td></td>
<td>100%</td>
<td>100%</td>
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</table>

<table>
<thead>
<tr>
<th>Number of unique adults with mental illness served annually</th>
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</thead>
<tbody>
<tr>
<td>1-100 clients</td>
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<tr>
<td>101-250 clients</td>
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<td>251-500 clients</td>
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<td>501-1000 clients</td>
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<td>1001-1500 clients</td>
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<td>1501-2000 clients</td>
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<tr>
<td>2001 or more clients</td>
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</table>

<table>
<thead>
<tr>
<th>Geographic Distribution</th>
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<tbody>
<tr>
<td>Northwest</td>
</tr>
<tr>
<td>Northeast</td>
</tr>
<tr>
<td>Central</td>
</tr>
<tr>
<td>Southwest</td>
</tr>
<tr>
<td>Southeast</td>
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</tr>
</tbody>
</table>

Table 15. Descriptive Characteristics: Respondent to Non-Respondent Agencies
Univariable Analyses of Client and Case Manager Demographics and Personal Characteristics

Overall survey results for 338 clients and 185 case managers were used in the analyses. Table 16 provides demographic, socio-economic, and other personal characteristics of clients and case managers who participated in the study. The table includes the number of respondents for each question, the percent of respondents who fell into each category, the rho (ρ) value associated with the results of a Rao-Scott Chi-square Test that was used to test for differences between the two groups, and the false discovery rate (FDR) corrected p value [154, 226]. Significance at ρ < .05, ρ < .01, ρ< .001, and ρ < .0001 are marked using the FDR corrected p value. There were significant differences between clients and case managers on gender, level of education, relationship status, and presence of a chronic medical condition. The two groups were similar in terms of age and race.

Demographics of the study respondents were compared to other available demographic information about the larger populations, which clients and case managers represent. For comparison information was taken from 2013 census data, survey data collected by OhioMHAS, and survey data collected in a study of case managers that was published in 2013 [193, 205, 218]. Females were 51.1% of the general Ohio population. Individuals who identify as white or Caucasian were 83.2% of the population. Blacks or African Americans were 12.5% of the population. Both the case manager and client respondents in the study were different in race, and gender compared to the population in Ohio. Individuals in the study tended to be more black or African American, and more female (for case managers) and less female (for clients).

The client group however, was more similar in racial distribution to the representative sample of adult clients surveyed by OhioMHAS in 2012 using the Mental Health Statistics Improvement Program (MHSIP) survey. Respondents to the MHSIP were 63.7% female, 69.9%...
White, 25.9% black, and 4.5% aged 65 years and older. In a survey of 114 case managers from CMHAs across Ohio, Kraus and Stein (2013) found that 78.6% were women, 90% European American, 74% married or living with a domestic partner, 50% had a bachelor’s degree and 33% had a master’s degree. The case managers in this study have lower percentages of women, European Americans, and case managers involved in relationships, but similar percentages in possession of bachelor’s and master’s degrees.
Client and Case Manager Socio-Demographic Traits with Rao-Scott Chi-square Test

<table>
<thead>
<tr>
<th>Traits</th>
<th>Percent Clients</th>
<th>Percent CMs</th>
<th>Std Error</th>
<th>Lower 95% CL</th>
<th>Upper 95% CL</th>
<th>Std Error</th>
<th>Lower 95% CL</th>
<th>Upper 95% CL</th>
<th>X²</th>
<th>P value</th>
<th>FDR Corrected P Value</th>
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<td>Age Range</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>18-29 years</td>
<td>15.7%</td>
<td>24.4%</td>
<td>2.3%</td>
<td>11.6%</td>
<td>19.8%</td>
<td>5.3%</td>
<td>15.1%</td>
<td>33.7%</td>
<td>5.4</td>
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<td>.082</td>
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<tr>
<td>30-49 years</td>
<td>41.6%</td>
<td>49.7%</td>
<td>2.3%</td>
<td>37.5%</td>
<td>45.7%</td>
<td>2.7%</td>
<td>44.9%</td>
<td>54.5%</td>
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</tr>
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<td>50+ years</td>
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<td>20.7%</td>
<td>2.6%</td>
<td>32.7%</td>
<td>41.8%</td>
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<td>5.2%</td>
<td>0.8%</td>
<td>4.1%</td>
<td>6.8%</td>
<td>2.3%</td>
<td>1.1%</td>
<td>9.2%</td>
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<tr>
<td>Gender</td>
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<td></td>
<td></td>
<td>11.5</td>
<td>.0007</td>
<td>.0011**</td>
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<tr>
<td>Female</td>
<td>40.5%</td>
<td>61.2%</td>
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<td>35.2%</td>
<td>45.8%</td>
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<tr>
<td>Male</td>
<td>51.5%</td>
<td>36.8%</td>
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<td>46.4%</td>
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<td>0.5%</td>
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<tr>
<td>Race</td>
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<td></td>
<td></td>
<td>0.3</td>
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<td>.878</td>
</tr>
<tr>
<td>Black</td>
<td>29.5%</td>
<td>26.4%</td>
<td>4.4%</td>
<td>21.9%</td>
<td>37.2%</td>
<td>7.1%</td>
<td>13.9%</td>
<td>38.9%</td>
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<tr>
<td>Mixed/Other Race</td>
<td>4.4%</td>
<td>4.4%</td>
<td>1.0%</td>
<td>2.6%</td>
<td>6.2%</td>
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<td>7.9%</td>
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<td>White/Caucasian</td>
<td>59.8%</td>
<td>65.8%</td>
<td>5.2%</td>
<td>50.7%</td>
<td>68.9%</td>
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<td>7.8%</td>
<td>1.6%</td>
<td>0.7%</td>
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</tr>
<tr>
<td>Education</td>
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<td></td>
<td>24.5</td>
<td>&lt;.0001</td>
<td>.0003***</td>
</tr>
<tr>
<td>Grades 9-12 or GED</td>
<td>62.9%</td>
<td>58.8%</td>
<td>3.0%</td>
<td>57.7%</td>
<td>68.1%</td>
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<td>15.7%</td>
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</tr>
<tr>
<td>Associates/Vocational</td>
<td>19.0%</td>
<td>10.1%</td>
<td>2.0%</td>
<td>15.5%</td>
<td>22.6%</td>
<td>3.2%</td>
<td>4.4%</td>
<td>15.7%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Completed 4yr College</td>
<td>6.1%</td>
<td>7.7%</td>
<td>0.9%</td>
<td>4.5%</td>
<td>7.7%</td>
<td>2.7%</td>
<td>5.1%</td>
<td>65.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate/Professional</td>
<td>3.6%</td>
<td>27.4%</td>
<td>1.0%</td>
<td>1.9%</td>
<td>5.3%</td>
<td>4.0%</td>
<td>20.4%</td>
<td>34.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>8.4%</td>
<td>4.4%</td>
<td>1.0%</td>
<td>6.8%</td>
<td>10.1%</td>
<td>2.4%</td>
<td>0.2%</td>
<td>8.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11.7</td>
<td>.0006</td>
<td>.0011**</td>
</tr>
<tr>
<td>Involved</td>
<td>34.7%</td>
<td>59.1%</td>
<td>3.2%</td>
<td>29.1%</td>
<td>40.3%</td>
<td>2.9%</td>
<td>54.0%</td>
<td>64.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>58.9%</td>
<td>37.2%</td>
<td>2.8%</td>
<td>54.0%</td>
<td>63.7%</td>
<td>3.3%</td>
<td>31.5%</td>
<td>43.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>6.4%</td>
<td>3.7%</td>
<td>0.9%</td>
<td>4.9%</td>
<td>8.0%</td>
<td>1.6%</td>
<td>0.9%</td>
<td>6.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24.0</td>
<td>&lt;.0001</td>
<td>.0003***</td>
</tr>
<tr>
<td>No</td>
<td>37.2%</td>
<td>58.8%</td>
<td>2.5%</td>
<td>32.8%</td>
<td>41.6%</td>
<td>2.9%</td>
<td>53.8%</td>
<td>63.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>52.9%</td>
<td>34.6%</td>
<td>2.6%</td>
<td>48.4%</td>
<td>57.4%</td>
<td>3.3%</td>
<td>28.9%</td>
<td>40.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>9.9%</td>
<td>6.6%</td>
<td>1.4%</td>
<td>7.4%</td>
<td>12.4%</td>
<td>1.8%</td>
<td>3.5%</td>
<td>9.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Table 16. Demographics for Client and Case Managers with Chi-square Test for Difference.
Table 17 shows clients’ and case managers’ responses to the three questions. Clients are more likely than case managers to think that complaints are always required in order for people to get what they want. Clients are also less likely than case managers to indicate that it is very important to them (clients) to please others. The majority of clients (82.5%) and case managers (87.5%) indicated that they were not worried about the results of the survey affecting their services or jobs. However, a small portion of both groups did indicate that they were either a little worried or very worried about the impact the survey may have on them.
Table 17. Questions Measuring Social Desirability and Concern of Harm from the Survey

<table>
<thead>
<tr>
<th>Questions Designed to Measure Social Desirability Bias</th>
<th>Client</th>
<th>Case Manager (CM)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Percent of Clients (%)</td>
</tr>
<tr>
<td>How often are complaints required in order to get things done?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td>305</td>
<td>17.0%</td>
</tr>
<tr>
<td>Some-times</td>
<td>305</td>
<td>55.6%</td>
</tr>
<tr>
<td>Never</td>
<td>305</td>
<td>21.3%</td>
</tr>
<tr>
<td>Other</td>
<td>305</td>
<td>6.2%</td>
</tr>
<tr>
<td>How important is it to you to please others?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very</td>
<td>317</td>
<td>32.7%</td>
</tr>
<tr>
<td>Depends</td>
<td>317</td>
<td>61.0%</td>
</tr>
<tr>
<td>Not important</td>
<td>317</td>
<td>5.7%</td>
</tr>
<tr>
<td>Other</td>
<td>317</td>
<td>0.6%</td>
</tr>
<tr>
<td>How worried are you about this survey impacting your services/job:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not worried</td>
<td>315</td>
<td>82.5%</td>
</tr>
<tr>
<td>A little worried</td>
<td>315</td>
<td>12.9%</td>
</tr>
<tr>
<td>Very worried</td>
<td>315</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

Table 17. Questions Measuring Social Desirability and Concern of Harm from the Survey

**Client Experience in Mental Health Services and Feelings of Impairment**

The results of additional questions asked of clients and case managers are shown in Tables 18 and 19. Most clients had been receiving services at the agency where they took the survey for 6 months or more. Slightly more than 70% of clients indicated that agency staff asked about clients’ feelings regarding services sometimes or regularly. Although 29% did indicate that staff rarely or never asked about their (the clients’) feelings about services. Forty-one
percent (41%) of clients indicated they had been using mental health services for 10 or more years. Fifty-six percent (56%) of clients indicated most or all of the mental health services they had used were helpful. A little over a third of clients (34%) indicated that their mental health concerns had either a big impact on their ability to do most things on their own or that they had been unable to do most things on their own over the last week. However, most clients (88%) indicated they felt like they were in control of their thoughts and behaviors at the time of the survey. Sixty-six percent (66%) of clients indicated that in the last week mental health concerns had had some to no impact on their ability to do most things on their own. Almost 5% of clients indicated that they had been unable to do most things on their own over the last week.
### Client Mental Health Service Experience and Personal Impairment

<table>
<thead>
<tr>
<th>Question</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error</th>
<th>Lower 95% CL</th>
<th>Upper 95% CL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altogether, approximately how long have you received services from this agency?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1 month</td>
<td>314</td>
<td>8.03%</td>
<td>1.47%</td>
<td>5.46%</td>
<td>10.60%</td>
</tr>
<tr>
<td>1=&gt; to &lt; 3 months</td>
<td>314</td>
<td>9.72%</td>
<td>1.52%</td>
<td>7.08%</td>
<td>12.37%</td>
</tr>
<tr>
<td>3=&gt; to &lt;6 months</td>
<td>314</td>
<td>10.04%</td>
<td>1.76%</td>
<td>6.96%</td>
<td>13.12%</td>
</tr>
<tr>
<td>6 or more months</td>
<td>314</td>
<td>72.21%</td>
<td>2.20%</td>
<td>68.37%</td>
<td>76.05%</td>
</tr>
<tr>
<td>How often do staff members ask how you feel about services?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regularly</td>
<td>314</td>
<td>35.54%</td>
<td>2.00%</td>
<td>32.05%</td>
<td>39.04%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>314</td>
<td>35.71%</td>
<td>2.87%</td>
<td>30.69%</td>
<td>40.73%</td>
</tr>
<tr>
<td>Rarely</td>
<td>314</td>
<td>15.19%</td>
<td>2.00%</td>
<td>11.69%</td>
<td>18.69%</td>
</tr>
<tr>
<td>Never</td>
<td>314</td>
<td>13.55%</td>
<td>1.59%</td>
<td>10.77%</td>
<td>16.33%</td>
</tr>
<tr>
<td>Thinking about last week, how much would you say mental health concerns affected your ability to do most things on your own?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No impact</td>
<td>318</td>
<td>18.79%</td>
<td>2.21%</td>
<td>14.93%</td>
<td>22.66%</td>
</tr>
<tr>
<td>A little impact</td>
<td>318</td>
<td>19.23%</td>
<td>2.24%</td>
<td>15.32%</td>
<td>23.14%</td>
</tr>
<tr>
<td>Some impact</td>
<td>318</td>
<td>28.03%</td>
<td>2.44%</td>
<td>23.78%</td>
<td>32.28%</td>
</tr>
<tr>
<td>A big impact</td>
<td>318</td>
<td>29.18%</td>
<td>2.00%</td>
<td>25.68%</td>
<td>32.67%</td>
</tr>
<tr>
<td>I have not been able to do most things on my own</td>
<td>318</td>
<td>4.78%</td>
<td>0.98%</td>
<td>3.07%</td>
<td>6.49%</td>
</tr>
<tr>
<td>Do you feel like you are in control of your behavior and thoughts right now?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, definitely so</td>
<td>320</td>
<td>41.85%</td>
<td>2.74%</td>
<td>37.08%</td>
<td>46.63%</td>
</tr>
<tr>
<td>Yes, for the most part</td>
<td>320</td>
<td>46.15%</td>
<td>1.54%</td>
<td>43.46%</td>
<td>48.83%</td>
</tr>
<tr>
<td>No, not really</td>
<td>320</td>
<td>10.12%</td>
<td>1.68%</td>
<td>7.18%</td>
<td>13.06%</td>
</tr>
<tr>
<td>No, not at all</td>
<td>320</td>
<td>1.88%</td>
<td>0.61%</td>
<td>0.81%</td>
<td>2.95%</td>
</tr>
<tr>
<td>Altogether, approximately how long have you been receiving mental health services in your lifetime?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>318</td>
<td>15.94%</td>
<td>2.21%</td>
<td>12.09%</td>
<td>19.80%</td>
</tr>
<tr>
<td>More than 1 but less than 5 years</td>
<td>318</td>
<td>23.88%</td>
<td>1.91%</td>
<td>20.55%</td>
<td>27.22%</td>
</tr>
<tr>
<td>More than 5 but less than 10 years</td>
<td>318</td>
<td>17.62%</td>
<td>2.16%</td>
<td>13.86%</td>
<td>21.39%</td>
</tr>
<tr>
<td>10 or more years</td>
<td>318</td>
<td>41.57%</td>
<td>3.54%</td>
<td>35.39%</td>
<td>47.74%</td>
</tr>
<tr>
<td>Other</td>
<td>318</td>
<td>0.98%</td>
<td>0.48%</td>
<td>0.15%</td>
<td>1.82%</td>
</tr>
<tr>
<td>In general, how would you rate the mental health services you have received over your lifetime?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All were helpful</td>
<td>312</td>
<td>23.83%</td>
<td>1.48%</td>
<td>21.24%</td>
<td>26.42%</td>
</tr>
<tr>
<td>Most were helpful</td>
<td>312</td>
<td>32.74%</td>
<td>2.31%</td>
<td>28.71%</td>
<td>36.78%</td>
</tr>
<tr>
<td>Some were better than others</td>
<td>312</td>
<td>29.80%</td>
<td>2.65%</td>
<td>25.17%</td>
<td>34.42%</td>
</tr>
<tr>
<td>Few were helpful</td>
<td>312</td>
<td>9.61%</td>
<td>1.43%</td>
<td>7.12%</td>
<td>12.10%</td>
</tr>
<tr>
<td>None were helpful</td>
<td>312</td>
<td>1.80%</td>
<td>0.67%</td>
<td>0.63%</td>
<td>2.97%</td>
</tr>
</tbody>
</table>

Table 18. Client Only Personal Characteristics
Case Managers were asked whether they thought agency services were helping clients towards recovery. Recovery was defined (see Glossary) as a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential. The majority of case managers (98%) indicated that agencies were somewhat or very helpful in helping clients achieve recovery. Twenty-six percent (26%) indicated that agencies were very helpful in helping clients achieve recovery. For comparison, in Study 1, all but one of the responding agencies indicated that helping clients achieve recovery was a strategic goal of their agency. More than half (57%) of case managers had been with their current agency for less than five years and 40% had been in the field of behavioral health for less than five years. Overall, case managers were not concerned about their mental or physical health, but 11% and 18% respectively indicated they were very concerned about their mental and physical health.
### Case Manager Behavioral Health Work Experience and Health Concerns

<table>
<thead>
<tr>
<th>Label</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error</th>
<th>Lower 95% CL</th>
<th>Upper 95% CL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How helpful would you say services at this agency have been in helping clients in the process of recovery from mental illness?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very helpful</td>
<td>182</td>
<td>26.31%</td>
<td>2.34%</td>
<td>22.23%</td>
<td>30.39%</td>
</tr>
<tr>
<td>Somewhat Helpful</td>
<td>182</td>
<td>71.72%</td>
<td>2.18%</td>
<td>67.92%</td>
<td>75.53%</td>
</tr>
<tr>
<td>Not helpful</td>
<td>182</td>
<td>1.97%</td>
<td>0.82%</td>
<td>0.54%</td>
<td>3.39%</td>
</tr>
<tr>
<td><strong>For how long have you worked for this agency?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal to or less than one year</td>
<td>183</td>
<td>25.04%</td>
<td>4.24%</td>
<td>17.65%</td>
<td>32.44%</td>
</tr>
<tr>
<td>More than 1 but less than 5 years</td>
<td>183</td>
<td>32.25%</td>
<td>2.66%</td>
<td>27.60%</td>
<td>36.90%</td>
</tr>
<tr>
<td>More than 5 but less than 10 years</td>
<td>183</td>
<td>27.66%</td>
<td>4.79%</td>
<td>19.30%</td>
<td>36.02%</td>
</tr>
<tr>
<td>10 or more years</td>
<td>183</td>
<td>15.05%</td>
<td>3.32%</td>
<td>9.26%</td>
<td>20.84%</td>
</tr>
<tr>
<td><strong>For how long have you worked in the field of behavioral health?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than one year</td>
<td>183</td>
<td>14.09%</td>
<td>3.01%</td>
<td>8.84%</td>
<td>19.35%</td>
</tr>
<tr>
<td>More than 1 but less than 5 years</td>
<td>183</td>
<td>26.83%</td>
<td>2.38%</td>
<td>22.67%</td>
<td>30.99%</td>
</tr>
<tr>
<td>More than 5 but less than 10 years</td>
<td>183</td>
<td>22.63%</td>
<td>3.68%</td>
<td>16.21%</td>
<td>29.05%</td>
</tr>
<tr>
<td>10 or more years</td>
<td>183</td>
<td>36.04%</td>
<td>5.31%</td>
<td>26.78%</td>
<td>45.31%</td>
</tr>
<tr>
<td><strong>How concerned about your mental health have you been in the past month?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not concerned</td>
<td>182</td>
<td>52.93%</td>
<td>2.75%</td>
<td>48.13%</td>
<td>57.73%</td>
</tr>
<tr>
<td>A little concerned</td>
<td>182</td>
<td>35.85%</td>
<td>1.82%</td>
<td>32.67%</td>
<td>39.02%</td>
</tr>
<tr>
<td>Very Concerned</td>
<td>182</td>
<td>11.23%</td>
<td>1.66%</td>
<td>8.32%</td>
<td>14.13%</td>
</tr>
<tr>
<td><strong>How concerned about your physical health have you been in the last month?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not concerned</td>
<td>181</td>
<td>45.27%</td>
<td>4.16%</td>
<td>38.01%</td>
<td>52.53%</td>
</tr>
<tr>
<td>A little concerned</td>
<td>181</td>
<td>36.53%</td>
<td>2.87%</td>
<td>31.51%</td>
<td>41.54%</td>
</tr>
<tr>
<td>Very Concerned</td>
<td>181</td>
<td>18.21%</td>
<td>2.67%</td>
<td>13.54%</td>
<td>22.87%</td>
</tr>
</tbody>
</table>

Table 19. Case Manager Only Characteristics
Figures 8 and 9 show the distribution and range of aggregate client and case manager satisfaction scores. Client scores range from 25% to 100% while case manager scores range from 43% to 100%.

