MENTAL HEALTH PARITY AND SUBSTANCE DEPENDENCE TREATMENT: PATIENT AND PUBLIC PERSPECTIVES WITH IMPLICATIONS FOR HEALTH POLICY IN THE UNITED STATES.

by

APRIL LYNN BROWN

(Under the Direction of Merrill A. Norton)

ABSTRACT

Substance dependence is a major epidemic in the United States. There is a need for getting those with substance dependence issues into treatment, as well as retaining patients in treatment for the full course of care. Mental health policy in the United States has shaped mental health care, especially substance dependence treatment. This study examined parity-related barriers that patients in treatment for substance dependence face. An instrument was developed and psychometrically validated to examine these barriers. Patients felt that mental health issues should be treated on par with other physical health issues, and that pharmacotherapies should be available to patients in treatment for substance dependence. Patients using health insurance to pay for substance dependence treatment reported fewer health insurance and payment barriers when compared to those not using health insurance. Additionally, patients using any self-pay for treatment costs reported significantly higher health insurance and payment barriers, and 28% of patients reported that paying for treatment would be their biggest barrier to completing treatment.

Further, the same instrument was given to a subset of the general public in order to assess perceived barriers from potential patients. The general public perceived higher payment and health insurance barriers to paying for substance dependence treatment than patients currently in treatment for substance dependence. Half of the participants from the general public sample expressed that paying for treatment would affect their decision to seek treatment if they needed it. The general public participants also expressed demand for the availability of pharmacotherapies to treat substance dependence. The findings of this study illustrate the perceived opinions and barriers from both substance dependence patients and potential patients relating to mental health parity legislation. These findings can highlight areas that may cause patients to become noncompliant with treatment for substance dependence or prevent someone with a substance dependence issue from seeking treatment.

INDEX WORDS: Mental health parity, substance dependence, mental health policy, substance abuse, pharmacotherapy, mental health insurance.

MENTAL HEALTH PARITY AND SUBSTANCE DEPENDENCE TREATMENT: PATIENT AND PUBLIC PERSPECTIVES WITH IMPLICATIONS FOR HEALTH POLICY IN THE UNITED STATES.

by

APRIL LYNN BROWN

B.A., Princeton University, 2005

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2010

MENTAL HEALTH PARITY AND SUBSTANCE DEPENDENCE TREATMENT: PATIENT AND PUBLIC PERSPECTIVES WITH IMPLICATIONS FOR HEALTH POLICY IN THE UNITED STATES.

by

APRIL LYNN BROWN

Major Professor:	Merrill Norton
Committee:	Matthew Perri Monica Gaughan

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
May 2010

TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

Substance dependence, or addiction, is a widespread epidemic in the United States. Nearly 10% of the population qualifies as having an addictive disorder according to the American Psychiatric Association's, Diagnostic and Statistical Manual of Mental Disorders, IV (SAMHSA 2008). While there are effective treatments and pharmacotherapies available to treat substance dependence, barriers to treatment entry, retention, and completion continue to persist. Further, only 44% of all discharges from treatment facilities completed treatment in 2005 (SAMHSA 2008) highlighting the importance of determining obstacles to keeping patients in treatment. There are countless reasons why patients do not complete treatment such as stigma, poor social support, fear, privacy/employment concerns, not ready to stop using, and various others. This study focuses on financing or paying for treatment as one of the contributing obstacles patients or potential patients may face.

Mental health policy and policy specific to substance dependence treatment has played a critical role in shaping some of the barriers for the individual patient, more specifically, in financing treatment. Mental health parity legislation refers to policies regarding mental health benefits in private health insurance. Generally, parity means equality for mental health benefits compared to other physical or surgical benefits. The overall purpose of the current study was to examine the patient's perspective about paying for treatment, health insurance, substance dependence medications, and

completing treatment. These results were then compared to the general public (who represent potential patients) in order to address disparities and influence policy. Financing treatment is a confusing, complex maze of private and public funding, policies, managed care, facility type and various other entities. Thus, a study examining the patient's and public's perspectives and attitudes towards financing care and how much financing may impede treatment entry or completion is a unique analysis that has been overlooked, especially in light of parity legislation.

CHAPTER 2

LITERATURE REVIEW

The Extent of Illicit Drug and/or Alcohol Dependence in the United States

The 2008 National Survey on Drug Use and Health found that 22.2 million people in the United States (8.9% of the total population) met the criteria as having a substance dependence or abuse problem as classified by the *Diagnostic and Statistical Manual of Mental Disorders, IV* (DSM-IV). This rate has not changed and has remained stable since 2002 (SAMHSA 2009). Of these, 3.1 million people had a problem with both illicit drugs and alcohol, 3.9 million people had a problem with only illicit drugs, and 15.2 million people had a problem with only alcohol. While there are effective treatment programs available, the primary reason people who needed treatment did not seek care for an illicit and/or alcohol problem was a lack of insurance or funds for treatment, see figure 2.1 (SAMHSA 2008; SAMHSA 2009).