![Histogram of Mean Client Satisfaction Scores](image.png)

Figure 8. Histogram of Mean Client Satisfaction Scores
The CSQ uses eight questions in order to measure client satisfaction with services. Table 20 provides the responses to the individual questions used to measure the satisfaction scores and compares the answers of clients to case managers. The table also shows the results of a binary logit model indicating the odds of clients providing an answer at each response level of the questions compared to case managers. In general, clients have a higher likelihood of providing answers in the extreme response levels of each question (e.g. excellent and poor), whereas case manager answers tend to concentrate in the middle answers (e.g. good, and fair).
## Table 20. Individual Questions Related to Satisfaction

<table>
<thead>
<tr>
<th>Questions</th>
<th>Client Satisfaction</th>
<th>CM Perceptions of Client Satisfaction</th>
<th>Odds of Client vs. CM Response Compared to Other Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SE</td>
<td>Lower 95% CL</td>
</tr>
<tr>
<td>1. Quality of services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent</td>
<td>51.9%</td>
<td>3.4%</td>
<td>45.9%</td>
</tr>
<tr>
<td>Good</td>
<td>36.9%</td>
<td>2.7%</td>
<td>32.3%</td>
</tr>
<tr>
<td>Fair</td>
<td>9.2%</td>
<td>1.7%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Poor</td>
<td>2.1%</td>
<td>0.6%</td>
<td>1.1%</td>
</tr>
<tr>
<td>2. Received services you/client wanted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, definitely</td>
<td>46.2%</td>
<td>3.1%</td>
<td>40.8%</td>
</tr>
<tr>
<td>Yes generally</td>
<td>43.3%</td>
<td>2.5%</td>
<td>39.0%</td>
</tr>
<tr>
<td>No, not really</td>
<td>6.9%</td>
<td>1.3%</td>
<td>4.6%</td>
</tr>
<tr>
<td>No, definitely not</td>
<td>3.6%</td>
<td>1.1%</td>
<td>1.7%</td>
</tr>
<tr>
<td>3. Program met needs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Almost all have been met</td>
<td>37.7%</td>
<td>1.9%</td>
<td>34.4%</td>
</tr>
<tr>
<td>Most have been met</td>
<td>44.7%</td>
<td>1.4%</td>
<td>42.2%</td>
</tr>
<tr>
<td>Only a few needs met</td>
<td>15.5%</td>
<td>2.0%</td>
<td>12.1%</td>
</tr>
<tr>
<td>No needs met</td>
<td>2.1%</td>
<td>0.7%</td>
<td>1.0%</td>
</tr>
<tr>
<td>4. Recommend the program to others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, definitely</td>
<td>60.4%</td>
<td>2.0%</td>
<td>57.0%</td>
</tr>
<tr>
<td>Yes I think so</td>
<td>32.5%</td>
<td>1.7%</td>
<td>29.5%</td>
</tr>
<tr>
<td>I don’t think so</td>
<td>3.8%</td>
<td>0.7%</td>
<td>2.5%</td>
</tr>
<tr>
<td>No, definitely not</td>
<td>3.3%</td>
<td>0.9%</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Continued
Table 20 continued

<table>
<thead>
<tr>
<th>5.</th>
<th>Satisfied with the help received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very satisfied</td>
<td>45.9%</td>
</tr>
<tr>
<td>Mostly satisfied</td>
<td>36.8%</td>
</tr>
<tr>
<td>Indifferent or mildly satisfied</td>
<td>10.3%</td>
</tr>
<tr>
<td>Quite dissatisfied</td>
<td>7.0%</td>
</tr>
</tbody>
</table>

6. Services helped me/client deal more effectively with my problems

| Yes, helped a great deal | 55.0% | 2.2% | 51.2% | 58.9% | 59.8% | 2.4% | 55.6% | 64.0% | .82 | 0.595 | 1.126 |
| Yes, helped somewhat | 37.5% | 2.0% | 33.9% | 41.0% | 37.8% | 2.0% | 34.4% | 41.3% | .99 | 0.746 | 1.313 |
| No, really did not help | 5.2% | 1.0% | 3.5% | 6.9% | 2.4% | 0.9% | 0.8% | 4.0% | 2.3 | 0.729 | 6.963 |
| No, Made things worse | 2.3% | 0.5% | 1.5% | 3.2% | 0.0% | 0.0% | 0.0% | 0.0% | n/a |

7. Overall satisfaction with services

| Very satisfied | 50.4% | 2.7% | 45.6% | 55.1% | 28.8% | 4.1% | 21.7% | 35.9% | 2.6*** | 1.677 | 3.937 |
| Mostly satisfied | 39.6% | 2.0% | 36.1% | 43.0% | 64.4% | 4.1% | 57.2% | 71.6% | .36*** | 0.243 | 0.521 |
| Indifferent | 7.2% | 1.5% | 4.6% | 9.7% | 5.5% | 1.3% | 3.2% | 7.8% | 1.3 | 0.736 | 2.305 |
| Quite dissatisfied | 2.9% | 0.8% | 1.5% | 4.3% | 1.3% | 0.8% | -0.1% | 2.8% | 2.2 | 0.418 | 11.431 |

8. Would you/the client return to this program

| Yes, definitely | 54.0% | 2.5% | 49.6% | 58.3% | 28.7% | 3.1% | 23.2% | 34.1% | 2.9*** | 1.88 | 4.437 |
| Yes, I think so | 38.8% | 2.1% | 35.2% | 42.5% | 68.2% | 3.3% | 62.4% | 73.9% | .30*** | 0.196 | 0.458 |
| No, I do not think so | 5.1% | 1.0% | 3.4% | 6.7% | 2.6% | 0.8% | 1.1% | 4.1% | 2.0 | 0.946 | 4.320 |
| No, definitely not | 2.2% | 0.7% | 1.0% | 3.4% | 0.6% | 0.5% | -0.2% | 1.4% | 3.6 | 0.418 | 31.589 |

Significance using the Benjamini Hochberg False Discovery Rate
*p <.05  **p <.01  ***p <.001  ****p <.0001

Main Findings for Hypothesis 1: Aggregate Client and Case Manager Scores on Client Satisfaction

Table 21 examines the relationship between clients’ and case managers’ scores at each agency. The table also includes a test for the difference in scores at each of the agencies. Using the FDR corrected p value the difference was only significant at one agency. In four of the
agencies, the mean score for how satisfied case managers perceive clients to be is lower than that of the clients’ perceptions of their satisfaction. However, in the other agencies the estimates of client satisfaction are higher than the estimates from case managers.
## Agency-Level Estimates of Satisfaction for Clients and Case Managers

<table>
<thead>
<tr>
<th>Agency</th>
<th>N</th>
<th>Mean (%)</th>
<th>SE (%)</th>
<th>Lower 95% CL (%)</th>
<th>Upper 95% CL (%)</th>
<th>N</th>
<th>Mean (%)</th>
<th>SE (%)</th>
<th>Lower 95% CL (%)</th>
<th>Upper 95% CL (%)</th>
<th>B Coefficient (%)</th>
<th>STD Error (%)</th>
<th>T Value</th>
<th>Pr &gt; ltl</th>
<th>FDR Corrected p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>85.0</td>
<td>3.60</td>
<td>79.1</td>
<td>90.9</td>
<td>9</td>
<td>72.9</td>
<td>1.83</td>
<td>69.9</td>
<td>76.0</td>
<td>12.1</td>
<td>4.22</td>
<td>2.86</td>
<td>.0104</td>
<td>.0624</td>
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<tr>
<td>2</td>
<td>8</td>
<td>87.9</td>
<td>2.28</td>
<td>84.1</td>
<td>91.7</td>
<td>8</td>
<td>77.7</td>
<td>1.42</td>
<td>75.4</td>
<td>80.1</td>
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<td>3.32</td>
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<td>3</td>
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<td>71.9</td>
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<td>13</td>
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<td>85.1</td>
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<td>93.5</td>
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<td>87.8</td>
<td>18</td>
<td>78.7</td>
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<td>2.17</td>
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<td>.1717</td>
</tr>
</tbody>
</table>

Table 21. Satisfaction Scores by Agency

Aggregate satisfaction scores for clients and case managers are presented in Table 22.

The research literature indicates that it is important to correct survey estimates for the design
features associated with the survey [217, 225, 226]. Aggregate satisfaction scores are presented with and without imputation, weighted and unweighted, and with and without the finite population correction (FPC) factor in order to observe the effect on the estimates and errors. For clients, weighting and imputation together increased the estimate, standard error of the mean, and the width of the confidence interval. For case managers weighting and imputation decreased the estimate of satisfaction and the confidence interval slightly but increased the standard error. Overall the differences in the aggregate point estimates of satisfaction were minimal (less than 1%), regardless of whether imputation or weighting was used. When an FPC calculation was included for each strata, the estimate compared to the estimate from weighting with imputation remained unchanged but the standard error of the mean and the range of the confidence interval decreased. The mean client score on the CSQ was 83.98%. The mean client satisfaction score as perceived by case managers was 80.15%.

<table>
<thead>
<tr>
<th>Calculation</th>
<th>Clients</th>
<th>Case Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean Satisfactio n Score (%)</td>
</tr>
<tr>
<td>No Imputation + Unweighted + No FPC</td>
<td>327</td>
<td>83.3%</td>
</tr>
<tr>
<td>With Imputation + Weighted + No FPC</td>
<td>338</td>
<td>84.0%</td>
</tr>
<tr>
<td>With Imputation + Weighted + With FPC</td>
<td>338</td>
<td>84.0%</td>
</tr>
</tbody>
</table>

Table 22. Aggregate Client and Case Manager Satisfaction Scores
Significance Testing of the Association between Various Factors and Client Satisfaction

The results of regression models to determine the association between client satisfaction and various factors are below. P values are highlighted for convenience.

Socio-demographic Variables

Several socio-demographic variables were found to be associated with client satisfaction scores. The first model (Adj. $R^2 = .0350$, Model F value = 3.52) adjusted for demographic variables and included age, race, gender, education status, relationship status, and the presence of a chronic medical condition.

- Black race (Est.: -3.51, Std. Error: 1.44, t value = -2.43, p value = .027) and Mixed or other race (Est.: -12.69, Std. Error: 4.31, t value = -2.94, p value = .001) were associated with lower client satisfaction scores when compared to Whites.

- However, when the model was updated (Adj. $R^2 = .0295$, Model F value = 6.99) to include interaction terms for age*education, age*chronic illness, race*education, race*relationship status, gender*race, and gender*chronic illness the main effects of race were no longer significant. Instead, there were two significant interactions. Individuals who were of mixed or other race and involved in a relationship had lower satisfaction scores than individuals who were white and single (Est.: -15.13, Std. Error: 5.28, t value = -2.86, p value = .011). Individuals who were of mixed or other race and possessed at least an associate’s degree were less satisfied than whites with graduate degrees (Est.: -15.03, Std. Error: 6.08, t value = -2.47, p value = .025).
Social Desirability and Participant Concern

The second model included those questions designed to measure social desirability. The three questions on social desirability asked respondents what they thought about complaining, whether they thought it was important to please others, and whether they were worried about how the survey responses (despite being anonymous) might impact their services. This model (Adj. $R^2 = .1205$, Model F value = 8.36), indicated that individuals’ feelings on whether it is important to please others, specifically feeling that the motivation to please others “depends on the situation,” is negatively associated with client satisfaction scores (Est.: -7.59, Std. Error: 1.35, t value = -5.57, p value = <.0001). The other two questions were not found to be significantly associated with client satisfaction scores.

Client Experience in Mental Health Services and Feelings of Impairment

The third model controlled for other questions related to the client treatment experience and the client’s mental health (see Table 17 for a list of questions). This model (Adj. $R^2 = .1985$, Model F value = 116.22), showed that two response levels significantly affected client satisfaction scores. An indication from clients that staff never asked how they (the clients) feel about services negatively adjusted client satisfaction scores (Estimate: -12.12, Std. Error: 2.19, t value = -5.53, p value = <.0001). The indication that all mental health services received over the clients’ lifetime were helpful positively adjusted client satisfaction scores (Est.: 9.37, Standard Error: 2.52, t value = 3.71, p value = .002).

Although data on client diagnoses were not collected, two questions were included as a proxy for clients’ level of functioning and experience of their mental illness at the time of the survey (see Table 17). One question asked clients to rate how much mental health concerns had affected their ability to function independently over the last week. The second question asked...
clients to comment on whether they felt in control of their thoughts and behaviors at the time of the survey. These two variables were also evaluated for their impact on client satisfaction scores. The model (Adj $R^2 = .031$, Model F value = 9.70) indicated that compared to clients who felt that they were in control of their thoughts and behavior, clients who felt that they were not really in control (Est. = -7.99, Std. Error = 3.03, $p$ value = .018) and clients who felt that they were not at all in control (Est. = -6.35, Std. Error = 2.97, $p$ value = .048) of their thoughts and behaviors at the time of the survey had lower client satisfaction scores.

**Caseload Size and Case Manager Pay**

The fourth model controlled for caseload size and case manager pay (Adj. $R^2 = .0187$, Model F value = 2.18E12), and found that being on a smaller caseload (1-14 individuals) increased client satisfaction scores (Est. = 6.94, Std. Error = 1.21, $t$ value = 5.72, $p$ value = <.0001).

**Agency Characteristics**

The fifth model examined the effect of fixed agency characteristics as described in Study 1 (agency size, years providing services, and location). This model (Adj. $R^2 = .0012$, Model F value = 14.60) did not show that any fixed agency characteristics had a statistically significant effect on client satisfaction scores. The sixth model (Adj. $R^2 = .0478$, Model F value = 5.90) adjusted for differences in agency behavior related to the collection and use of client satisfaction data. If agencies sought client input on important changes “always” compared to “sometimes,” there was a positive effect on client satisfaction (Estimate = 11.96 Standard Error = 2.90, $p$ value = .0008). If agencies indicated that client satisfaction was essential to the evaluation of services (compared to “useful but not essential”), there was a positive adjustment (Est. = 5.88, Std. Error = 2.18, $p$ value = .016) to client satisfaction scores. If agencies indicated
that they wanted additional guidance on how to collect and use client satisfaction data, there was a positive adjustment to client satisfaction scores (Est. = 5.17, Std. Error= 1.43, p value = .002). Agency indicating they were not involved in any online activities (via E-mail, Facebook, the agency’s website, Twitter, a blog, YouTube, Google+ or LinkedIn) with clients was associated with higher client satisfaction scores (Est. = 6.46, Std. Error= 2.57, p value = .023).

Table 23 shows the results of a final model. In the final model the adjusted $R^2$ indicated that the variables included in the model explained 40% of the variation in client satisfaction scores. The two variables with the highest level of significance and the highest β coefficients for overall satisfaction were caseload size and clients’ perception of being asked about services. Those clients who were on caseloads of less than 15 individuals were more satisfied than clients who were on larger caseloads of 25 or more clients. Clients who perceived that staff rarely or never asked how clients feel about services were less satisfied than clients who perceived that staff asked them about services sometimes. Other variables that were positively associated with client satisfaction included perceiving that all mental health services they had received were helpful, being female, and being at an agency where client input is sought on all major changes. Variables that were negatively associated with client satisfaction included not having a strong need to please others, feelings of lack of control, and being at an agency where administrators considered client satisfaction to not be essential to service evaluation.
### Overall Client Satisfaction and the Eight Questions that Measure Satisfaction (Scale 1-4)

<table>
<thead>
<tr>
<th>Question</th>
<th>Question</th>
<th>Question</th>
<th>Question</th>
<th>Question</th>
<th>Question</th>
<th>Question</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>Wants</td>
<td>Needs</td>
<td>Recommend</td>
<td>Help</td>
<td>Problems</td>
<td>Satisfied</td>
<td>Repeat</td>
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<td>187.18</td>
<td>41992.00</td>
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</table>

#### Client Variables

- **Important to please others: Depends vs. very important**
  - .11*  
  - .39**  
  - .12*

- **Important to please others: Not important vs. Very important**
  - .55*  
  - 1.70****

- **Staff ask about feelings: never vs. sometimes**
  - -.43**  
  - -.43**  
  - -.37*  
  - -.75**  
  - -.65**  
  - -.36*  
  - -.50*

- **Staff ask about feelings: rarely vs. sometimes**
  - -.24****  
  - -.39****  
  - -.19*  
  - -.34***  
  - -.30**  
  - -.20*

- **Staff ask about feelings: regularly vs. sometimes**
  - .19***  
  - .28**  
  - .41*  
  - .26***  
  - .15*

- **Services over lifetime: All vs. some were helpful**
  - .30**  
  - .38****  
  - .33*  
  - .40**  
  - .35**  
  - .41*

- **Services over lifetime: Most vs. some were helpful**
  - .18*

- **Services over lifetime: None vs. some were helpful**
  - .79*  
  - .86****

- **Gender: female vs. male**
  - .18*  
  - .31**  
  - .13*  
  - .25*  
  - .21**

- **In control of thoughts: Not at all vs. For the most part**
  - -.17**  
  - -.34*  
  - -.40**  
  - -.26**

- **In control of thoughts: Yes, Definitely vs. For the most part**
  - .23****  
  - .17*  
  - .25*

---

Table 23. Standardized Regression Beta Coefficients Showing Significant Relationships between Client Satisfaction and Client-Related and Agency-Related Factors
Another group of regression analyses (see Table 24) was completed in order to evaluate whether any factors influenced the difference between clients and case managers on their perceptions of client satisfaction. The first unadjusted model showed that for every percentage point increase in mean case manager scores, client scores rose by almost four percent (4%).
Table 24. Regression Models for the Difference in Client and Case Manager Scores

The final set of analyses involved a review of the alignment or level of agreement between clients’ ratings of their own satisfaction and case managers’ ratings of client satisfaction. This analysis was completed graphically. The expectation was that as client satisfaction scores increased the gap between clients’ and case managers’ perceptions would decrease. Similarly, as client satisfaction scores decreased, it was expected that there would be more variation in the case manager scores compared to client scores. Figures 10 and 11 provide two ways of examining the level of agreement between client and case manager scores. Figure
10 shows client satisfaction scores in ascending order for all 18 agencies charted against actual case manager scores and expected case manager scores. Expected case manager scores were constructed using the range of estimates of the difference between client and case manager scores for the significant models in Table 23 (2.41% - 6.64%). The line representing expected case manager scores is just one of many possibilities and is included here as a demonstration of how the relationship between client and case managers scores would exist if Hypothesis 2 were correct. The line representing actual case manager scores does not show the expected pattern between case manager and client scores. There is as likely to be high variations between clients and case managers when clients are at the highest level of satisfaction as there are when clients are in the middle range of satisfaction. In fact, the smallest differences between client and case manager scores tend to be on the lower end of the client satisfaction continuum. Figure 11 more clearly shows the change in difference between client and case manager satisfaction scores by charting client satisfaction scores in descending order against the absolute difference between client and case manager scores. Overall, the smallest variations between clients and case managers exist when clients are lower on the satisfaction continuum rather than higher.
Figure 10. Comparison of Mean Case Manager Perception of Client Satisfaction Scores to the Mean Ordered Client Satisfaction Scores by Agency.

![Graph comparing Case Manager perception to actual client satisfaction scores by agency](chart.png)

Figure 11. Absolute Difference in Client and Case Manager Scores of Client Satisfaction

<table>
<thead>
<tr>
<th>Client Satisfaction</th>
<th>Absolute Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>93.51%</td>
<td>10.07%</td>
</tr>
<tr>
<td>90.63%</td>
<td>7.90%</td>
</tr>
<tr>
<td>90.18%</td>
<td>8.93%</td>
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<td>88.71%</td>
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</tr>
<tr>
<td>76.16%</td>
<td>0.03%</td>
</tr>
</tbody>
</table>
Summary of Findings

The first research aim was to gather an estimate of client satisfaction at CMHAs in Ohio. It was anticipated that the rate of satisfaction would exceed 80%. The mean client satisfaction score (83.9%) was above the cut point (80%) set based on many studies on client satisfaction. This study found similar estimates of client satisfaction when compared to previous research on client satisfaction with mental health services. In the final model, the personal characteristics that were not statistically associated with client satisfaction were age, race, relationship status, chronic physical disease status, and education. However, gender was found to be significant. The research literature varies on how much these characteristics are associated with client satisfaction. Other client experience or personal traits were found to be associated with client satisfaction. These included feelings about whether staff sought input from clients about services, and perceptions about how helpful mental health services had been throughout the clients’ lifetime of service use.

The second research question asked about the level of alignment between clients and case managers on their perceptions of client satisfaction. It was expected that progressively closer alignment between the two perceptions would be concurrent with higher client satisfaction scores. When client satisfaction scores were compared to scores of how satisfied case managers perceived clients to be, it was found the clients tend to be more satisfied than case managers perceived them to be. When adjusted for demographic characteristics or the social desirability perspectives of both groups, the difference between client and case manager scores increased. When adjusted for agency characteristics (years providing services, size, location), case manager pay, caseload size, and per capita tax revenue, the difference between client and case manager scores decreased. The alignment between client and case manager
scores did not progressively increase as client satisfaction scores increased. In fact, alignment between client and case manager satisfaction scores were found for clients that were either dissatisfied, indifferent, mildly satisfied.

**DISCUSSION**

**Agency and Respondent Characteristics and Perspectives**

Ten percent (10%) of the target population of agencies (N=196) that provided mental health services, including case management, to adults with mental illness agreed to participate in this research. When compared to agencies that were eligible for Study 2 but only agreed to participate in Study 1, agencies in Study 2 were similar in years providing mental health services and similar geographic distribution. Agencies participating in Study 2 were also similar in geographic distribution to the target population. There were differences between participating and non-participating agencies based on agency size. Previous literature has suggested there are significant difference in the behavior of large versus small organizations, but Study 1 showed there were no differences related to agency behavior on the collection and use of client satisfaction data. The absence of a broad set of traits on which responding and non-responding agencies can be compared makes it difficult to determine whether there are differences between agencies that may influence the data gathered in this study. Caution should be used when generalizing the data found in this study to all agencies in Ohio.

Client demographics showed clients to be primarily male (52%), 30-49 years old (42%), white (60%), educated at the secondary education level (63%), single (59%), and experiencing at least one chronic medical condition (53%). Although clients were not recruited using probability
modelling which allowed each client an equal chance to selection, the client demographics collected in this study showed clients were similar in racial distribution to those collected using the MHSIP. However, clients were dissimilar gender, and race from the general population of Ohio. In addition to questions on satisfaction and demographics, clients were asked a series of questions about their interaction with mental health services, as well as about their mental health status. The majority of clients 72% indicated they had used services at the participating agency for six or more months. This question, like many others on the survey, included an “other” option where clients could write in responses. Sixty-seven (67) clients wrote in responses that ranged from 2 years to 25 years. This suggested that the answer categories provided on the survey were inappropriate and should have been listed in years rather than in months. This data showed that approximately one fifth of client respondents obtained services from the same provider for two years or more. Almost 60% of clients indicated they had been in receipt of mental health services for over five years during their lifetime, with 41% indicating they had received mental health services for 10 or more years. Over half (57%) of clients indicated that of all the mental health services they had used over their lifetime, most or all were helpful. However, 41% of clients indicated that there was variation in the helpfulness of the services that they had received over their lifetime. Suggestions that clients tend to always report being satisfied are refuted by these answers. When asked to compare services or providers, many clients are able to differentiate the ratings they would provide to those services compared to other services.
Client Satisfaction

The first research question asked how satisfied are clients with the services provided at CMHAs in Ohio. The hypothesis was that clients in Ohio would indicate satisfaction scores of 80% or above with services received from CMHAs. The data showed the hypothesis to be correct. The mean aggregate satisfaction score across the 18 participating agencies was almost 84%. When looked at individually, the range of satisfaction scores across agencies was 73.8% - 93.5%. All but two of the agencies had mean agency-level scores that were above 80%. Since the research literature shows such a tendency towards high satisfaction scores, agencies may consider examining their satisfaction data with the idea that 80% is the minimum level of satisfaction they should achieve. Referring back to the discrepancy theories of satisfaction mentioned in Chapter 1, agencies would need to pay particular attention to individuals who scored below 80% in an effort to understand what issues contribute to dissatisfaction.

More detailed analysis aimed to understand what factors (agency, case manager, or client-related) were associated with client satisfaction scores. The regression analysis included a model with an adjusted $R^2$ of .40. The $R^2$ suggests that 40% of the variation in client satisfaction scores can be accounted for by the variables included in the model. It was expected that in this study like in many other studies on client satisfaction with medical or mental health care that demographic characteristics would be more significant. For instance, Greenberg and Rosenheck (2004) in a study of 17,130 veterans found a positive association between age, income level and satisfaction with Veteran’s Administration mental health services [231]. In another study of satisfaction with the Veteran’s Health Administration, Blacks were found to be more satisfied than whites [81]. Other studies have found support for associations between age, sex, race, or
education, and client satisfaction [232, 233]. Health status has been found in some studies to affect satisfaction. Individuals with poorer mental health status [84, 85, 234], or poorer physical health [194] were less satisfied with care. At the same time, several studies have found no relationship between gender, socio-economic status, age, race, education and satisfaction [83, 233, 235, 236]. It is not surprising then that in this study that sex (female sex was positively associated with satisfaction) was found to be statistically significant. It was also found that individuals who did not feel in control of their thoughts had lower satisfaction. This finding is consistent with studies that find that poorer mental health status is associated with lower satisfaction rates.

The main finding from the final model of factors associated with client satisfaction is that there is an association between client perspective, agency behavior, and client satisfaction scores. Clients who had a positive outlook on all of the mental health services they had received and who felt that staff engaged them about services were more satisfied. At the same time agency factors, such as prioritizing client feedback and having smaller caseload sizes were positively associated with client satisfaction. This finding is important for two reasons. The first is that almost all of the significant covariates in the model are modifiable. Three variables, gender, the desire to please others, and client perception of previous services may not lend themselves to change. However, others are changeable. Clients’ perceptions of whether staff value clients’ feedback, perceptions of feeling in control of thoughts and behavior, agencies’ interest in guidance on client satisfaction data, agency perception of the importance of client satisfaction data, and caseload size can all be changed. For instance, agencies may choose to invest resources into changing clients’ perceptions of being considered an important partner in the care process. Agencies can also choose policies that show that obtaining and using client
feedback is integral to the functioning of the agency. The second reason is that it is important that agencies adjust for those variables that are non-modifiable (such as gender) when examining client satisfaction data.

**Relationship between Client and Case Manager Perceptions of Satisfaction**

In aggregate the mean case manager score was lower than the mean client score (80.15% versus 83.98%). This finding suggests that clients tend to believe themselves to be more satisfied with services than case managers perceive them to be. The range of difference between client and case manager scores at the 18 agencies was between .03% and 12.08%. In four agencies case managers rated clients to be more satisfied than the clients’ own ratings of satisfaction. An unadjusted regression model of the overall satisfaction score showed that the difference was statistically significant and for each percentage point increases in case manager ratings, client satisfaction was actually 3.92% higher. The actual β coefficient is small when compared to the range of scores within the client group and within the case manager group. Agency level analyses suggests that the difference was only statistically significant at one agency. By comparison, the range in satisfaction scores within the case manager group (8.5%) and the client group (15%) was far greater than the aggregate difference between client and case managers. In fact, with agencies 5, 7, 12 the difference in means is less than one percent.

Various factors were included as controls in separate regression models on association between client and case manager satisfaction scores. The adjustment variable with the highest coefficient and lowest p value was social desirability. When perspectives on social desirability are held constant, the difference between client and case manager ratings of client satisfaction actually increases. According to the literature, social desirability bias is a regular and significant
source of bias in research and marketing surveys [223]. When adjusted for social desirability and demographics the difference between client and case manager scores increased, but agency characteristics, sampling strata and case manager pay and caseload size decreased the difference.

The second research question was “to what extent do clients and case managers agree on levels of client satisfaction? “ The hypothesis for this research question was that client satisfaction would tend to be higher when case manager and client perceptions of client satisfaction are aligned, and client satisfaction would be lower when case managers and client perceptions of client satisfaction were not aligned. The data proved this hypothesis incorrect. The differences between case manager and client scores did not decrease as client scores increased. In fact, the lowest differences between client and case manager perceptions of client satisfaction tended to be for clients who reported being dissatisfied or mildly satisfied.

The gap between client and case manager perceptions of client satisfaction for progressively more satisfied clients is possibly due to the differences in expectations about services. When compared to clients, case managers in this study are less concerned about physical and mental health, more romantically involved, have a lower rate of chronic illness, are more educated, and 100% employed. Taken together, these differences suggest lives of more independence and more varied life roles for case managers than for clients. The differences mean that case managers enjoy the personal experience of having achieved many of the goals to which clients aspire. In addition, a part of the role of a case manager involves promoting the recovery of individuals with mental illness. The premise of recovery is that services should help clients “improve health and wellness, live self-directed lives, and strive to reach their full potential.” Case managers know whether agencies are helping clients progress towards
recovery that is meaningful to each client. When case manager personal characteristics, life experiences, and job function are taken together, it becomes likely that case managers may expect more out of the services clients receive than clients do, and that case managers may have different opinions than clients about whether services are supporting recovery. Question 5 on the satisfaction questionnaire asks whether clients are satisfied with the help they have received at the agency. The case manager questionnaire asks case managers whether case managers perceive clients to be satisfied with the help client have received at the agency. The results show that clients are 7 times more likely to indicate that they are very satisfied with the help received than case managers believe them to be (see Table 19). Furthermore, the majority (71%) of case managers (see Table 18) believed services had only been somewhat helpful in supporting clients’ recovery.

Clients’ experience of services include high variation in service availability and quality, stigma from the broader community, the possibility of limited or fluctuating independence, and interactions that may make them feel like they are unimportant. If clients repeatedly have negative service experiences, they may develop low expectations and be more easily satisfied with services that may not be high quality but that may be better than previous services. In addition, clients may come to value respect and a feeling of being partners in their care more than other facets of quality care. In support of this explanation is the fact that one of the single most highly significant factors associated with lower client satisfaction scores was clients’ perception of never being asked by staff about how they (the clients) feel about services. Some of the responses clients provided during the interactive survey process further support this explanation. As a part of the interactive survey process clients were asked, “What benefits will you get for taking this survey?” Every informed consent must clearly indicate to prospective
research participants whether there are any tangible benefits (e.g. payment, access to a new medication) to the individual for participating in a study. As a part of the informed consent it was indicated that this study provided no tangible benefits to respondents. However, during the interactive consenting process, many clients indicated that the survey provided them with the benefit of sharing their perspective and being listened to, an opportunity they seem to value.

The expectation that the mental health services system should have recovery as its primary goal was put forward by the Substance Abuse and Mental Health Services Administration (SAMHSA) in 2012 [25]. However, acceptance of recovery, an idea Ragins and Pollack (2013) describes as revolutionary, has been slow to proliferate, even among clients [237-239]. It is possible that if more clients expect that services should help them make measurable progress towards their own recovery, not only would they be more critical of services, but also the gap between clients’ and case managers’ perceptions for satisfied clients may disappear.

Other studies that discovered differences in client and case manager perceptions suggest similar explanations for variations between clients and case managers. Widlak, Greenely, and Mckee (1992) attribute differences in clients’ and case managers’ perceptions of clients’ level of independent functioning to social desirability bias on the part of clients [240]. Another study suggests the differences in perceptions may be due to dissimilarities in understanding of what constitutes service quality; namely client’s lack of understanding of quality services [219]. A third study suggests that differences in client and case manager perceptions may be due to the case manager not fully comprehending the perspective of the client [220].
Although the trend in agreement between clients and case managers is not what was expected and suggests some differences in perspectives, the reality is that the estimate of difference whether in an unadjusted or adjusted model is between two and six percentage points. Unfortunately, there were insufficient observation units to conduct agency level comparisons but it would be interesting to understand what factors differentiates those agencies and case managers with the smallest differences from those agencies and case managers with the greatest differences. In addition, there is insufficient data in the research literature to suggest an appropriate amount of difference between clients and case managers. Regardless, it seems important that any effort to increase the level of shared understanding must be addressed with both parties. Clients need to be inculcated about service quality and what outcomes they have a right to expect from services [219]. At the same time, case managers must be vigilant against assuming that they understand the perspectives of clients, and instead regularly engage the client in order to understand the client’s perspective [194, 197].

Limitations

There are limitations that must be considered when interpreting the results of this study. Specifically weaknesses or gaps in methodology may limit the amount to which the study results may be generalizable to the total population of clients, case managers, and CMHAs in Ohio. In addition to the low response rate of agencies, and the low proportion of clients surveyed, there was an unequal chance of selection at the clients and case manager-level. First, some clients and case managers may work for or use services at multiple agencies resulting in an increased probability of selection of those individuals. Second, there was not a random
sampling of clients. Research data was gathered on a single day at each agency on a date chosen by the agency administrator. Only the clients who happened to be at the agency on those days had the option of being selected into the study. Third, client-level recruitment was completed in a passive manner (a recruitment poster was posted but clients were not approached to request their participation). Passive recruitment increases the possibility that only those clients who are outgoing and able to read a poster would approach to inquire about the survey. In addition many of the larger agencies had multiple sites, some of which existed in very different environments, but only one agency location was visited. In four of the agencies, an in-person presentation was required prior to case manager recruitment, while in others case managers received the recruitment e-mail online. The proportion of CMs who participated in the four agencies was 26.7%, while the proportion of CMs who took the survey in the other agencies was 41.6%. Variations in survey methodology may have implications for the results from that data.

Another source of bias comes from the lack of matching between case managers and clients. Matching case managers and clients would have allowed comparisons that are more precise between the two groups, but would have required that agencies incur more burden for this research and share personal information about staff and clients. It was expected that including such a requirement would decrease agency, client, and case manager participation rates. Instead, case managers were asked to comment broadly about all clients receiving services from the agency. This may have been difficult for case managers to do considering as they mostly interact with clients on their caseload, and may only have perfunctory information on other clients at the agency. For instance, in an informal discussion prior to the administration of the survey, several members of an intensive case management team indicated
they considered the clients they worked with directly to be high satisfied, but had mixed views about the level of satisfaction of clients who were not on their teams.

Some may question the appropriateness of asking case managers to comment on the level of client satisfaction within their agencies. Perception of care measures are already fraught with issues related to their subjectivity. To ask someone to comment on the perception of someone else introduces additional sources of bias. Capturing case manager perceptions of client satisfaction may result in response bias. If case managers perceive that satisfaction scores are an evaluation of the services they provide, there might be a tendency to provide artificially higher ratings. In this scenario, case managers would be more likely to rate satisfaction as high because they are in effect rating themselves. While this may be the case in some situations, overall, case managers are responsible for connecting clients with and coordinating a variety of services within a specific agency and from the broader service community. Often because of a waiting list and scarce resources or difficulty in meeting eligibility requirements, a case manager is unable to connect a client with a service. In their roles as coordinators and advocates, case managers must understand the distinction between overall service satisfaction and satisfaction with case management services.

There is an unknown amount of measurement error in this study. Measurement error is generated when questionnaires do not capture the information that they are intended to capture. The CSQ has been tested widely for reliability and validity however; the case manager questionnaire has not been tested for reliability or validity. The survey was created for the purposes of this research.
CHAPTER 4: THE IMPACT OF FUNDING ON CLIENT SATISFACTION AT COMMUNITY-BASED MENTAL HEALTH AGENCIES IN OHIO.

Introduction

This research will investigate how funding at community-based mental health agencies (CMHAs) in Ohio is related to client satisfaction scores, one of the measures of service quality. This study will contribute to the literature by expanding knowledge about the impact of funding on mental health services. Funding and costs related to mental health care are central components of the discussions on how to improve mental health services in the United States. Based on data from 2002, the National Institute of Mental Health (NIMH) estimates that direct treatment and indirect costs associated with the most serious mental illnesses were more than $300 billion a year [241]. Mental health disorders are the third most costly medical condition and the most costly condition in terms of years of healthy life lost [242-244]. Yet, mental health services in the United States remain severely underfunded [245-247]. In 2002, the United States dedicated $135 billion dollars for treatment of behavioral health disorders, which represented less than six percent (6%) of all spending on health care [246, 248]. The adequacy of funding for mental health services has consistently been a key policy issue at the federal and state levels of government [249, 250]. Fragmented funding is blamed for poor accountability and continuity of services [245]. Insufficient funding is blamed for inferior outcomes and inappropriate use of other public resources, such as prisons and hospital emergency departments [251]. A significant increase of resources is necessary to address the mental health treatment and
support needs of Americans who live with mental health disorders [246, 252]. Despite the growing need, it is projected that mental health funding as a portion of total health dollars will continue to decrease [34]. Furthermore, whenever the economy has experienced a downturn and dollars need to be trimmed from public services, behavioral health programs, despite being the smallest part of the public health budget, often suffer the most brutal cuts [246, 253-255].

Recent Medicaid expansion through the Accountable Care Act has allowed thousands of Ohioans to access mental health and substance abuse treatment services for the first time [256]. In addition, the current federal administration has committed $100 million dollars to improving mental health care access, especially in rural areas [257]. Even so, a great need remains [256, 258, 259]. It is unlikely that as a society we will commit the appropriate resources needed to address behavioral health disorders [34, 252]. In an environment of constant scarcity of resources, policy makers, community providers, and funders must look more critically at what each mental health dollar purchases. Increasingly, it is required of providers in the mental health field that all of their decisions be driven by data. Additional studies are needed to provide the data with which regulators, funders, and providers may make decisions [107, 260, 261]. Mental health dollars must be allocated to services that provide the best outcomes for clients [253, 254, 262].

The impact of funding on mental health services has been the subject of several studies and policy papers. Lo Sasso and Byck (2010) and Windle et al, (1987) have shown that mental health agencies translate funding increases directly into providing more services [214, 215]. Other studies, found that variations in funding had no impact on performance indicators [263, 264]. Existing studies of the impact of funding on the delivery and outcomes of mental health services are limited in several ways [265]. Some studies have evaluated the impact of funding
only on state-level performance indicators or at state run facilities. To this point, Hendryx (2008) has observed that evidence of the impact of funding, may not show up at the state level, but rather may exist only at the local level of government or even at the agency level [264]. Studies that focus primarily on state-level allocations ignore the regions in which funding is also disbursed from the local (e.g. County) level. In addition, current studies tend not to use client satisfaction as a dependent variable. Because mental health has both objective and subjective elements, clients’ satisfaction with services is an important part of the evaluation of services [51, 53] and should be included more often in research. Only two of the limited number of studies, which have evaluated the association between funding and mental health service outcomes, have used client perceptions as a dependent variable. One study used client ratings of service access, quality, and outcomes but found no relationship to state level funding [264]. The second study looked at the relationship between several performance measures including overall client satisfaction across three government-funded facilities but found no relationship. Based on current literature searches, this study is unique in its combination of agency-level funding as the independent variables and client satisfaction as the only outcome variable.

**Study Aims**

The study aims to investigate the relationships between the variables listed in Figure 12 by addressing the following two questions and the associated hypotheses. Question 1: To what extent is funding associated client satisfaction scores? Hypothesis 1a states that on average, client satisfaction scores would increase as average expenditures per client and average staff salaries increase. In support of Hypothesis 1a, some studies have also shown evidence of a positive relationship between increased mental health funding and agency performance [266],
or positive client outcomes [214, 267]. As mentioned above as the level of overall funding increases, regardless of source, service access also increases [215]. Agencies that are able to dedicate more dollars per client may be more likely to fill the wants and needs of the client and achieve increased client satisfaction. A similar rationale suggests that agencies that pay staff more may be able to hire employees that are better trained to meet the needs of clients.

The second hypothesis (Hypothesis 1b) is that on average, client satisfaction scores would increase as the proportion of funding from public insurance payments, as compared to government grants, increases. Hypothesis 1b is based on the trend of increasing Medicaid payments for mental health services over the last decade [34, 268]. Some argue that compared to private insurance, services paid for through Medicaid have more variety and are more generous, even if reimbursement rates are sometimes lower [255, 269]. In addition, state and local government funds are often used for targeted services such as employment, housing, and evidence-based practices or targeted sub-populations, such as offenders with mental illness [256, 270].

The third hypothesis related to Question 1, Hypothesis 1c, is that on average, client satisfaction scores will be higher for agencies that reflect a positive change in revenue across two years. Hypothesis 1c is based on the assumption that an agency’s ability to maintain positive revenue growth is a symbol of financial stability and that those agencies that are financially stable will perform positively in other areas when compared to agencies that are less financially stable. This hypothesis is supported by the organizational literature, which suggests stability is a precursor for organizational innovation[271]. Financial stability may be interpreted as one element of overall agency stability [272].
The second question answered by this study is, to what extent do agency-specific and other factors mediate or moderate the association between funding and client satisfaction?

Hypothesis 2 supposes that there are important agency specific and other co-factors that influence the relationship between funding and client satisfaction. This hypothesis assumes that higher staff pay and higher expenditures on clients will only partially explain variations in client satisfaction. Hypothesis 2 is supported by the existing literature, which indicates that organizations operate through complex mechanisms. The System Resource Approach for evaluating organizations suggests that funding alone is insufficient to predict effectiveness. As described in Chapter 1, the Systems Resource Approach indicates that organizations should be evaluated on their ability to acquire resources from the environment, transform them, and then generate outputs (services for clients) [273]. The Approach suggests that processes within the organization, which are unique to every organization, may also affect the ability of the organization to provide effective services [274-277].
Methods

Study 3 employs a cross-sectional research design with both descriptive and analytical components. The analytical component of the study involves tests for significant associations between agency funding and the level of client satisfaction. The research settings are CMHAs in Ohio. Eligibility criteria for CMHA participation include certification by the Ohio Department of Mental Health and Addiction Services (OhioMHAS), provision of case management services (Community Psychiatric Supportive Treatment (CPST)), and accreditation by one of three accrediting agencies: the Commission on Accreditation of Rehabilitation Facilities (CARF), the
There were three groups of participants necessary for the completion of this study. From each CMHA, an administrator, the agency's Executive Director, or a designee was required to provide information about the agency. Administrators also provided permission to recruit case managers and adult clients. Each case manager and client voluntarily consented to participate in the research project. Adult clients receiving mental health services at each CMHA were surveyed in order to have client satisfaction data for comparison with case manager data. Case managers were the third group of participants. Case managers answered a survey similar to the client survey. Only those agencies that participated in both Studies 1 and 2 were eligible for Study 3, because the data collected in Studies 1 and 2 were necessary for the completion of Study 3. Study 2 contains a detailed description of the client and case manager recruitment processes, as well as steps taken to ensure the research was considerate of the rights of human participants.

**Data Source and Variables**

There are several sources of data for this study. The first data source was the CMHA administrator survey administered as a part of Study 1. The CMHA administrator survey provided information such as the percentage of funding received from various funding sources (e.g. Medicaid, Grants, Local Board, Private Insurance, State dollars), length of time providing mental health services, number of adult clients with mental illness served, the number of case managers, case manager rate of pay, and information about each agency’s views on client satisfaction data. With the exception of the number of case managers, and the percentage of funding from each funding source, the other questions on the CMHA administrator survey had
fixed answer choices resulting in categorical data. Fixed answer choices decreases the burden of the survey on the respondents [122]. However, with fixed answer choices a level of precision is lost during data analysis [122]. The second data source was the survey administered to clients and case managers in Study 2. The client survey provided the mean client satisfaction score as well as client socio-demographic characteristics. The case manager survey provided information about case managers’ perception of client satisfaction as well as the level of case manager education, which was used as proxy for case manager credentials. The other important source of agency funding data was the agency Internal Revenue Service Form 990 Return of Organizations Exempt from Income Tax (Form 990), the tax returned filed with the Internal Revenue service for all 501(c3) not for profit organizations. Specifically, funding information about the CMHAs was obtained from the 2013-filing year, calendar year 2012. Unfortunately, there is a lag in the availability of Form 990s, so they were not available for 2014, the year in which the majority of data collection was completed.

Funding is the primary predictor variable in this study. In studies that have reviewed the impact of funding on mental health services, funding has been measured in a variety of ways. In his 2008 study of the effect of state mental health funding on state level performance, Hendryx used state-expenditures per client and per capita as his measures [264]. Jerrell and Jerrell (1986) used total state funding, while Lo Sasso and Byck (2010) used funding source, i.e. federal, state/local, and private/foundation [214, 266]. This study will employ similar measures as in previous research. However, instead of state-level expenditures per client, agency-level expenditures per client were used, because of the interest in focusing on CMHA effective functioning. Average staff salary was included as an added measure of agency-level expenditures. These two measures will be two of the primary independent variables. As
mentioned above, the Systems Resource Approach indicates that evaluation of organizations must take into consideration how resources are transformed in order to create the output. Agencies have many other options for allocating funding, including physical plant, information technology, occupancy costs, and office expenses. However, allocations to staff salary and expenditures per client are arguably the allocation choices most clearly related to service delivery. Expenditures per client were calculated by dividing the total program service revenue (page 1 line 9 of the Form 990) by the number of clients served by an agency. The number of clients served was obtained from the Form 990, from the agency’s annual report, or the agency’s website where available. Where this information was not available, an estimate of clients served was used from the agency administrator survey from Study 1. The program service revenue reported by the agency is the combination of the government (including the state and local county board) grants, program service fees from insurance, and client self-payments. Average staff compensation was calculated by dividing the total compensation line item on the Form 990 (page 1 line 15) by the number of paid employees (page 1 line 5).

The other independent variables related to funding include the percentage of funding from various funding sources. This method is similar to the method employed by Lo Sasso and Byck (2010) [214]. The proportion of funding from each funding source was provided by CMHA administrators in the survey administered as a part of Study 1. Agency administrators were asked to indicate what proportion of their funding up to 100% was from the local board, Medicaid, the State government, private insurance, and other sources. The variables related to per client expenditures, and average staff compensation reflect decisions made from within the organization as to how to allocate funds. The variables related to the proportion of funding from all funding sources are important because they reflect funding decisions that are made
from outside of the organization by local and state government and over which the organization has little control. Examining the external source of funding is important because due to varying issues of sustainability, services covered, and discretion permitted to the agency, the source of funding may ultimately affect the quality of services. The proportion of funding from government grants compared to insurance payments was examined, as well as the proportion of funding from each source.

A secondary set of independent cofactors include those agency or staffing characteristics that might have a significant effect on the relationship between funding and client satisfaction. In addition, client socio-demographic characteristics and client perspectives were included as cofactors if they proved significant in Study 2. These cofactors contribute by intervening between the independent variables and the dependent variable (client satisfaction), or by having a separate effect on their own. The cofactors were chosen because it is possible that they lie on the pathway of a relationship between funding and client satisfaction (mediators), or they influence the direction and/or magnitude of the association between funding and client satisfaction (moderators).

Mediators are intermediaries in the relationship between funding and client satisfaction [278]. In terms of a causal pathway, a predictor acts on a mediator, which in turn acts on the dependent variable. For instance, if one accepts the theory that higher degreed clinicians provide more effective services than those with fewer credentials, then the credentials of the case manager may be a mediator in the relationship between funding and client satisfaction. Funding directly impacts the amount an agency can spend on salaries for degreed versus (vs.) non-degreed clinicians, which in turn is associated with client satisfaction. Moderators influence the intensity and direction of the relationship between the independent and dependent
variable, and represents a special case of an interaction effect [278]. Moderators are generally fixed attributes (e.g., sex, race), stable traits (e.g., personality type), or relatively non-modifiable circumstances (e.g., state of residence) [278]. An example of a possible moderator to funding is agency size. While there is no reason to assume that agency size is automatically related to client satisfaction, it is nevertheless possible that larger agencies may be able to make use of economies of scale and provide more services with relatively less funding. Agency size (small, medium, or large) may vary the intensity of the relationship between funding and client satisfaction.

The co-factors of interest include agency years providing services, size, location in a metropolitan area, agency affiliation status, use of volunteers, number of services provided, caseload size, case manager pay, case manager credentials, and per capita tax revenue of the county (See Table 12). There is some research support for the co-factors chosen for this study. For instance, urban location has been shown in the past to affect service quality and to be associated with comparatively greater funding resources [279]. Clerkin and Grønberj (2007) report that non-profit agencies that use volunteers may achieve economies of scale, by using unpaid human capital to complete important tasks [280]. It has also been found that having interagency affiliations improves an organizations ability to innovate and be effective [251].

Socio-demographic variables related to clients were included either as possible moderators or confounders in the relationship between funding and client satisfaction. Confounders, like mediators and moderators, are third variables that have significant associations with both the independent and dependent variables [281, 282]. However, confounders are conceptually external to the relationship pathway that one hopes to demonstrate. Possible socio-demographic moderators were selected based on previous
research about client satisfaction with mental health services. Potential moderators from previous studies include race, sex, age, education level, and diagnosis. It is notable that there have been mixed results involving these socio-demographic variables [81, 236, 283].

**Analyses**

For Study 3 there are several levels of analyses performed on the data using univariable, bivariable, and multivariable methods. SAS version 9.4 was used to complete the data analyses. The initial analysis provides summary frequencies and means of the data. As is important for all data where a predictive effect is being researched, graphical methods (histograms and scatter plots), Pearson’s correlation, Chi-square analysis, and simple linear regression were used to review the distribution of the data and to determine whether there are preliminary linear relationships. The most important preliminary test was to check for association between client expenditure and average compensation and other funding variables with client satisfaction respectively using both Pearson’s Correlation and simple linear regression. In the correlation matrix and simple linear regression sources of funding were grouped as government dollars (State dollars + ADAMH board) compared to insurance dollars (Medicaid + private insurance) and also analyzed as individual funding sources (Medicaid, ADAMH Board, State, Grants, Private Insurance, and Other Sources). A correlation matrix and a co-linearity test helped to identify relationships between the independent variables. Unfortunately, PROC SURVEYCORR is not available in SAS 9.4 version so the correlation was completed without the appropriate survey weights. A further test for collinearity among the independent variables was completed using PROC REG with the COLLIN option. PROC REG does not account for design effects, or weights. Since a statistic was not being generated for this test, it was unnecessary to adjust for sampling effects. Collinearity suggests redundancy in independent variables, possible inflation of variance
estimates, and decreased precision of estimates [150, 281, 284]. One of the suggestions for dealing with collinearity is to remove one of the collinear variables from a regression equation. The variables that showed collinearity were inserted into the model during the model building process; the variable that was not significant was removed.

The analyses also included a test for suspected mediators and moderators of the association between funding and client satisfaction. The test for mediators described by Baron and Kenny (1986) was used to ascertain mediation effects [278, 285]. The test requires that there is a significant relationship between the independent variable and the dependent variable. It also requires that there be a significant relationship between the independent variable and the possible mediator. Variables tested as possible mediators included case manager pay, caseload size, expenditures per client, average staff compensation, and case manager education. Race was included as a moderator variable, based on research by Allard and Smith (2014)[269]. They found that the penetration rates of services paid for by Medicaid were lower in areas with high populations of Blacks and Hispanics. The test for moderation involved a test for interaction effects. To test a possible moderator, the independent variable must be significant on its own and then the potential moderator and an interaction term (independent variable * moderator) is introduced into the equation. The moderator variable must change the magnitude of direction of the association of the independent variable with the dependent variable.

The final step in the analysis of the relationship between funding and satisfaction was to identify a predictive model using hierarchical stepwise linear modeling [150, 281]. Attempts to build the best fitting model involve the testing of various variables on the outcome variable with a review of the effects on the adjusted $R^2$, Root Mean Squared Error (RMSE), and the model F value [286, 287]. There is a variety of choices for identifying the best fit model using available
Hierarchical and stepwise model fitting were combined for several reasons. Hierarchical modelling was used because the analysis from Studies 1 and 2, and the research literature helped me to prioritize which variables or sets of variables should be included in the model first.

After funding variables and those variables shown to have a mediation or moderation effect, other variables were added based on their level of significance in Study 2 and the size of the β coefficients. Specifically, variables related to clients’ treatment experience and the clients’ symptoms seemed to have the highest explanatory relationship with client satisfaction. These variables were followed in order of significance by client social desirability, CMHA activity, and perspectives (beliefs on the importance of client input), client socio-demographic (specifically age group, chronic medical disease status, and education level), case manager variables, and finally by agency fixed characteristics (e.g., years providing services, location, and size). In consideration of limiting the ratio of predictor variables included in the model to the sample size, categorical predictors were coded as binary variables. So for instance, instead of having five categories for race, race was instead coded as 1 = white, 0 = non-white. During this process, each predictor within a grouping of predictors was added one at a time and its effect on the model evaluated using the Adjusted R Square, Model F Value, and the RMSE. Predictors that did not improve the model by being statistically significant, increasing the Adjusted R Square, increasing the model F value and lowering RMSE were removed [288].
Results

Summary Descriptive Variables

The results section of Study 2 contains summary descriptive variables comparing CMHAs that decided to participate in all three studies to those that were eligible to participate but only chose to participate in Study 1. Table 25 provides a summary of the continuous predictor variables in Study 3 for participating and non-participating CMHAs. Although there were 32 CMHAs eligible for participation in Study 3, two of the agencies that participated in Study 1 had no available Form 990 reports, nor annual reports from which to gather funding data. The summary shows that agencies in both groups had almost no difference between them when it came to sources of funding, with the exception of percent Medicaid funding. The agencies that participated in all three studies had on average a higher percentage of Medicaid funding than those agencies that only participated in Study 1. As indicated in the results from Study 2, there was a statistically significant difference in size between the two groups of agencies. The agencies that participated in all three studies served more clients on average than the agencies that participated in Study 1 only. The two groups of agencies were also different in the number of services provided. Agencies participating in all three studies provided on average two more services than agencies participating in Study 1 only.

The eighteen agencies that participated in all three studies receive most of their funding (65%) from Medicaid and the local Alcohol Drug and Mental Health Board (24%). The remainder of their funding is from private insurance, state funds, non-government grants, and other payment sources like client direct pay fees, rents, donations, and service contracts. Two agencies also indicated receiving Medicare payments. The mean agency expenditure per client was about $5,000 per agency, but the range spanned $11,000.
Comparisons of Summary Information with Participating and Non Participating Agencies (1)

<table>
<thead>
<tr>
<th>Variable</th>
<th>CMHAs Studies 2 and 3 (N=18)</th>
<th>CMHAs Study 1 (N=12)</th>
<th>T-Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Error</td>
<td>Lower 95% CL for Mean</td>
</tr>
<tr>
<td>Mean Staff Compensation ($)</td>
<td>$33,470</td>
<td>$2,889</td>
<td>$27,375</td>
</tr>
<tr>
<td>Per Client Expenditure ($)</td>
<td>$5,158</td>
<td>$1,284</td>
<td>$2,448</td>
</tr>
<tr>
<td>ADAMH Board (%)</td>
<td>23.92%</td>
<td>4.07%</td>
<td>15.33%</td>
</tr>
<tr>
<td>Grants (%)</td>
<td>1.86%</td>
<td>0.99%</td>
<td>-0.23%</td>
</tr>
<tr>
<td>Private Insurance</td>
<td>4.28%</td>
<td>1.27%</td>
<td>1.60%</td>
</tr>
<tr>
<td>Medicaid (%)</td>
<td>65.04%</td>
<td>4.82%</td>
<td>54.86%</td>
</tr>
<tr>
<td>State Funds (%)</td>
<td>2.83%</td>
<td>0.94%</td>
<td>0.86%</td>
</tr>
<tr>
<td>Other Sources (%)</td>
<td>2.20%</td>
<td>0.89%</td>
<td>0.32%</td>
</tr>
<tr>
<td>Years Agency Opened (yrs)</td>
<td>42</td>
<td>3</td>
<td>35</td>
</tr>
<tr>
<td>Client Count</td>
<td>4724</td>
<td>1502</td>
<td>1554</td>
</tr>
<tr>
<td>Number of Services Provided</td>
<td>8</td>
<td>0.67</td>
<td>7.03</td>
</tr>
</tbody>
</table>

Table 25. Univariable Analyses of Continuous Independent Variables at Participating and Non-participating Agencies

Table 26 contains a summary of the categorical predictors and cofactors that are used in Study 3. Similar to the continuous independent variables, there does not seem to be a difference between the agencies that participated in Study 1 when compared to agencies that participated in all three studies. Even though the agencies from Study 1 only seem comparable to the agencies in all three studies, the similarities may not exist for the larger population of CMHAs. As mentioned in Study 2, all of the participating agencies came from counties that were
in the middle two quartiles in terms of tax revenue per capita ($16 - 17, and $20 - $24 respectively). No agencies from Ohio’s lowest tax revenue level ($12 - $16) or highest ($24 - $44) participated in the studies. As the study is about the impact of funding on client satisfaction, and county wealth may mean significant differences in funding between agencies, the lack of representation of CMHAs from all tax revenue levels may affect the generalizability of the study results.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Agencies in all three studies (N=18)</th>
<th>Agencies in Study 1 only (N=12)</th>
<th>DF</th>
<th>χ² Value</th>
<th>p Value</th>
<th>FDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive net revenue across two years</td>
<td>55.6%</td>
<td>58.3%</td>
<td>1</td>
<td>.0226</td>
<td>.8804</td>
<td>.9999</td>
</tr>
<tr>
<td>Use volunteers</td>
<td>72.2%</td>
<td>75.0%</td>
<td>1</td>
<td>.0284</td>
<td>.9999</td>
<td>.9999</td>
</tr>
<tr>
<td>Member of the Ohio Council of Behavioral Health and Family Services Providers</td>
<td>77.8%</td>
<td>91.7%</td>
<td>1</td>
<td>1</td>
<td>.6221</td>
<td>.9999</td>
</tr>
<tr>
<td>Located in a metropolitan statistical area</td>
<td>66.7%</td>
<td>58.3%</td>
<td>1</td>
<td>.2153</td>
<td>.7116</td>
<td>.9999</td>
</tr>
<tr>
<td>Average caseload size of 1-25 clients</td>
<td>62.5%</td>
<td>90.0%</td>
<td>1</td>
<td>2.365</td>
<td>.1904</td>
<td>.8394</td>
</tr>
<tr>
<td>Case managers paid less than $16 per hour</td>
<td>50.0%</td>
<td>40.0%</td>
<td>1</td>
<td>.2476</td>
<td>.2798</td>
<td>.8394</td>
</tr>
</tbody>
</table>

Table 26. Univariable Analyses of Categorical Independent Variables at Participating and Non-participating Agencies (Categorical)

**Regression Diagnostics**

Several graphical and preliminary tests were conducted in order to understand the relationship of the variables to each other. One of the initial tests was a Pearson’s Correlation matrix (See Table 26). Correlation coefficients of .7 and higher are considered to show a strong association [281]. In the table below both strong and moderate associations are highlighted.
The primary result of the matrix was to show that none of the continuous independent variables had a significant linear association with client satisfaction scores. The secondary result of the matrix showed that funding from the Alcohol, Drug Addiction and Mental Health (ADAMH) Board and funding from Medicaid had a significant negative correlation ($- .79 \rho < .0001$).

Medicaid also had a negative correlation with funding from the State and funding from Grants. Histograms of each variable showed moderate to significant negative skewing.

Attempts at data transformation (arcsine for the client satisfaction proportions and square root for the counts) did not improve the distribution of the data to make them more normal [289]. In addition, there were several outliers for each measurement, which may be considered influential [281]. For instance one agency served less than 100 clients, another served 29,000, while the remaining agencies clustered between 1,000 and 7,000. For dollars expended per client one agency had an outlying value of $83$, another of $11,000$. For number of employees the outlier employed 1,399, while the remaining agencies spanned 45-534 employees.

Unfortunately, the outliers for each variable represented different agencies and could not be removed without rendering the already small sample of N=18 agencies even smaller.
## Pearson’s Correlation Matrix for Funding Variables with correlation coefficients and p-values

<table>
<thead>
<tr>
<th></th>
<th>Client Satisfaction Scores</th>
<th>ADAMH Board</th>
<th>Private Insurance</th>
<th>Medicaid</th>
<th>Gran ts</th>
<th>State</th>
<th>Other Sources</th>
<th>Average Compensation</th>
<th>Per Client Dollars</th>
<th>Agency Years</th>
<th>Number of Clients</th>
<th>Number of Services</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Satisfaction Scores</td>
<td>1.00</td>
<td>-.09</td>
<td>.07</td>
<td>.07</td>
<td>-.07</td>
<td>.04</td>
<td>-.05</td>
<td>-.08</td>
<td>-.01</td>
<td>.00</td>
<td>-.05</td>
<td>.08</td>
<td>.11</td>
</tr>
<tr>
<td>p-value</td>
<td></td>
<td>.20</td>
<td>.18</td>
<td>.18</td>
<td>.46</td>
<td>.36</td>
<td>.15</td>
<td>.79</td>
<td>.98</td>
<td>.33</td>
<td>.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding: ADAMH Board</td>
<td>-.09</td>
<td>1.00</td>
<td>-.33</td>
<td>-.79</td>
<td>.14</td>
<td>.10</td>
<td>-.05</td>
<td>-.37</td>
<td>.44</td>
<td>.40</td>
<td>-.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td>.11</td>
<td>.00</td>
<td>.00</td>
<td>.02</td>
<td>.26</td>
<td>.08</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding: Private Insurance</td>
<td>.07</td>
<td>-.33</td>
<td>1.00</td>
<td>-.17</td>
<td>.35</td>
<td>.39</td>
<td>-.04</td>
<td>-.27</td>
<td>-.34</td>
<td>-.34</td>
<td>-.09</td>
<td>-.23</td>
<td>.20</td>
</tr>
<tr>
<td>p-value</td>
<td>.20</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.36</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.03</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding: Medicaid</td>
<td>.07</td>
<td>-.79</td>
<td>-.17</td>
<td>1.00</td>
<td>-.60</td>
<td>-.53</td>
<td>-.04</td>
<td>-.04</td>
<td>.47</td>
<td>-.10</td>
<td>-.29</td>
<td>.14</td>
<td>.18</td>
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<tr>
<td>p-value</td>
<td>.18</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.38</td>
<td>.38</td>
<td>.00</td>
<td>.02</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding: Grants</td>
<td>-.07</td>
<td>.14</td>
<td>.35</td>
<td>-.60</td>
<td>1.00</td>
<td>.67</td>
<td>-.16</td>
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<td>-.15</td>
<td>-.25</td>
<td>.10</td>
<td>.06</td>
<td>.18</td>
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<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.03</td>
<td>.00</td>
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<td>.02</td>
<td>.00</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding: State</td>
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<td>-.53</td>
<td>.67</td>
<td>1.00</td>
<td>-.30</td>
<td>-.24</td>
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<td>-.01</td>
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<td>.46</td>
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<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.76</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding: Other Sources</td>
<td>-.05</td>
<td>-.05</td>
<td>-.04</td>
<td>-.04</td>
<td>-.16</td>
<td>-.30</td>
<td>1.00</td>
<td>.66</td>
<td>.17</td>
<td>-.36</td>
<td>-.17</td>
<td>-.34</td>
<td>.36</td>
</tr>
<tr>
<td>p-value</td>
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<td>.38</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Compensation</td>
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<td>-.04</td>
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<td>-.21</td>
<td>-.32</td>
<td>.09</td>
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<td>.03</td>
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<td>.00</td>
<td>.00</td>
<td>.04</td>
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<td></td>
</tr>
<tr>
<td>Per Client Dollars</td>
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<td>-.37</td>
<td>-.34</td>
<td>.47</td>
<td>-.15</td>
<td>-.31</td>
<td>.17</td>
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<td>-.35</td>
<td>-.34</td>
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<td>p-value</td>
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<td>.00</td>
<td>.00</td>
<td>.00</td>
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<td>.00</td>
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<td>.00</td>
<td>.00</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Years</td>
<td>.00</td>
<td>.44</td>
<td>-.34</td>
<td>-.10</td>
<td>-.25</td>
<td>-.19</td>
<td>-.36</td>
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<td>-.20</td>
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<td>.22</td>
<td>.25</td>
<td>.00</td>
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<tr>
<td>p-value</td>
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<td>.00</td>
<td>.02</td>
<td>.00</td>
<td>.00</td>
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<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
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<tr>
<td>Number of Clients</td>
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<td>-.29</td>
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<td>-.17</td>
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<td>.10</td>
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<td>.33</td>
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<td>p-value</td>
<td>.33</td>
<td>.00</td>
<td>.03</td>
<td>.00</td>
<td>.02</td>
<td>.76</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td></td>
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<tr>
<td>Number of Services</td>
<td>.08</td>
<td>-.08</td>
<td>-.23</td>
<td>.14</td>
<td>.06</td>
<td>.18</td>
<td>-.34</td>
<td>.09</td>
<td>.34</td>
<td>.25</td>
<td>-.18</td>
<td>1.00</td>
<td>.08</td>
</tr>
<tr>
<td>p-value</td>
<td>.16</td>
<td>.08</td>
<td>.00</td>
<td>.13</td>
<td>.00</td>
<td>.04</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Table 27. Correlation matrix for independent variables
Simple Regressions of Independent Variables and Client Satisfaction Scores

Table 28 includes the results of simple linear regression of individual predictor variables and cofactors on client satisfaction. We see that of the funding variables only two were statistically significant. The remaining independent variables did not have a significant linear relationship with client satisfaction when there were no other variables in the equation. Of the two variables that were significant, an increase by one percent in the proportion of grant funding was associated with a less than third of a percent (0.29%) decrease in client satisfaction scores. The adjusted $R^2$ was a half of a percent, indicating that percentage of grant funding explained relatively little of the variation in client satisfaction scores. The direction of the relationship was interesting. The regression suggested that with each percentage point increase in funding from grants, clients were about a third of a percent less satisfied. When the FDR correction was applied to address the increase in the possibility of falsely significant $p$ values, the significance of grant funding disappeared. However, in the additional analyses I proceeded as if those elements that were significant prior to the FDR correction were indeed significant.

The second of the primary predictor variables that was significant was the case manager compensation. Without controlling for other variables, client satisfaction scores were shown to be slightly more than 5% higher in agencies where case managers were paid over $16 when compared to agencies where they were paid $16 or less. One of the cofactors, caseload size, was also significant. Being on a larger caseload was associated with lower client satisfaction scores.
Results of Simple linear regression of individual predictor and co-factor variables on aggregate mean client (N=338) satisfaction scores (%) from CMHAs (N=18) in the study group.

<table>
<thead>
<tr>
<th>Predictor and Co-factor Variables</th>
<th>Adjusted $R^2$</th>
<th>DF</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-value</th>
<th>p values</th>
<th>FDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of Funding: ADAMH Board</td>
<td>.3514</td>
<td>16</td>
<td>-.0789</td>
<td>.0557</td>
<td>-1.42</td>
<td>.1757</td>
<td>.3514</td>
</tr>
<tr>
<td>Proportion of Funding: Grants</td>
<td>.3337</td>
<td>16</td>
<td>-.2871</td>
<td>.1324</td>
<td>-2.17</td>
<td>.0455*</td>
<td>.3337</td>
</tr>
<tr>
<td>Proportion of Funding: Private Insurance</td>
<td>.4928</td>
<td>16</td>
<td>.2708</td>
<td>.2481</td>
<td>1.09</td>
<td>.2912</td>
<td>.4928</td>
</tr>
<tr>
<td>Proportion of Funding: Medicaid</td>
<td>.5352</td>
<td>16</td>
<td>.0458</td>
<td>.0544</td>
<td>0.84</td>
<td>.4128</td>
<td>.5352</td>
</tr>
<tr>
<td>Proportion of Funding: State</td>
<td>.3514</td>
<td>16</td>
<td>.3580</td>
<td>.2398</td>
<td>1.49</td>
<td>.1550</td>
<td>.3514</td>
</tr>
<tr>
<td>Proportion of Funding: Other Sources</td>
<td>.6176</td>
<td>16</td>
<td>-.1581</td>
<td>.3025</td>
<td>-0.52</td>
<td>.6083</td>
<td>.6176</td>
</tr>
<tr>
<td>Positive net revenue across two years</td>
<td>.5352</td>
<td>16</td>
<td>-1.918</td>
<td>.0093</td>
<td>-0.95</td>
<td>.3540</td>
<td>.5352</td>
</tr>
<tr>
<td>Funding: Government (State + Board)</td>
<td>.4891</td>
<td>16</td>
<td>-.0486</td>
<td>.0534</td>
<td>-.91</td>
<td>.3758</td>
<td>.4891</td>
</tr>
<tr>
<td>Funding: Insurance (Private + Medicaid)</td>
<td>.3514</td>
<td>16</td>
<td>.0631</td>
<td>.0548</td>
<td>1.15</td>
<td>.2668</td>
<td>.3514</td>
</tr>
<tr>
<td>Funding: All Other Sources</td>
<td>.5352</td>
<td>16</td>
<td>-.2725</td>
<td>.1541</td>
<td>-1.77</td>
<td>.0961</td>
<td>.5352</td>
</tr>
<tr>
<td>Average Staff Compensation</td>
<td>.3514</td>
<td>16</td>
<td>.0001</td>
<td>.0001</td>
<td>-1.83</td>
<td>.0859</td>
<td>.3514</td>
</tr>
<tr>
<td>CM pay : &gt;$16 vs. $16 or less</td>
<td>.0858</td>
<td>16</td>
<td>5.788</td>
<td>1.903</td>
<td>3.04</td>
<td>.0078**</td>
<td>.0858</td>
</tr>
<tr>
<td>Per Client Expenditure</td>
<td>.6176</td>
<td>16</td>
<td>-.0002</td>
<td>.0005</td>
<td>-0.51</td>
<td>.6176</td>
<td>.6176</td>
</tr>
<tr>
<td>Years Agency Opened</td>
<td>.6003</td>
<td>16</td>
<td>.0350</td>
<td>.0564</td>
<td>0.62</td>
<td>.5438</td>
<td>.6003</td>
</tr>
<tr>
<td>Agency in a metro area: No vs. Yes</td>
<td>.3514</td>
<td>16</td>
<td>2.827</td>
<td>1.883</td>
<td>1.5</td>
<td>.1527</td>
<td>.3514</td>
</tr>
<tr>
<td>Client Count</td>
<td>.3514</td>
<td>16</td>
<td>-.0001</td>
<td>.0001</td>
<td>-1.73</td>
<td>.1025</td>
<td>.3514</td>
</tr>
<tr>
<td>Number of Services Provided</td>
<td>.3514</td>
<td>16</td>
<td>.7591</td>
<td>.5112</td>
<td>1.48</td>
<td>.1570</td>
<td>.3514</td>
</tr>
<tr>
<td>Caseload size: =&gt;15 vs 1-14 clients</td>
<td>.0020</td>
<td>16</td>
<td>-5.788</td>
<td>1.099</td>
<td>-5.27</td>
<td>&lt;.0001****</td>
<td>.0020**</td>
</tr>
<tr>
<td>Volunteers: Uses vs. Does not use</td>
<td>.6003</td>
<td>16</td>
<td>1.520</td>
<td>2.462</td>
<td>0.62</td>
<td>.5457</td>
<td>.6003</td>
</tr>
<tr>
<td>Per capita tax: $16-19.99 vs. $20-23.99</td>
<td>.5352</td>
<td>16</td>
<td>2.834</td>
<td>3.376</td>
<td>0.84</td>
<td>.4136</td>
<td>.5352</td>
</tr>
<tr>
<td>Council member: No vs. Yes</td>
<td>.3514</td>
<td>16</td>
<td>1.791</td>
<td>1.261</td>
<td>1.42</td>
<td>.1747</td>
<td>.3514</td>
</tr>
<tr>
<td>CM Education: No Master’s vs. Master’s</td>
<td>.6099</td>
<td>16</td>
<td>3.337</td>
<td>4.980</td>
<td>0.67</td>
<td>.5124</td>
<td>.6099</td>
</tr>
</tbody>
</table>

*p value <.05  **p value < .01   ***p value <.0001

Table 28. Initial Analyses, Simple Linear Regressions
Mediators and Moderators

Not all of the tests for moderators are shown but Table 29 and Table 30 show the results of moderator tests for two independent variables: expenditure per client and case manager pay. There was a significant interaction between gender and expenditure per client. There was also a significant interaction between gender and case manager pay of less than $16 dollars. Other tests for moderation are not shown but resulted in an interaction between funding from other sources and race, relationship status, and having a chronic illness. There were no significant interactions with the other funding variables.
<table>
<thead>
<tr>
<th>Effect</th>
<th>Adj. R²</th>
<th>F Value</th>
<th>B Coefficient</th>
<th>SE</th>
<th>t- value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.031</td>
<td>.370</td>
<td>-1.70</td>
<td>2.77</td>
<td>-.610</td>
<td>.550</td>
</tr>
<tr>
<td>Per Client</td>
<td>5.37</td>
<td>-.001</td>
<td>&lt;.001</td>
<td>3.57</td>
<td>-.003**</td>
<td>.002</td>
</tr>
<tr>
<td>Gender * Per Client</td>
<td>4.46</td>
<td>.001</td>
<td>2.110</td>
<td>.051</td>
<td></td>
<td></td>
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<tr>
<td>Race</td>
<td>.018</td>
<td>2.29</td>
<td>-3.94</td>
<td>2.61</td>
<td>-1.51</td>
<td>.150</td>
</tr>
<tr>
<td>Per Client</td>
<td>.440</td>
<td>.000</td>
<td>&lt;.001</td>
<td>.690</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>Race*Per Client</td>
<td>.080</td>
<td>.000</td>
<td>&lt;.001</td>
<td>.280</td>
<td>.784</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>.000</td>
<td>.450</td>
<td>2.21</td>
<td>3.29</td>
<td>.670</td>
<td>.511</td>
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<td>Per Client</td>
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<td>.000</td>
<td>.001</td>
<td>-3.40</td>
<td>.738</td>
<td></td>
</tr>
<tr>
<td>Single*Per Client</td>
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<td>.000</td>
<td>&lt;.001</td>
<td>.230</td>
<td>.819</td>
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<td>1.69</td>
<td>.430</td>
<td>.673</td>
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</tr>
<tr>
<td>Per Client</td>
<td>.510</td>
<td>.000</td>
<td>.000</td>
<td>-4.60</td>
<td>.652</td>
<td></td>
</tr>
<tr>
<td>Education*Per Client</td>
<td>.180</td>
<td>.000</td>
<td>&lt;.001</td>
<td>-4.30</td>
<td>.675</td>
<td></td>
</tr>
<tr>
<td>Age</td>
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<td>.130</td>
<td>1.56</td>
<td>4.33</td>
<td>-3.60</td>
<td>.723</td>
</tr>
<tr>
<td>Per Client</td>
<td>.620</td>
<td>.000</td>
<td>.001</td>
<td>-7.30</td>
<td>.478</td>
<td></td>
</tr>
<tr>
<td>Age*Per Client</td>
<td>.010</td>
<td>.000</td>
<td>.001</td>
<td>.080</td>
<td>.937</td>
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</tr>
<tr>
<td>Desirability</td>
<td>.046</td>
<td>4.37</td>
<td>5.24</td>
<td>2.51</td>
<td>-2.09</td>
<td>.053</td>
</tr>
<tr>
<td>Per Client</td>
<td>.960</td>
<td>.000</td>
<td>.000</td>
<td>-6.00</td>
<td>.558</td>
<td></td>
</tr>
<tr>
<td>Desirability*Per Client</td>
<td>.760</td>
<td>.000</td>
<td>&lt;.001</td>
<td>-8.70</td>
<td>.398</td>
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<tr>
<td>Chronic Illness</td>
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<td>.000</td>
<td>.074</td>
<td>2.21</td>
<td>.030</td>
<td>.974</td>
</tr>
<tr>
<td>Per Client</td>
<td>.590</td>
<td>.000</td>
<td>.001</td>
<td>-4.10</td>
<td>.690</td>
<td></td>
</tr>
<tr>
<td>Chronic Illness*Per Client</td>
<td>.110</td>
<td>.000</td>
<td>&lt;.001</td>
<td>-3.40</td>
<td>.742</td>
<td></td>
</tr>
<tr>
<td>Symptoms*Per Client</td>
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<td>.350</td>
<td>2.06</td>
<td>3.47</td>
<td>.590</td>
<td>.562</td>
</tr>
<tr>
<td>Per Client</td>
<td>.010</td>
<td>.001</td>
<td>.001</td>
<td>.850</td>
<td>.405</td>
<td></td>
</tr>
<tr>
<td>Symptoms*Per Client</td>
<td>1.54</td>
<td>-.001</td>
<td>.001</td>
<td>-1.24</td>
<td>.232</td>
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</table>

** p value < .01

Table 29. Moderator Analyses for Agency Expenditures Per Client
### Moderator Analyses for Case Manager Pay Regressed on Mean Client Satisfaction Scores

<table>
<thead>
<tr>
<th>Effect</th>
<th>Adj. R²</th>
<th>F Value</th>
<th>β Coefficient</th>
<th>SE</th>
<th>t-Value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.063</td>
<td>6.85</td>
<td>.510</td>
<td>1.64</td>
<td>.310</td>
<td>.760</td>
</tr>
<tr>
<td>Pay</td>
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<td>.751</td>
<td>2.94</td>
<td>.260</td>
<td>.802</td>
<td></td>
</tr>
<tr>
<td>Gender * Pay</td>
<td>5.21</td>
<td>7.41</td>
<td>3.25</td>
<td>2.28</td>
<td>.037*</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>.052</td>
<td>7.65</td>
<td>-1.02</td>
<td>1.99</td>
<td>-.510</td>
<td>.616</td>
</tr>
<tr>
<td>Pay</td>
<td>6.67</td>
<td>7.19</td>
<td>1.80</td>
<td>3.98</td>
<td>.001**</td>
<td></td>
</tr>
<tr>
<td>Race*Pay</td>
<td>3.85</td>
<td>-4.97</td>
<td>2.53</td>
<td>-1.96</td>
<td>.067</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>.047</td>
<td>3.62</td>
<td>.602</td>
<td>2.16</td>
<td>.280</td>
<td>.784</td>
</tr>
<tr>
<td>Pay</td>
<td>11.11</td>
<td>4.47</td>
<td>1.93</td>
<td>2.32</td>
<td>.034*</td>
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<td>Single*Pay</td>
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<td>2.92</td>
<td>1.47</td>
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<td>.384</td>
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<td>.120</td>
<td>.902</td>
</tr>
<tr>
<td>Pay</td>
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<td>5.78</td>
<td>2.74</td>
<td>2.11</td>
<td>.051</td>
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<tr>
<td>Education*Pay</td>
<td>.010</td>
<td>.558</td>
<td>4.82</td>
<td>.120</td>
<td>.909</td>
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</tr>
<tr>
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<td>.039</td>
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<td>1.70</td>
<td>3.53</td>
<td>.480</td>
<td>.636</td>
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<td>5.09</td>
<td>1.23</td>
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<tr>
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<td>-.030</td>
<td>.980</td>
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<td>.990</td>
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<td>1.41</td>
<td>3.53</td>
<td>.400</td>
<td>.696</td>
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</tr>
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<td>-1.650</td>
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<td>.818</td>
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<td>.250</td>
<td>.802</td>
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</tr>
<tr>
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<td>6.02</td>
<td>4.17</td>
<td>1.44</td>
<td>.168</td>
<td></td>
</tr>
</tbody>
</table>

*p value <.05    **p value < .01

Table 30. Moderator Analyses for Case Manager Pay
Unexpectedly, grant funding was the only independent variable related to funding source that was found to be significantly associated with client satisfaction scores in simple linear regression. Hence, grant funding was used to evaluate potential mediators. As mentioned above, in an evaluation for a mediation effect the independent variable must be statistically significant when regressed against the dependent variable. There must also be a statistical significance when the independent variable is regressed against the suspected mediators. Several variables were evaluated for potential mediation effect with grant funding. Variables tested as possible mediators included case manager pay, caseload size, expenditures per client, average staff compensation, and case manager education. No plausible mediators were found to be associated with grant funding.

**Main Finding: Stepwise Multiple Regression with Funding Variables and Cofactors**

As shown in below funding from the state, grant, and from other sources were the only three funding variables that were significantly associated with client satisfaction scores in the final regression model. The intercept only model had an Adj. R² = .97, RMSE = 14.92, and F Value = 6014). Table 32 provides variables, coefficients, t-values, and p values for the final model. The model has an Adj. R² = .2640, a RMSE =11.86 and a model F value = 110316. Two of the interaction terms for moderators that were left in the model are not statistically significant, but the strength of the model deteriorated when they were removed. Other client socio-economic variables such as age, education, relationship status, and chronic disease status were neither significant nor helpful to the model. Agency fixed characteristics such as years providing services, size, and metro location were not significant. The Adjusted R² suggests that the model explains 26% of the variance in client satisfaction scores. Taken another way, this model does not account for more than 70% of the variation in client satisfaction scores. The RMSE which is
in the same units as client satisfaction (percentage points), suggests that there is a fair amount of error associated with the predictors in the equation.

The final model is written below:

\[ E[satisfaction_{client} | x] = 79.2 - .81 \text{grant\_funding} + 1.0 \text{state\_funding} + \]
\[ .38 \text{funding\_other\_sources} + 7.5 \text{non\_male\_gender} - 3.6 \text{non\_white\_race} + 12.6 \text{client\_input\_sought} - \]
\[ 8.8 \text{services\_offered} - 9.3 \text{all\_services\_not\_helpful} + 6.9 \text{in\_control\_of\_thoughts} - .7 \text{state\_funding\_state\_funding} - \]
\[ .7 \text{state\_funding\_state\_funding}\_non\_white\_race + .7 \text{grant\_funding\_non\_white\_race} \]

The following set of observations can be drawn from the model. First, holding the other variables in the model constant, client satisfaction decreased by a little less than one percent for every percentage point increase in grant funding. Funding from the state had a nearly opposite relationship with client satisfaction scores. Holding the other variables in the model constant, for each percentage of an agency’s funding received from the state, client satisfaction scores increased by one percent. Higher funding from other sources (sources that were not Medicaid, State, ADAMH Board, Grants, or Private-Insurance) was associated with slightly higher client satisfaction scores.

Compared to the funding variables, the co-factors and client related variables in the model had much larger Beta (β) coefficients. As in Study 2, controlling for other variables, a client’s perception about whether agency staff sought his or her feedback about services seemed to be the greatest driver of changes in client satisfaction scores. Holding other variables constant, clients who believed that staff rarely, sometimes, or regularly asked clients how they feel about services experienced 12.6% higher client satisfaction scores than clients who believed that staff never asked how clients feel about services. In coefficient order, the other variables that influenced satisfaction the most were, clients’ belief that not all services over the clients’
lifetime had been helpful (-9.3), clients being on a caseload of more than 14 clients (-8.8), and clients being not male (i.e. female, transgender, or other) (7.5). Of the moderators, there was a significant interaction between clients’ gender and an agency’s receipt of funding from the state. Specifically, for clients who were not male, a one percent increase in funding from the state was associated with a .6 decrease in client satisfaction scores.

### Association between Proportion of Funding, Client and Agency Characteristics and Client Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$ Coefficient</th>
<th>SE</th>
<th>t-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of funding from Grants</td>
<td>-0.817</td>
<td>.170</td>
<td>-4.84</td>
<td>.0002***</td>
</tr>
<tr>
<td>Proportion of funding the State</td>
<td>1.01</td>
<td>.229</td>
<td>4.43</td>
<td>.0004***</td>
</tr>
<tr>
<td>Proportion of funding from other sources (E.g. Client Self-pay, donations, rental income)</td>
<td>.380</td>
<td>.173</td>
<td>2.21</td>
<td>.0424*</td>
</tr>
<tr>
<td>Sex: Non Male vs. Male</td>
<td>7.51</td>
<td>1.39</td>
<td>5.40</td>
<td>&lt;.0001****</td>
</tr>
<tr>
<td>Race: Non-White vs. White</td>
<td>-3.58</td>
<td>1.70</td>
<td>-2.11</td>
<td>.0512</td>
</tr>
<tr>
<td>Clients believe agency seeks clients feedback: Yes vs. No</td>
<td>12.6</td>
<td>2.64</td>
<td>4.76</td>
<td>.0002***</td>
</tr>
<tr>
<td>Caseload Size: =&gt;15 clients vs. &lt;15 clients</td>
<td>-8.83</td>
<td>1.24</td>
<td>-7.11</td>
<td>&lt;.0001****</td>
</tr>
<tr>
<td>Clients believe all mental health services helpful: No vs. Yes</td>
<td>-9.27</td>
<td>2.03</td>
<td>-4.56</td>
<td>.0003</td>
</tr>
<tr>
<td>Client feels in control of thoughts: Yes vs. No</td>
<td>6.88</td>
<td>1.16</td>
<td>5.93</td>
<td>&lt;.0001****</td>
</tr>
<tr>
<td>State Funding x Non-Male Sex</td>
<td>-0.691</td>
<td>.320</td>
<td>-2.16</td>
<td>.0460*</td>
</tr>
<tr>
<td>State Funding x Non-White Race</td>
<td>-0.337</td>
<td>.550</td>
<td>-0.61</td>
<td>.5485</td>
</tr>
<tr>
<td>Gant Funding x Non-White Race</td>
<td>0.684</td>
<td>.439</td>
<td>1.56</td>
<td>0.1392</td>
</tr>
</tbody>
</table>

*p value <.05   **p value < .01   ***p value <.001   ****p value <.0001

Table 31. Final model describing the Relationship between Funding and Client Satisfaction Scores
Summary of Objectives and Findings

The aims of this research were to explore the extent to which funding was associated with changes in client satisfaction scores at community mental health agencies in Ohio. In addition, the study sought to determine whether cofactors influenced the relationship between funding and client satisfaction scores. Data was collected using three surveys administered to agency administrators, case managers, and clients. Data was also collected from the agency Form 990 tax returns. The first aim of this study was to explore the extent to which agency funding was associated with variations in client satisfaction scores. The first hypothesis was that client satisfaction scores would increase as agency spending per client and compensation per staff increased. The results of the study disproved Hypothesis 1. Client satisfaction scores did not increase as average spending per client and average staff salary increased. In fact, there were no statistically significant linear associations between per client expenditure or average staff salary and client satisfaction. Hypothesis 1b posited that satisfaction scores would be higher in agencies that received a higher level of Medicaid revenue compared to ADAMH Board or State funding. The research did not provide any support for this hypothesis. Medicaid funding was not statistically associated with client satisfaction, nor was ADAMH board funding. However, receipt of funding from the state was positively associated with client satisfaction. Hypothesis 1c suggested that satisfaction scores would be higher for agencies who maintained positive net revenue over two years. The study did not provide evidence to support Hypothesis 1c. Positive revenue across two years was not associated with client satisfaction scores in neither simple linear regression nor stepwise regression modelling. Overall, there seem to be limited direct effect of funding on client satisfaction scores.
The second aim was to discover agency-specific and other cofactors, which influence the relationship between funding and client satisfaction. Several moderators of funding on client satisfaction were discovered in initial regression models. In the final model, smaller caseload size was associated with higher client satisfaction scores. Other agency characteristics, whether fixed or variable were not found to influence the relationship between funding and client satisfaction. In addition, in the final model, variables related to clients’ perceptions of having their feedback valued, and clients’ general outlook on the helpfulness of all of the mental health services received, had the largest impact on client satisfaction scores.

Discussion

**Aim 1: The Relationship between Funding and Client Satisfaction Scores**

One hypothesis suggested there would be a clear linear relationship between increased spending on clients and on staff salaries and client satisfaction scores. This was not the case. Multivariable linear regression showed no statistically significant linear relationship between CMHA per client expenditure and client satisfaction scores. There was also no relationship between average employee salary and client satisfaction scores. These two independent variables were intended to represent the choices CMHAs make when transforming external funding into organizational resources. The intention was to demonstrate that while CMHAs may have little control over the sources of external funding, they are able to some degree to increase or decrease the dollars spent per client and on staff salaries. Despite the wide variation in per client expenditure (a range of $11,000) and average staff salaries (a range of $50,000), CMHA decisions related to these two variables did not appear to be associated with client satisfaction scores.
It is possible that there is truly no significant direct linear relationship between per client spending, and staff compensation variables and client satisfaction. It is also possible that the number of unique agencies (n=18) was too small to detect differences. In his study of the association between state-level per client spending on mental health services, Hendryx (2008) did find an association between per client spending and service access, and the rate of incarceration in the state [264]. However, he did not find a relationship between clients’ ratings of service quality and increased per client spending [264]. Nor did he find a relationship between per capita spending on mental health services and any of the 21 performance indicators he used. Hendryx’s sample size included the 50 states and the District of Columbia.

Two other studies, one cross national and the other limited to the 50 states, examined the relationship between mental health funding for suicide prevention and rates of deaths by suicide. Neither study found significant associations between increased funding per capita and lower rates of deaths by suicide [290, 291].

Other research examined the relationship between funding sources and other dependent variables. Lo Sasso and Byck (2010) did find that increased funding from state and federal sources were associated with increased mental health staffing, treatment and counseling services, as well as 24-hour crisis intervention at federally qualified health care centers (FQHC) [214]. However, their research did not involve a comparison of funding sources; rather it just measured increases in overall funding. The strongest finding across several studies was primarily that increased funding increases services access and or use [214, 264, 292]. In a comparison of three mental health facilities, including one run by the Veterans Administration, Desai et al (2005) found no association between service quality and three sources of funding, Medicare, Medicaid or private insurance [263].
The second set of funding variables examined in this study were related to external funding. These variables represented the proportion of funding each agency received from Medicaid, the state, local ADAMH board, private insurance, grants, and other sources. There was a significant but weak relationship between some sources of external funding and client satisfaction scores. In the model described in Table 31, increases in grant funding were associated with a slight decrease in client satisfaction scores. Alternatively, an increase in funding from state agencies (such as OhioMHAS, Jobs and Family Services, or the Department of Aging) was associated with slight increases in client satisfaction scores. Increases in percentage of funding from other sources including client self-pay, contracts, client rents, and Medicare were also associated with slightly higher client satisfaction scores. The negative relationship between grant funding and client satisfaction scores is difficult to explain. In retrospect, it is an important consideration that the survey to agency administrators did not ask them to differentiate between grant funding awarded from federal entities like SAMHSA, grants from private foundations, and grants through not for profit charities that serve to redistribute funds. There may be important differences between the various types of grant funding. One study which examined foundation grants in particular, suggests there may be large variation in the types of services and populations served with funding from foundation grants [293]. There may also be variations in the expected outcomes. The positive relationship between funding from the state and client satisfaction is interesting, especially when there were no significant relationships between client satisfaction and Medicaid funding, or funding through private insurance. Perhaps, the ways in which funds from various state agencies are targeted, the level of accountability associated with receipt of these funds, the types of communities in receipt of
these funds, or some other unknown variables are on a relationship pathway between state funding and to client satisfaction scores.

Another explanation for the absence of a significant relationship or very weak relationship between client satisfaction and funding may have to do with the level of funding for mental health services. Perhaps with the chronic underfunding of mental health services and the huge variation in service quality, an attempt to measure the relationship between funding and client satisfaction would be akin to measuring the relationship between decreases in temperature and snowfall on a tropical island. A relationship will be absent or weak, because the temperature rarely gets low enough on a regular basis for there to be snow. Similarly, the penetration of quality mental health services is so low and so poorly funded that we may not have reached the threshold of funding yet where a strong relationship between funding and client satisfaction would show itself. This explanation makes sense, as the service variable that seems most influenced by funding in research studies is service access. This suggests that in the presence of additional resources policy makers and providers focus on increased service capacity because that is where the need is greatest, rather than on increased service quality. This explanation is possible but not without its faults. Hendryx suggests that poor management of existing funds is just as likely an explanation for a lack of relationship between increased funding and client satisfaction scores [264]. At the same time, Provan and Milward (1995) in their description of effectiveness in mental health systems warn against the assumption that suitable levels of funding equal higher quality [294]. “Since mental health services are costly and on-going, adequate funding is critical for maintaining an effective system. As is often the case in many areas of health and human services, however, high funding alone is insufficient to ensure favorable outcomes, particularly when network-level factors are important for success”
Provan and Milward (1995) suggest that elements of the service networks such as the level of centralization and integration are very important to system performance, and that available funding acts as a moderator on other network qualities [294]. Other researchers suggest variables that might be more closely linked to performance than funding may include local agency leadership, management strategies, and local environment [264] [266].

Several authors who have completed research on the relationship between funding and performance indicators have alluded to or come to the conclusion directly, that a variety of more relevant factors are related to quality indicators in addition to or instead of the source or level of funding. The finding in this study (see below), that there were several co-factors, which exhibited a stronger association with client satisfaction than did funding supports the idea that perhaps the relationship between funding and client satisfaction is secondary to the relationship between other system, agency-level, and client level variables.

**Aim 2: Agency Specific and Other Co-factors, as Mediators or Moderators.**

This study demonstrates that there is at least one agency cofactor that influences the relationship between funding and client satisfaction. The final regression model suggests that clients on smaller caseloads are more satisfied. Caseload size was initially included as a cofactor to demonstrate one of the ways (within an agency’s control) that agency administrators could choose to disburse the funds they received from external sources. The conclusion then should be that agencies have the power to improve client satisfaction by placing clients on smaller caseloads. However, this is a drastic oversimplification of the dynamics within CMHAs. In addition, it is likely that it is the type and intensity of the case management that occurs in smaller caseloads and not just the caseload size that is linked to client satisfaction scores. Currently the smallest caseloads are provided for individuals who are the most severely ill.
Smaller caseloads are also generally tied to evidence-based services like Assertive Community Treatment (ACT), and Intensive Case Management (ICM) [178, 295-297]. Smaller caseloads are probably also managed by better trained (e.g. master’s level social workers) case managers. It is not plausible for each individual receiving case management services to be on a caseload of less than 15 people. However, the realities of scarce resources should not negate the fact that all else being equal smaller caseloads are associated with client satisfaction scores.

Client characteristics were also important cofactors. In tests for moderators, there were significant interactions between gender and expenditures per client, gender and case manager pay, race and receipt of funding from other sources, relationship status and receipt of funding from other sources, and having a chronic illness and receipt of funding from other sources. Only those moderators that remained in the final model will be discussed in details. There was an interaction between receipt of funding from the state and gender. Individuals who did not identify as male had slight lower satisfaction scores when their agency had increased funding from the state. The other two interaction terms were not significant but benefitted the model.

As shown in Study 2, the variables that have the strongest relationship to variations in client satisfaction are associated with the clients’ perceptions, outlook, and symptoms. By far, the variable that can change client satisfaction the most is the clients’ perception of whether the agency within which they are receiving services makes an effort to gather client feedback. Reflecting back on Table 17 in Study 2, in response to “How often do staff ask how you feel about services?” clients responded regularly: 35.5%, sometimes: 35.7%, rarely: 15.2% and never: 13.6%. Clients who chose any response category other than “never” tended to be more satisfied. This finding provides an opportunity for CMHAs to improve client satisfaction without requiring additional financial resources. Clients seem to place a high value on feeling like their
feedback is important. If there were a true causative relationship, CMHAs have only to demonstrate the client feedback is important in order to increase client satisfaction scores. This recommendation is easiest to put in place for those CMHAs that work hard at being recovery-oriented and treating clients like partners. It is likely that those agencies where clients feel neglected may need to do more work to adjust agency culture. Of course, since this research explains less than 30% of the variation in client satisfaction score, it is likely there is an interplay of several variables that may be more amenable to CMHA intervention. Future research will help identify what those variables are.

Limitations

Several important limitations must be considered when interpreting the results from this study. The primary limitation associated with this research is that respondent agencies represent less than ten percent of the target population. Respondent agencies are also similar to each other but different from non-responders in tax revenue per capita. This may suggest meaningful differences when it comes to the receipt and allocation of mental health funds. Some limitations are inherent in the data collection process. First, the data gathered from the agency administrator survey in Study 1 are all estimates. In order to decrease the burden of the survey, agency administrators were asked to provide estimates. In addition, much of the data was collected using fixed answer response categories. Hence data analysis was categorical for data that was continuous, like numbers of clients’ served, case manager pay, and number of years providing services. Analysis of data in fixed categories is easier than for continuous variables, but the penalty is a loss of precision [150].

The second data limitation is temporal. Form 990 data was used from calendar year 2012, which was the most updated year available. However, survey data was gathered in 2014-
2015. Since Medicaid expansion began in 2014, there may be significant differences in agency funding sources and levels since the implementation of the ACA.

The third limitation may be in how some of the independent variables were defined. Expenditures per client were calculated using the total revenue related to program services at each agency by the total number of clients the agency serves. This is a crude estimate for dollars expended per client with mental illness. This estimate may not be accurate in situations where agencies serve many different sub populations of clients or in cases where agencies engage in an array of services, some of which are more intensive than other services. So for instance, if in addition to Medicaid services, an agency provides prevention education as well as supportive housing to individuals with mental illness, they may indicate that they served 3,000 people total. However, if only 1000 of those individuals received high cost supportive housing, and the remaining 2,000 received education about mental illness and recovery, then dividing the agency’s revenue by 3,000 would give an inaccurate view of the amount of expended per client. The same is true for average salary per staff member. Agencies hire a variety of staff, some in a clinical capacity and others in an administrative capacity. A higher average staff salary may mean that the agency has two or three psychiatrists who have skewed the mean, or that similarly that the agency’s top five highest paid individuals accounted for a larger percentage of total compensation than in other agencies. For instance, in some agencies the salary of the chief executive accounted for less than one percent of total compensation while in others it accounted for almost five percent. A third possibility may have to do with the lack of variation in client satisfaction scores as discussed in Study 2.
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

This dissertation focused on identifying factors that influence client satisfaction at Community-based Mental Health Agencies (CMHAs) in Ohio. The first of three studies examined the actions and perspectives of CMHAs related to client satisfaction. The second study compared case managers’ perceptions of client satisfaction to clients’ perceptions of client satisfaction. The third study examined the extent to which funding and other cofactors were associated with client satisfaction.

Together the studies found that:

1. CMHAs collect client satisfaction data
2. Agencies use the data for quality improvement.
3. Levels of client satisfaction found in this study are similar to those collected in other outpatient mental health settings.
4. Client personal characteristics, previous service experiences, and caseload size affect the level of client satisfaction more than funding variables.
5. On average, the difference between client and case manager perceptions of client satisfaction is small.

Agency Collection and Use of Client Satisfaction Data

The research demonstrated that collecting client satisfaction data and using it to improve services is a priority for the CMHAs that agreed to participate in the study. Prior to this
research, it was not clear to what extent CMHAs collected client satisfaction data, and what the data was used for after it was collected. The majority of agencies use client satisfaction data for quality improvement, to change services, to communicate with stakeholders, and on grant applications. Agency collection and use of client satisfaction may be driven by several mechanisms. Regulatory agencies and funders at the federal, state, and local levels require that agencies demonstrate they incorporate stakeholder feedback into service planning and implementation. Furthermore, agencies that provide accreditation for behavioral health providers also require or encourage the collection of stakeholder data. Unfortunately, the number of stakeholders that may impose client satisfaction data requirements on agencies also means that there are differences in how agencies collect and use client satisfaction data. This research found several differences across agencies. Specifically, the research showed differences in agency appreciation of the usefulness of client satisfaction data (some agencies believe client satisfaction data is useful but not essential to service evaluation), the instruments that are being used to collect client satisfaction data, the schedule on which data is collected, and the strategies used to apply satisfaction data to quality improvement plans. Given this data it is likely some agencies’ commitment to client satisfaction data is more meaningful than other agencies. To this point, all agencies report collecting data, yet 14% of clients from these agencies report that staff never ask for their (the clients’) feedback on services.

This research suggests some clear opportunities for improvement. The first opportunity is to standardize of the survey methodology that CMHAs use to collect client feedback. If CMHAs can agree on the what instruments to use to collect data, when data is collected, how it is shared, what mix of techniques are used (focus groups, interviews, questionnaires), and who collects the data, then the data gathered may be a more reliable aid in decision-making.
Increasingly, CMHAs are being asked to make decisions based on evidence and data. In order for decisions to be sound, the data that supports them must be rigorous and of high quality. In order for there to be accountability (to clients, agency boards, funders, regulatory bodies), around decisions, the data also needs to be transparent.

One example of a standardized client satisfaction data collection strategy is the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey administered by the Centers for Medicare and Medicaid. The data collection methodology including the survey instrument, the sample size, and the schedule of administration are standard across the hospitals that participate with HCAHPS. Furthermore, the data from all hospitals is readily accessible by any hospital and by the public. In the mental health community, initiatives like Health Homes for individuals with serious and persistent mental illness, and changes due to the Accountable Care Act encourage a very high level of inter-relatedness between mental health service agencies. It is important that agencies can share and understand the metrics they and their partners are using to evaluate services. Considering the structure of Ohio’s mental health system, attempts at standardization will not be easy. In the past, OhioMHAS has administered the MHSIP survey to clients of the mental health service system, but it is unclear whether that survey will continue to be administered and whether agency-level results were shared with agencies and local ADAMH boards.

**Client Satisfaction and Associated Variables**

This study found an average client satisfaction score of 83.9% among participating providers. The literature suggests that scores of 80% and above are often found in the outpatient or community mental health field. Having a score over 80% does not suggest that
agencies cannot continue to implement quality improvement approaches to improve client satisfaction scores. In addition, there is also a role for the discrepancy theories in making client satisfaction data more useful to stakeholders. As mentioned earlier, discrepancy theories suggest that the usefulness of client satisfaction is in gaining information about clients who are dissatisfied and why. Agencies must make an effort to address the issues for any clients with scores significantly below 80%.

As has been found in other research on client satisfaction. The variables that seem to impact satisfaction the most are those variables that are intrinsic to the client, rather than those related to extrinsic variables. For instance, this research did not show strong relationship between external funding variables and client satisfaction. There was no relationship between per client expenditures or staff salary on client satisfaction. Variables that were strongly associated with client satisfaction were client’s sense that agencies actively sought clients’ feedback and the general outlook clients had about mental health services and caseload size. This finding is helpful to providers in three ways.

First, this research provides agencies with a better sense of what variables they may need to control for in order to understand the relationship between services and client satisfaction. So in future, when agencies or regulatory bodies collect client satisfaction data, they must include measurements of social desirability, symptom severity, experience in previous or concurrent services and general outlook about mental health services. Controlling for these variables will help give a clearer picture of the relationship between client satisfaction scores and other variables of interest.

The second way in which this research is helpful to providers is that it shows them a potentially low burden method for improving client satisfaction scores. It seems that client
satisfaction was highly influenced by the perception of clients that agencies valued and sought client feedback. In short, if agencies collect feedback from clients in a way that is meaningful to clients, then clients will be more satisfied. The key is that the interaction (the collection of data) must be meaningful to clients. Furthermore, clients must have some faith that the data collection process will not expose them to harm, or negatively influence their services. This kind of meaningful interaction is likely to occur at agencies that foster an atmosphere which promotes the principles of recovery, person-centered planning, and culturally appropriate care. In a field that is as highly based on interpersonal relationships, and therapeutic relationships as mental health, it makes sense that clients’ perceptions of whether their wants and needs are being met are so closely tied to whether clients believe they are being listened to by providers. Ideally, clients should feel empowered enough and be sufficiently integrated into the operations of an agency, that they should take it for granted that their feedback should be sought regularly and be considered important.

The third recommendation from this research is for agency leaders to place clients on smaller caseloads. Of the funding variables, and fixed agency characteristics, the agency-related variable that changed the β coefficient the most was caseload size. Caseload sizes of less than 15 clients (compared to caseloads over 25) have the most influence on client satisfaction, especially a client’s sense of whether he or she received the appropriate amount of help. In fact, any caseload size less than 25 improves the components of overall client satisfaction scores. Within the context of smaller caseloads, clients may establish better therapeutic alliances with case managers and other treatment and support providers.
Case Manager and Client Perceptions of Client Satisfaction

This research also shows that on average, there is only a four-percentage point difference between clients and case managers’ perceptions of client satisfaction. The suggestion is that clients and case managers share similar ideas about whether clients’ wants and need are being met. The range in difference across the 18 agencies provides an interesting tool of comparison for agency managers. Data on treatment compliance, service outcomes, medication adherence, goal attainment, and other measures of clients’ progress were not gathered as a part of this study, but future studies may investigate whether smaller differences between client and case managers’ perceptions of client satisfaction are associated with treatment outcomes.

Future Research

Future studies, with more power, may be designed to expand, confirm or refute the findings here, and by doing so build the body of evidence available to stakeholders in the mental health field. Specifically, it would be interesting to evaluate the differences in client satisfaction scores between clients who received recovery-oriented education about mental illness and what they can expect as outcomes of care, compared to clients who have not received such education. Another aspect of research could focus on identifying the other 70% of variables, not covered in this research that are associated with variations in client satisfaction. Importantly, a partnership between agencies and researchers to develop standardized data collection in community mental health would be an incredible contribution to improving the quality of services. Other research might evaluated the effect of control variables related to social desirability and clients’ general outlook on client satisfaction data. Finally, it would be useful to
have accurate data on what types of quality improvement methods are being used in CMHAs, and what gains have been made through the use of quality improvement techniques.
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APPENDIX A: APPROVAL LETTERS

Tamalpais Matrix Systems Approval

May 19, 2014

Christanne Wilks
Doctoral Candidate
College of Public Health, Division of Health
Services Management & Policy
The Ohio State University
200D Canary Hall
1841 Neil Avenue
Columbus, OH 43210-1351

Dear Christine Wilks:

Thank you for your interest in the CSQ Scales and your plan to use the CSQ-8 in US
English in the context of your evaluation research and quality assurance program
pursuant to completion of your doctoral dissertation at The Ohio State University. Your
CSQ Scales order # TMS1400634 shipped on May 19, 2014, via USPS Priority Mail and
the box contained 500 forms (TMS192) of the CSQ-8 in US English. This is to also
confirm that Invoice # TMS1499634 was paid in full by The Ohio State University
business check # 629849, dated 5/13/14 (re Purchase Order # RF01360925).

I also enclose with your shipment the most recent issue of The CSQ Scales Newsletter
and Federal Form W-9 for Tamalpais Matrix Systems LLC for your business officer. The
complimentary CSQ Scales Reprint Portfolio is also enclosed.

The CSQ Scales are used worldwide and are translated into 40+ languages. A list of
currently available translations can be found in The CSQ Scales Newsletter issue that is
included. Up-to-date information can always be obtained from the CSQ Scales website:
www.csq-scales.com

The CSQ Scales website has recently been re-constructed and the site is currently
available for use at the URL printed above. E-commerce features of the site will be
available for use in the near future. I will also keep you informed about future CSQ
developments, including: availability of translations, new scales developed for program
evaluation and research, and applications of the CSQ to assure quality of services. Please
contact me whenever I may be of further assistance.

Best regards,

Clifford Attixson, Ph.D.
President and Chief Executive Officer

Distributor of www.CSQ.com
info@CSQscales.com

660 Amaranth Boulevard • Mill Valley, CA 94941-8505 • Voice 415-316-2398 • Fax 415-315-2398
Email info@TamArrows.com • Website www.TamArrows.com

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Institutional Review Board Approval Letter

Behavioral and Social Sciences: Institutional Review Board

Office of Research Policy Practice
300 Jordan Administration Building
1090 Kenny Road
Columbus, OH 43210-1062

Phone (614) 688-8497
Fax (614) 688-6256
www.orb.ohio.edu

May 7, 2014

Protocol Number: 2014-0654
Protocol Title: FACTORS ASSOCIATED WITH CLIENT SATISFACTION AT COMMUNITY-BASED MENTAL HEALTH AGENCIES IN OHIO, Almeda Dembe, Christine Wills, College of Public Health
Type of Review: Initial Review— Expedited
IRB Staff Contact: Jacob R. Stoddard
Phone: 614-292-0526
Email: stoddard.13@osu.edu

Dear Daumba,

The Behavioral and Social Sciences IRB APPROVED BY EXPEDITED REVIEW the above referenced research. The Board was able to provide expedited approval under 45 CFR 46.110(b)(1) because the research meets the applicability criteria and one or more categories of research eligible for expedited review, as indicated below.

Date of IRB Approval: May 6, 2014
Date of IRB Approval Expiration: May 6, 2015
Expedited Review Category: 7

In addition, the protocol has been approved for a waiver of documentation of the consent process and for consent by a legally authorized representative.

If applicable, informed consent (and HIPAA research authorization) must be obtained from subjects or their legally authorized representatives and documented prior to research involvement. The IRB-approved consent form and process must be used. Changes in the research (e.g., recruitment procedures, advertisements, enrollment numbers, etc.) or informed consent process must be approved by the IRB before they are implemented (except where necessary to eliminate apparent immediate hazards to subjects).

This approval is valid for one year from the date of IRB review when approval is granted or modifications are required. The approval will no longer be in effect on the date listed above as the IRB expiration date. A Continuing Review application must be approved within this interval to avoid expiration of IRB approval and cessation of all research activities. A final report must be provided to the IRB and all records relating to the research (including signed consent forms) must be retained and available for audit for at least 3 years after the research has ended.

It is the responsibility of all investigators and research staff to promptly report to the IRB any serious, unexpected and related adverse events and potential unanticipated problems involving risks to subjects or others.

This approval is issued under The Ohio State University’s IRB Federally Approved #96006378. All forms and procedures can be found on the OSIRF website — www.orb.ohio.edu. Please feel free to contact the IRB staff contact listed above with any questions or concerns.

[Signature]
Michael Edwards, PhD, Chair
Behavioral and Social Sciences: Institutional Review Board

[Stamp: Full Accreditation]
Grant Award Letter from the Ohio Department of Mental Health and Addiction Services

March 19, 2013

Chrisanne Wilks
College of Public Health
200D Curt Hall
1841 Neil Avenue
Columbus, OH 43210

Dear Ms. Wilks:

Your research project, The Impact of Funding on Client Satisfaction at Community Mental Health Agencies in Ohio, is hereby approved by the Ohio Department of Mental Health. Your proposal materials have been determined to be consistent with our research priorities.

The project is approved for the period from March 1, 2013 to June 30, 2013. If the research is not completed by June 30, 2013, you will need to request an extension from this office and continue quarterly report requirements indicated below until the final report becomes available.

Quarterly Research Progress Reports (DMH-RES-518) are to be filed with this office by the tenth day of October, January, April, and July, giving a summary of progress which has occurred in the project during the previous quarter. Research Project Quarterly Fiscal Reports (DMH-RES-618) are due from your fiscal office by the thirteenth day of the above months, giving a summary of the expenditures made during the previous quarter and the project date. A quarterly report form is attached. Please duplicate sufficient copies of this form for your use throughout the project’s duration. One printed and one electronic copy of a final report is due within thirty days of the completion of the project. Guidelines are enclosed for submitting final reports of research projects. Additional dissemination of the project results will be developed with you by this office as the project nears completion.

Enclosed are four copies of the Research Grant Agreement which covers the current payment. Please have the appropriate fiscal agent in your organization sign and date all copies of the agreement and return all of them to me as quickly as possible. Final authorization for funds is contingent upon approval by the Deputy Director. As soon as these grant agreements have been fully executed, we will be contacting your fiscal office regarding the fiscal aspects of the project.
For administrative purposes, Helen Anne Sweeney will be your project supervisor. Please feel free to contact me any time regarding any problems you may be having with the project or to report any good news.

Sincerely,

Kraig Knudsen, PhD, MPH
Chief

cc: Allard E. Dembe, ScD

Enc: Research Progress Quarterly Form, Final Report Submission Guidelines
Agency Leader Recruitment Letter

June 16, 2014

Dear Agency Director,

My name is Chris Wilks. I am a PhD student in the College of Public Health at the Ohio State University (OSU). The purpose of this letter is to provide you with information about my research, and allow you time to consider whether you want to participate. The focus of my dissertation research is to help improve service effectiveness at community-based mental health agencies (CMHAs). My intention is to gather information that will be of practical benefit to agency heads. This dissertation research is supported by a grant from the Ohio Department of Mental Health and Addiction Services.

My study will involve three surveys. The first survey is one for you or a leadership designee to complete. The survey will ask about how you use satisfaction data. This survey will be completed online. The second surveys will be administered to approximately 10-20 clients and 5-10 case managers from your agency. I plan to assess the extent to which clients are satisfied with the services they receive and whether case managers perceive clients to be satisfied. To show appreciation, I will provide clients with a small incentive (a $5 gift card to Walmart) for their participation. Each survey will take no more than 10-15 minutes to complete. Your decision to complete the agency leader survey is separate from permission to recruit case managers and clients at your agency and will require separate consents from you.

I will endeavor to make this process as easy as possible for you and your agency. At the end of this project I will be able to tell you how CMHAs in Ohio collect and use client satisfaction data, whether case managers are aligned with clients on client satisfaction, and the effect of funding, and unique agency characteristics on satisfaction.

There is minimal risk of your participation in the study. Based on the strict requirements of the Institutional Review Board (IRB) at OSU, any information provided by you, case managers or clients will remain strictly confidential. I would only need to disclose your agency name if the survey answers suggest there is a risk to someone’s safety, which is unlikely. Your agency’s involvement and that of clients and case managers is voluntary. The results of the study will not identify individuals or agencies. All reports will be in aggregate. The faculty member in charge of this research is Dr. Allard Dembe at (614) 292-2129. If you have any questions about your rights as a research participant, you may call Ms. Sandra Meadows in the Office of Responsible Research Practices at (800) 678-6251. If you would like to discuss the project further, I am available to speak with you in order to explain my research in detail.

Please expect a follow up e-mail over the next two weeks requesting you complete the online agency survey and provide permission to recruit clients and case managers at your agency. You may also contact me at wilks.30@osu.edu.
Agency Leader Recruitment E-mail

E-mail to CMHA Directors/CEOs

This e-mail is in follow up to a letter that was sent to you on May xx, 2014. The letter is attached for your reference. My name is Chris Wilks. I am a PhD student in the College of Public Health at the Ohio State University (OSU). The purpose of this e-mail is two-fold.

First, I would like you to complete a survey on how your agency collects and uses client satisfaction data. If all mental health agencies complete this survey, we will have an accurate picture of the landscape in Ohio as it relates to the use of client satisfaction measures. The link to the survey is below. There will be a consent form for your review at the beginning of the survey. The second reason for this e-mail is to ask your permission to recruit a small number of case managers and clients at your agency to complete a one-time satisfaction survey. The goal of this project is to compare case manager and client perceptions on how satisfied clients are with services. I am able to provide an incentive of a $5 gift card to clients who agree to participate. Specifically, I am asking you to:

1) give me permission to come to your agency on a specific day/time,
2) allow me to set up a recruitment poster or handout recruitment forms to recruit clients,
3) provide a private space where clients may review the consent and take the survey if they decide to do so, and
4) allow me to invite case managers to take the survey face-to-face or electronically.

I will endeavor to make this process as easy as possible for you and your agency. I hope you will agree to participate in the survey and also provide permission for clients and case managers at your agency to take the survey. Please note that the decision to take the survey is separate from permission to allow Chris Wilks to come to your agency.

Your agency’s involvement in one or both parts of this study is voluntary. There is no penalty if you decide not to participate. As I mentioned in the letter, any information gathered from this study will only be reported in aggregate and will contain no individual or agency names, or descriptors that would allow the identification of any individual or agency.

Please reply to this e-mail indicating whether you give permission for Chris Wilks to recruit clients and case managers at your agency site.

Please click on the link provided to complete the survey. <<insert link>>

Thank you.
Agency Leader Consent Form

Agency Administrator Survey
Consent and Survey Introduction (To be placed as the first screen in the online survey)

Factors Associated with Client Satisfaction at Community-based Mental Health Agencies in Ohio

You have been selected to complete this survey because you are the agency leader or the designee of an agency leader at a community-based mental health agency (CMHA) in Ohio. We are inviting you to participate in a study about factors that affect client satisfaction at your agency. We sent you a letter on May xx, about this study. You will participate by answering questions on a survey about how your agency collects and uses client satisfaction data. The questions in this survey are not about you personally. You are being asked to answer questions about your agency.

The survey is being conducted by Chris Wilks, a doctoral student from the College of Public Health at the Ohio State University. Your participation in this research survey is voluntary. You may decline to participate without any penalty or loss of benefits to which you would otherwise be entitled. If you decide to participate in this study, you may withdraw at any time. You may withdraw from the survey even after you submit the survey by contacting us at the number below. There are no direct benefits to your agency if you participate in this survey. There are also no expected risks associated with your participation.

The online survey will take approximately 8-15 minutes. You only have to complete the survey one time. Your responses will be confidential. Although the survey asks for the name of your agency, no reports about this project will contain your agency name. We will not collect any personal information about you as an individual.

If you have questions about this study, you may contact Allard Dembe at (614) 292-2129. Dr. Dembe is the principal investigator in charge of this study. The Ohio State University Office of Responsible Research Practices is overseeing this study. You may contact Ms. Sandra Meadows from the Office of Responsible Research Practices about your rights as a research participant at (800) 678-6251.

You can complete the survey all at once or over several days. The survey will be available until <<Date>> so you can come back to it if you don’t have time now. To come back to the survey you will need to return to this e-mail and click on the link again. You may skip any questions you do not feel comfortable answering. You provide your consent to participate on behalf of your agency by selecting “Yes” below, and by completing and submitting the survey.

Thank you for taking the time to help with research that may improve the lives of individuals with mental illness.

Do you consent to complete this survey?
Agency Leader Survey

CMHA Administrator Survey
Consent and Survey Introduction
Factors Associated with Client Satisfaction at Community-based Mental Health Agencies in Ohio

Do you consent to allow client and case manager recruitment.
- 1 Yes
- 0 No
- 97 Not applicable

Do you consent to participate in this survey on behalf of your agency?
- 1 Yes
- 0 No

Client Satisfaction

1. Does your agency seek client input on agency services, procedures, and major changes?
   - 1 Yes, always
   - 2 Yes, sometimes
   - 0 No
   - 98 Other response (Please specify): ___________

2. Does your agency have a written policy requiring the collection of client satisfaction data (e.g. in the agency strategic plan, program evaluation policy, contractual document, governing board rules, etc).
   - 1 Yes
   - 0 No
   - 98 Other response (Please specify): _____

3. How essential are client satisfaction data to your agency’s evaluation of its services?
   1. Essential to the evaluation of services
   2. Useful for evaluation, but not essential
   3. Unrelated to the evaluation of services
   4. Detrimental to the evaluation of services
      - 98 Other response (Please specify):

4. Has your agency or other organization collected data on how satisfied clients are with the services they receive at your agency?
   - 1 Yes, client satisfaction data are collected
   - 0 No, client satisfaction data are not collected
   - 98 Other response (Please specify): ___________

If “No...” Then Skip To 15
If “Yes...” Go to next question
If “Other...” Go to next question
5. Is client satisfaction data collected by your agency or by an outside organization?
   1. Collected by our agency
   2. Collected by an outside organization
   3. Collected by our agency and an outside organization
      ☐ 98 Other response (Please specify): ______

If “Collected by an outside organization” Go to 6
If any other answer Go to 7

6. In the previous question you indicated that an outside organization collects client satisfaction data for your agency, please specify the organization(s). (Check all that apply.)
   
   ☐ The Ohio Department of Mental Health and Addiction Services
   ☐ The local ADAMH board
   ☐ National Alliance for Mental Illness (NAMI)
   ☐ Provider Association
   ☐ A university
   ☐ A private firm
   ☐ Other response (Please specify): ______________________

7. At what point during services are client satisfaction data collected?
   
   ☐ Only at the beginning of services
   ☐ Only at the completion or termination of services
   ☐ At multiple points during or after services
   ☐ Other response (Please specify): ______________________

If answer is “At multiple points during or after services” Go to 8
All other answers Go to 9

8. How often do you collect information on whether clients are satisfied with services?
   
   ☐ Every day to every week
   ☐ Every 2-3 weeks to every month
   ☐ Every 2-3 months to every 6 months
   ☐ Once or twice a year
   ☐ Other response (Please specify): ______________________

9. What method does your agency use to collect client satisfaction data from clients? (Check all that apply.)
   
   ☐ Focus Groups
   ☐ Interviews
   ☐ Surveys or Questionnaires (developed by your agency)
   ☐ Surveys or Questionnaires (developed by other organizations)
   ☐ Other response (Please specify): ______________________

If answer contains “Surveys or Questionnaires” Go to 10
All other answers Go to 13
10. How often does your agency use the same survey or questionnaire to collect client satisfaction data?

☐ Always
☐ Sometimes
☐ Never
☐ Other response (Please specify): ____________________

11. Are there open ended response options on the survey(s) your agency uses to collect client satisfaction data? "Open-ended" means responses where clients may write in an answer in their own words.

☐ Yes
☐ No
☐ Other response (Please specify): ____________________

12. Please indicate which one or more of the following surveys or questionnaires your agency uses to collect client satisfaction data?

<table>
<thead>
<tr>
<th>Survey/Instrument</th>
<th>Use</th>
<th>Do not Use</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charleston Psychiatric Outpatient Satisfaction</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Client Satisfaction Questionnaire (CSQ)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Empowerment Scale</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Experience of Care and Health Outcomes (ECHO) Survey</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Kentucky Consumer Satisfaction Instrument</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Mental Health Statistics Improvement Program (MHSIP)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Outcome Rating Scale (ORS)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Perception of Care survey</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Verona Service Satisfaction Scale</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other response (Please specify):</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
13. After they are collected, does your agency use client satisfaction data to do any of the following?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>We share the data with stakeholders</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We place some or all of the data on your agency website</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We use the data in marketing educational materials</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We use the data for quality improvement processes</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We incorporate the data in staff trainings</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We use the data to change services</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We include the data in applications for grants or other funding</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other response:</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

If answer contains “We share the data...” Go to 14.
All other answers go to 15

14. After they are collected, with whom does your agency share client satisfaction data?

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Yes</th>
<th>No</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local county ADAMH Board</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The Ohio Department of Mental Health and Addiction Services</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other funders</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Your agency board or agency leaders</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Non-Management Employees</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Clients, families, and/or advocates</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other response (Please specify):</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

15. On a scale of "0" to "10" with "0" meaning "not at all important" and "10" meaning "very important," on which topics is it most useful to get feedback from clients? Please rate each response using the numbers 0 to 10.

- ☐ Clients' interactions with staff
- ☐ Service outcomes
- ☐ Continuity of services
- ☐ The availability of services
- ☐ Unmet needs
- ☐ Other response (Please specify):

196
16. Do you think your agency would want guidance or support on how to use client satisfaction data to change services?

☒ Yes
☒ No, agency already has guidance or support
☒ No, agency would not want guidance/support
☒ Other response (Please specify): ____________________

Case Managers

Instructions: The next few questions are about employees who provide Community Psychiatric Supportive Treatment (CPST) and who may or may not have other job duties. You may refer to these employees as case managers, care coordinators, or service coordinators. In the following questions these employees are called case managers.

17. Please estimate the number of case managers who provide mental health services to adults at your agency? Please include full and part time case managers at all agency sites.

______ Number case managers

18. Approximately what percent of case managers at your agency work less than 35 hours per week? Please enter a number between 0-100.

______ Percent < 35 hours.

19. How are case managers at your agency compensated? (Check all that apply).

☐ Hourly
☐ An annual salary
☐ Per encounter or billable unit
☐ Other response (Please specify): ____________________

20. What is the estimated average hourly rate of pay for case managers in your agency?

☒ $7.95 - $15.99
☒ $16.00 - $24.99
☒ $25.00 - $33.99
☒ $34.00 - $42.00
☒ $43 or more
☒ Other response (Please specify): ____________________

21. What is the average caseload of adult clients to each case manager at your agency?

☒ 1-14
☒ 15-20
☒ 21-25
☒ 26-60
☒ 31 or more
☒ Other response (Please specify): ____________________
**Agency Characteristics**

*Instructions: The following are general questions about your agency.*

22. Is cultural competency or cultural sensitivity training required for some or all agency employees?

- Yes, training is required for all agency employees
- Yes, but training is only required for some employees
- Training is offered but not required
- No, training is not required
- Other response (Please specify): ____________________

23. Is achieving or maintaining recovery orientation a strategic goal of your agency? Recovery here means, “a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential”

- Yes
- No
- Other response (Please specify): ____________________

24. Are any agency managers or executives trained to use quality or process improvement tools? (Examples include Six Sigma, LEAN, Total Quality Management, Continuous Quality Improvement, PDCA, Root Cause Analysis).

- Yes
- No
- Other response (Please specify): ____________________

25. Please indicate which of the following online tools, if any, your agency uses to interact with clients, staff, or the general public.

<table>
<thead>
<tr>
<th></th>
<th>Use to interact with clients</th>
<th>Use to interact with employees</th>
<th>Use to interact with the general public</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency's website</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Blog</td>
<td>☐</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>E-mail</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>Facebook</td>
<td>☐</td>
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<tr>
<td>Google+</td>
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<tr>
<td>LinkedIn</td>
<td>☐</td>
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<tr>
<td>Twitter</td>
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<tr>
<td>YouTube</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other response (Please specify):</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
26. For approximately how many years has your agency provided mental health services?

- 0 - 5 years
- 6 - 15 years
- 16 - 25 years
- 26 - 35 years
- 36 - 45 years
- 46 or more years
- Other response (Please specify); ____________________

27. What is the average number of unique adults with mental illness served each year by your agency? (Please include all agency sites).

- 1-100 clients
- 101-250 clients
- 251-500 clients
- 501-1000 clients
- 1001-1500 clients
- 1501-2000 clients
- 2001 or more clients

28. Please indicate the approximate percent of funding your agency receives from the following sources for mental health services. The total should add to 100%.

- Local Board
- Medicaid
- State Government
- Private Insurance
- Other response (Please specify):

29. What is the name of your agency? (Please enter your agency's name below).

________________________________________________________________

This is the end of the survey. Thank you for taking the time to answer these questions. You may contact Chris Wilks at wilks.30@osu.edu if you have questions about this survey.
APPENDIX C: CLIENT RESEARCH DOCUMENTS

Client Recruitment Poster

THE OHIO STATE UNIVERSITY

PARTICIPANTS NEEDED FOR RESEARCH ON SATISFACTION WITH SERVICES

• We are looking for volunteers to take part in a research survey on satisfaction with services.

• The survey is for individuals who use mental health services at this agency.

• The survey is anonymous and will not ask for your name.

• The survey should take no more than 10 minutes.

• The survey is being conducted by researchers from the College of Public Health and The Ohio State University.

• It is up to you whether you participate. You do not have to take this survey.

• Your services will not be affected if you do not take this survey.

• There is no direct benefit or payment for taking this survey.

• You may ask any questions you have about this research survey.

• To show appreciation for completing the survey, you will receive a gift card for $5.

• The person in charge of this research is Allard Dembe. His number is (614) 292-2129.

• If you have questions about your rights as a research participant, you may call Ms. Sandra Meadows in the Office of Responsible Research Practices at (800) 678-6251.

Thank you for your time
Client Recruitment Form

Hello,

My name is Chris Wilks. I am a PhD student in the College of Public Health at the Ohio State University (OSU). This form is to ask you to participate in a study I am doing about how satisfied clients are with the services provided at this agency. The survey has 23 questions. If you are interested in taking the survey, we will go through a consent process to make sure you understand this study and to get your permission. The survey and the consent together should take 10-15 minutes. You may skip any questions you do not want to answer. To show my appreciation, you will receive a $5 gift card if you participate in the survey.

I will not collect your name or other information that can be used to tell who you are. When I write a report about this survey, I will talk about everybody as a group. I will not talk about your personal views. This study has been approved by the Ohio State University Institutional Review Board. The managers at this agency have told me it is okay to speak with you. You do not have to participate. Your services will not change if you decide not to participate. I appreciate your time.

Thank you.

Client Consent Form

Client Consent Form and Information Disclosure

Factors Associated with Client Satisfaction at Community-based Mental Health Agencies in Ohio

What is this about?

This form is to tell you about a research study we want you to participate in. We will ask you to answer survey questions about your satisfaction with services at this agency. We will use the answers you give to figure out what things at this agency help clients be more satisfied. You get to choose whether you answer the survey questions. You can say “no” for any reason. You don’t have to tell us why you say no. I am a student working with the person in charge of this study, Dr. Allard Dembe from the Ohio State University.

Who is being asked to complete the survey?

We are asking clients of this agency who are 18 and older to answer the survey questions.

Who will get information about me if I participate in the survey?

201
Researchers at the Ohio State University will collect the answers and study them. Your name will not be on the survey. So no one will be able to tell that it was you who gave the answers.

**What are the possible risks or discomfort involved from completing the survey?**

The survey will not put you in any danger. There is a small chance that when you think about your services here you may remember something that upset you in the past. We don’t think this is likely to happen. But if you do feel upset or remember feeling upset, you may stop the survey at any time. You will not lose any benefits or services to which you would otherwise be entitled if you decide not to participate in this survey.

**How much time will I need to give?**

We will spend about 10 minutes helping you understand everything on this form. If you decide to take the survey, it will take about 10 minutes. In total, this should take no more than 15-20 minutes of your time. You only have to take the survey one time.

**What are the possible benefits and costs from being in this study?**

You will not be paid or get other benefits for taking this survey. If you participate in this survey, you will get a gift card for $5 to Walmart.

**How will my privacy be protected?**

One way we protect your privacy is by not asking for your name on this form or on the survey. We also will not ask you to sign your name to get the gift card. We will make sure only a small number of people see your survey. In rare instances, persons who may have access to your survey results include staff from the Office for Human Research Protections in the Department of Health and Human Services, or other federal, state, or international regulatory agencies, the Ohio State University Institutional Review Board, and Office of Responsible Research Practices. The results from this research study may be published. But your name will not be in any of the results. All information will remain confidential except where disclosure is required by law.

**May I withdraw, at a future date, my consent for participation in this research study?**

If you decide to take the survey and then change your mind, you may withdraw your consent. If you want to withdraw your consent, you need to do it before you hand in your survey. After that, we will not be able to tell which survey is yours because we are not collecting any names.

**What if I have questions about this study, the survey, or about my rights as a research participant?**

You have the right to ask, and have answered, any questions you may have about this research study. If you have questions, concerns, complaints, or feel you have been harmed because this
study, please call the principal researcher, Dr. Allard Dembe at (614) 292-2129. If you have any questions about your rights as a research participant, you may call Ms. Sandra Meadows in the Office of Responsible Research Practices at (800) 678-6251.

Thank you for reviewing this form. Please ask us any additional questions you have about this research. Please read the consent statement below. You may keep a copy of this form in case you want to look at it later.

CONSENT

I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research study.

Your provide consent by completing the survey and turning it in to researchers from the Ohio State University. You may sign this form if you want to, but your signature is not expected or required.

Client Verbal Assent Form

Verbal Assent Script

Client

I want to tell you about a survey we are doing for research. A research survey is usually done to understand how things work. In this study, we want to find out if you are satisfied with services. If it is okay with you, I will ask you to answer a few questions about how you feel about services at this agency and about your personal life. You do not have to answer these questions if you do not want to do so.

There is a small chance that the questions on this survey may make you remember a bad experience. If at any time during this survey you feel uncomfortable, you can stop. Your services will not be affected if you stop taking the survey or if you do not take the survey at all. You do not have to tell us a reason for not wanting to take the survey. If you decide not to take this survey, you will not lose any benefits or services to which you would otherwise be entitled. You will not get any money or help to take this survey, but we are able to give you a small gift card ($5) for your time. Also with your help, we may learn something that will help others who use services.

You do not have to be in this study. It is up to you. You can say “no” now or you can even change your mind before you hand in the survey. All you have to do is tell us. No one will be mad at you if you change your mind.

When we tell others about the results of this survey, we promise never to use your name. Your parent(s) or legal guardian said it is okay for you to take this survey. But, you don’t have to if you don’t want to. If you have questions, please ask them now or at any time.
Do you want to answer the questions on the survey?  □ Yes  □ No

**Client Interactive Consent Feedback Form**

**Client Interactive Consent Questions**

Instructions: Questions should be asked after the consent has been read to or read by the prospective participant(s). Indicate whether the participant was able to answer the question correctly after the first, second or third attempt at explanation. Participants who are not able to grasp a concept after a third attempt should be excluded from the study. Please note any questions the participant(s) asks about the project.

1. Please tell me in your own words what this survey is all about?

2. Who is conducting this survey?

3. What will you have to do?

4. What will happen to you if you decide not to take this survey?

5. What benefits will you get for taking this survey?

6. Explain how this survey could harm you?

7. Will your agency be given your answers on the survey?

8. What will be done with the information that is collected about you?

9. Will your name and other information be printed in reports?

Participant questions:
CLIENT SATISFACTION QUESTIONNAIRE
CSQ-8

Please help us improve our program by answering some questions about the services you have received. We are interested in your honest opinions, whether they are positive or negative. Please answer all of the questions. We also welcome your comments and suggestions. Thank you very much. We appreciate your help.

CIRCLE YOUR ANSWERS

1. How would you rate the quality of service you received?

   4. Excellent  3. Good  2. Fair  1. Poor

2. Did you get the kind of service you wanted?

   1. No, definitely not  2. No, not really  3. Yes, generally  4. Yes, definitely

3. To what extent has our program met your needs?

   4. Almost all of my needs have been met  3. Most of my needs have been met  2. Only a few of my needs have been met  1. None of my needs have been met

4. If a friend were in need of similar help, would you recommend our program to him or her?

   1. No, definitely not  2. No, I don’t think so  3. Yes, I think so  4. Yes, definitely

5. How satisfied are you with the amount of help you received?

   1. Totally dissatisfied  2. Indifferent or mildly dissatisfied  3. Mostly satisfied  4. Very satisfied

6. Have the services you received helped you to deal more effectively with your problems?

   4. Yes, they helped a lot  3. Yes, they helped somewhat  2. No, they really didn’t help  1. No, they seemed to make things worse

7. In an overall, general sense, how satisfied are you with the service you received?


8. If you were to seek help again, would you come back to our program?

   1. No, definitely not  2. No, I don’t think so  3. Yes, I think so  4. Yes, definitely
Questions About You

The next set of questions are about you and your personal life. You can skip any questions you don’t want to answer.

9) What is your sex?
   a. Male
   b. Female
   c. Other
   d. Don’t Know
   e. Prefer not to answer

10) What is your age range?
    a. 18-29 years
    b. 30-49 years
    c. 50-64 years
    d. 65+ years
    e. Don’t Know
    f. Prefer not to answer

11) What is the highest level of education you completed?
    a. Grades 9-12
    b. Associate degree, or vocational training
    c. Completed 4yr College
    d. Graduate or professional school
    e. Don’t Know
    f. Prefer not to answer

12) What is your relationship status
    a. Single
    b. In a relationship
    c. Don’t Know
    d. Prefer not to answer

13) What is your race?
    a. White/Caucasian
    b. Black/African American
    c. Asian
    d. Native Hawaiian or Pacific Islander
    e. Mixed or Other Race
    f. Don’t Know
    g. Prefer not to answer

14) Do you have any ongoing medical conditions (Examples are diabetes, heart disease, hypertension COPD, obesity, chronic lung disease)
    a. YES
    b. NO
    c. Don’t Know
    d. Prefer not to answer

15) Altogether, approximately, how long have you received services from this agency?
a. Between 1 day and 1 week  
b. Between 1 week and 1 month  
c. Between 1 month and 3 months  
d. Between 3 months and 6 months  
e. Between 6 months and 1 year  
f. Between 1 year and 5 years  
g. More than 5 years  
h. Don’t Know  
i. Prefer not to answer

16) Altogether, approximately, how long have you been receiving mental health services in your lifetime?
   a. Between 1 day and 1 month  
   b. Between 1 month and 3 months  
   c. Between 3 months and 6 months  
   d. Between 6 months and 1 year  
   e. Between 1 year and 5 years  
   f. Between 5 years and 10 years  
   g. More than 10 years  
   h. Don’t Know  
   i. Prefer not to answer

17) In general, how would you rate the mental health services you have received over your lifetime?
   a. All were helpful  
   b. Most were helpful  
   c. Some services were better than others  
   d. Few were helpful  
   e. None were helpful  
   f. Don’t Know  
   g. Prefer not to answer

18) At this agency how often are you asked to give your feedback on services?
   a. Regularly  
   b. Sometimes  
   c. Rarely  
   d. Never  
   e. Don’t Know  
   f. Prefer not to answer

19) Thinking about the last week, how much would you say your mental health concerns affected your ability to do most things on your own?
   a. No impact on my ability  
   b. A little impact on my ability  
   c. Some impact on my ability  
   d. A big impact on my ability  
   e. I have not been able to do most things on my own  
   f. Don’t Know  
   g. Prefer not to answer

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20) How worried are you that your responses on this survey will affect your services?
   a. Not worried at all
   b. A little worried
   c. Very worried
   d. Don’t Know
   e. Prefer not to answer

21) * Do you feel like you are in control of your behavior, and thoughts right now?
   a. Yes, definitely so
   b. Yes, for the most part
   c. Generally so
   d. Not too well
   e. Not at all
   f. Don’t Know
   g. Prefer not to answer

22) What do you think about people who complain?
   a. People should not complain
   b. It is okay for people to complain when things are not going right
   c. It depends on the situation
   d. Complaining often necessary for people to get what they want
   e. Don’t Know
   f. Prefer not to answer

23) How important is it to do things to please others?
   a. Very important
   b. Somewhat important
   c. It depends on the situation
   d. A little important
   e. Not important
   f. Don’t Know
   g. Prefer not to answer

This is the end of the survey. Thank you for taking the time to answer these questions

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1 Adapted from the General Well-Being Schedule (McDowell, 2006)
Client Gift Card Receipt

Human Subject Payment Receipt

Paid To: Client at: $10.00

Subject Number
Check number if paid by check

Gift card number from back of gift card if paid by gift card

Human Subject Protocol #: 20140054 Project #: 60040466

Payee Signature:
Authorized By:

Please note that this payment is taxable income and the recipient is required to report this amount on federal and state tax returns.

This receipt should be maintained, confidentially, in the project files.
APPENDIX D: CASE MANAGER RESEARCH DOCUMENTS

Case Manager Recruitment E-mail and Form

Case Manager Recruitment Form

Hello,

My name is Chris Wilks. I am a PhD student in the College of Public Health at the Ohio State University (OSU). This form is to ask you to participate in my dissertation research project. My dissertation aims to understand what factors affect client satisfaction at community-based mental health agencies in Ohio. I am conducting a survey, which will ask you whether you think clients at this agency are satisfied with services. The survey has 23 questions.

I will be collecting satisfaction information from clients and from case managers. I am particularly interested in case managers’ views about client satisfaction. At the end of the study I hope to be able to report on how mental health agencies use client satisfaction data, how much agreement there is between case managers and clients on client satisfaction, and how much funding levels affect client satisfaction. I hope agencies can use this information to support case managers and to allocate resources.

Please read the consent form. The survey is optional, and you do not have to complete it. The survey is also anonymous. I will know what agency you come from but will not know your name. You may skip any questions that you do not want to answer. None of the reports produced from this research will have information that can be used to identify you as an individual. I have received permission from your agency director to ask you to complete this survey, but your participation is voluntary.

Thank you.
Case Manager Consent Form

Case Manager Consent Form and Information Disclosure
Factors Associated with Client Satisfaction at Community-based Mental Health Agencies in Ohio

What is this about?
This form is to obtain your permission to participate in a research study. The study is to understand what sorts of factors at your agency affect client satisfaction. You will be asked to complete a survey about client satisfaction with services at this agency. It is your choice to participate in the study. You may refuse to complete the survey, for any reason, without affecting your job.

Who is being asked to complete the survey?
Case managers of various mental agencies are being asked to complete the survey. Participation is voluntary. There is no penalty or loss of benefits that you would otherwise be entitled to, if you decide not to participate.

Who will get information about me if I participate in the survey?
Researchers at the Ohio State University will collect and analyze the survey data. Your name will not be on the survey so no one will be able to identify you individually.

What are the possible risks or discomfort involved from completing the survey?
There are minimal risks associated with this study. There is a small possibility that you may experience negative emotions or recall an unpleasant experience. If this happens, you may stop participating.

How long will I need to participate in this study?
All you have to do is complete this survey once. There are no additional requirements for participation. Giving consent and taking the survey will take less than 10 minutes.

What are the possible benefits and costs from being in this study?
There are no direct benefits to you for participating. However, we hope this research will help improve mental health services.

How will my privacy be protected?
We are protecting your privacy by not asking you to use your name on the survey or on any other document we collect. You should know that in rare instances, persons who may have access to your survey results include staff from the Office for Human Research Protections or other federal, state, or international regulatory agencies, the Ohio State University Institutional Review Board, and Office of Responsible Research Practices. The data from this study may be published.
However, you will not be identified by name. All information will remain confidential except where disclosure is required by law.

May I withdraw, at a future date, my consent for participation in this research study?

You can discontinue participation at any time for any reason. You may withdraw your consent for participation in this research study at any time before you submit your answers. After that, it will be difficult to distinguish your responses from others who are participating in the study since no names will be collected.

What if I have questions about this study, the survey, or about my rights as a research participant?

You have the right to ask, and have answered, any questions you may have about this research study. If you have questions, concerns, complaints, or feel you have been harmed because of study participation, please call the principal researcher, Dr. Allard Dembe at (614) 292-2129. If you have any questions about your rights as a research participant, you may call Ms. Sandra Meadows in the Office of Responsible Research Practices at (800) 678-6251

CONSENT

I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research study.

You can withdraw your consent at any time before submitting your survey answers. You provide your consent to participate by completing the survey and submitting it to researchers from the Ohio State University. You may sign this form if I want to, but your signature is not expected or required.
Case Manager Survey

Case Manager Perceptions of Client Satisfaction

Instructions: The perceptions of case managers are important to the effective treatment of individuals with mental illness. The following questions ask you to give your perception of client satisfaction with services at this agency. When answering the questions, please think broadly about all clients who use services here and not just the clients you currently serve directly. Please answer the questions to the best of your abilities. Please read each question and select an applicable answer. If you prefer not to answer a question, you may skip it. You may contact Chris Wilks at wilks.30@osu.edu or (614) 902-2396 with questions or comments.

Q1 How would you rate the quality of services clients have received at this agency?
   - Excellent
   - Good
   - Fair
   - Poor
   - Other response (Please specify): ________________________________

Q2 Do clients get the kinds of service they want at this agency?
   - No, definitely not
   - No, not really
   - Yes, generally
   - Yes, definitely
   - Other response (Please specify): ________________________________

Q3 To what extent has this agency met the needs of clients?
   - Almost all of their needs have been met
   - Most of their needs have been met
   - Only a few of their needs have been met
   - None of their needs have been met
   - Other response (Please specify): ________________________________

Q4 Would clients recommend their friends to this agency?
   - No, definitely not
   - No, not really
   - Yes, generally
   - Yes, definitely
   - Other response (Please specify): ________________________________

Q5 How satisfied are clients with the amount of help they have received at this agency?
   - Quite satisfied
   - Indifferent or mildly satisfied

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Mostly satisfied

Very satisfied

Other response (Please specify): _________________________________

Q6 Have the services clients received at this agency helped clients deal more effectively with their problems?
   o Yes, they helped a great deal
   o Yes, they helped somewhat
   o No, they really didn’t help
   o No, they seem to make things worse
   o Other response (Please specify): _________________________________

Q7 In an overall, general sense, how satisfied are clients with the services they receive at this agency?
   o Very satisfied
   o Mostly satisfied
   o Indifferent or mildly dissatisfied
   o Quite dissatisfied
   o Other response (Please specify): _________________________________

Q8 If clients were to seek help again would they come back to this agency?
   o No, definitely not
   o No, I don’t think so
   o Yes, I think so
   o Yes, definitely
   o Other response (Please specify): _________________________________

Q9 On a scale of 0 to 10 with 0 meaning "not helpful at all", and 10 meaning "very helpful", how helpful would you say services at this agency have been in helping clients in the process of recovery from mental illness? Recovery here means, "a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential." Please circle a number.

Not helpful at all          0  1  2  3  4  5  6  7  8  9  10  Very helpful

Instructions: The following questions are about you as an individual.

Q10 For how long have you worked for this agency?
   o Less than year
   o More than one year but less than five years
   o More than five years but less than 10 years
   o 10 or more years
   o Other response (Please specify): _________________________________
Q11 For how long have you worked in the field of behavioral health (mental health and/or substance abuse)?
   - Less than year
   - More than one year but less than five years
   - More than five years but less than 10 years
   - 10 or more years
   - Other response (Please specify): ____________________________

Q12 What do you think about complaints?
   - Complaints are always required for people to get what they want
   - Complaints are sometimes required for people to get what they want
   - Complaints are never required for people to get what they want
   - Other response (Please specify): ____________________________

Q13 How important is it to you to do things to please others?
   - Very important
   - Neither Important nor Unimportant
   - Not important
   - Other response (Please specify): ____________________________

Q14 How worried are you that your responses to this survey will negatively affect your job?
   - Not worried at all
   - A little worried
   - Very worried
   - Other response (Please specify): ____________________________

Q15 On a scale of 0 to 10, with 0 meaning "not concerned at all" and 10 meaning "very concerned," how concerned about your mental health have you been in the last month? Please circle a number.

   Not concerned at all  0  1  2  3  4  5  6  7  8  9  10  Very Concerned

Q16 On a scale of 0 to 10, with 0 meaning "not concerned at all" and 10 meaning "very concerned," how concerned about your physical health have you been in the last month? Please circle a number.

   Not concerned at all  0  1  2  3  4  5  6  7  8  9  10  Very Concerned

Q17 Do you have any chronic physical illness or condition (Some examples include arthritis, cancer, chronic pain, diabetes, heart disease, and obesity)?
   - Yes
   - No
   - Other response (Please specify): ____________________________
Q18 What is the highest level of education you have completed?
   o High school
   o Some college or technical school
   o Associate degree or technical degree
   o Four year college
   o Graduate or professional school
   o Other response (Please specify): ____________________________

Q19 What is your gender?
   o Male
   o Female
   o Trans-gender
   o Other response (Please specify): ____________________________

Q20 What is your age range?
   o 18-29 years
   o 30-49 years
   o 50-64 years
   o 65 or more years
   o Other response (Please specify): ____________________________

Q21 With what race do you identify?
   o Asian
   o Black / African American
   o White/ Caucasian
   o Native Hawaiian or Pacific Islander
   o Mixed or other race (Please specify): ____________________________

Q22 What is your relationship status?
   o Single
   o In a relationship
   o Other response (Please specify): ____________________________

This is the end of the survey. Thank you for taking the time to answer these questions.
   ** Your input is very valuable. **
You may contact Chris Wilks at wilks.30@osu.edu or (614) 902-2396 if you have questions.