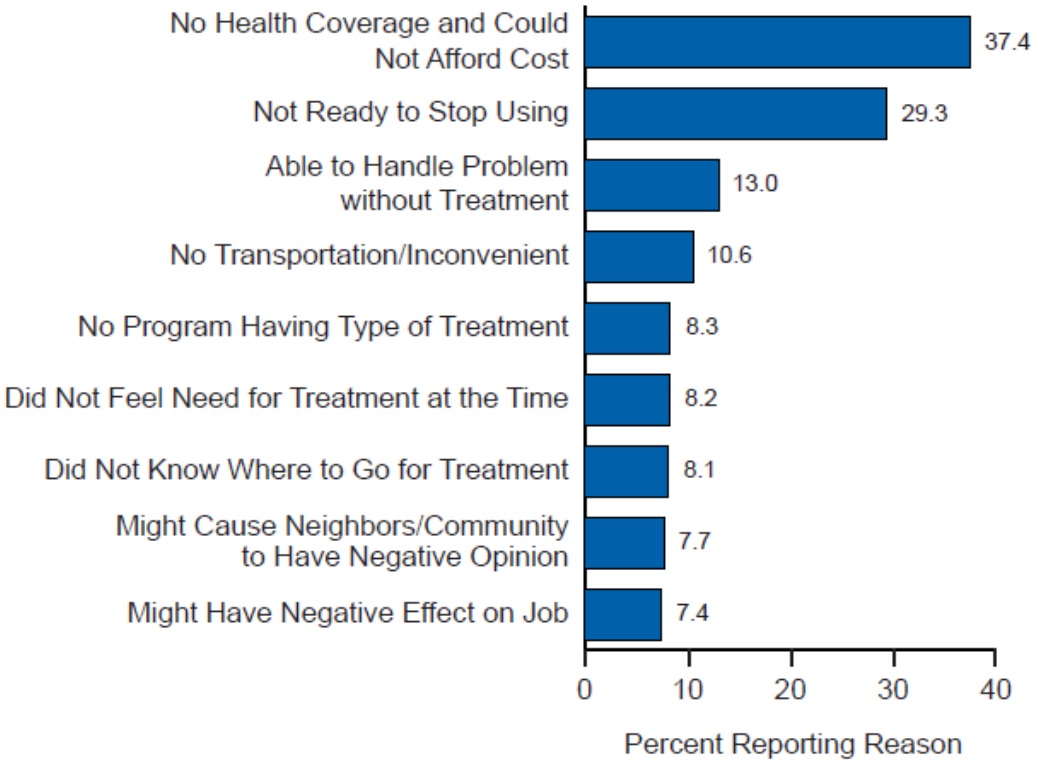


Figure 2.1: Reasons Given for Needing Treatment But Not Seeking Care, SAMHSA 2005-2008.

Although almost 50 million Americans have no health insurance (Davis 2007), a lack of health insurance is not the only reason people have no health coverage for substance dependence treatment or why they cannot afford costs. Many aspects of substance dependence treatment, specifically concerning financing treatment, are shaped by health policy. Thus, policy regarding mental health and substance dependence coverage has, and will continue to play, a critical role in the treatment of addictions in the United States.

Mental Health Policy in the United States

The Past

Mental health parity, in general, aims to alleviate disparities that exist in the coverage of mental health benefits compared to other medical or surgical health benefits in insurance. Policy regarding mental health coverage began to emerge in the decades following World War II when social insurance practices became increasingly popular. President John F. Kennedy brought some of the ideas of mental health coverage into the spotlight in the 1960's. He made the first attempt to establish parity or equality in coverage for a few mental health benefits compared to other medical coverage (Barry 2006). Following Kennedy's lead, states began mandating *minimum* levels of coverage for psychiatric disorders only, and mental health policy began to gain political vigor, both positive and negative.

However, it was not until 1996 that a bill was passed at the federal level concerning the coverage of mental health illnesses. The Mental Health Parity Act of 1996 was authored in a bipartisan alliance between Senators Pete Domenici (R-NM) and Paul Wellstone (D-MN). The law became effective January 1, 1998, and it called for general parity between mental health benefits and medical/surgical benefits in terms of annual or lifetime spending amounts. Notably, the act did not include specific language for substance dependence (DHHS 1996).

Even though federal legislation called for parity in mental health coverage, benefits remained limited. In a survey of more than 1600 employers offering mental health benefits, compliance with the 1996 federal legislation did not increase employees' access to mental health services (GAO 2000). Though plans provided parity

in dollar amounts for mental health care, employers adjusted other features of mental health coverage to specifically offset the costs imposed by the legislation. Most commonly these new restrictions limited the number of outpatient visits and hospital days, or required patients to burden high cost-sharing responsibilities such as copayments, deductibles, and co-insurance. As a result of the Mental Health Parity Act of 1996, employers and insurers became more restrictive in other features of mental health coverage preventing employees from receiving the care they needed. Various governing bodies deemed the 1996 legislation limited in scope and application, including the United States General Accounting Office and the Substance Abuse and Mental Health Services Administration (Sing et al. 1998; GAO 2000).

Though the Mental Health Parity Act of 1996 may have been limited in scope, many states also passed distinct legislation regarding mental health parity. Each state passed a version of the law, or lack thereof, but typically the parity laws can be grouped into four major categories (Robinson et al. 2006; NAMI):

- Comprehensive Parity: Full coverage of a broad range of mental health conditions and substance dependence illnesses as listed in the DSM-IV. There are no groups that are exempt.
- Full Parity: Covers a range of mental health conditions, but there are limitations or exemptions.
- Limited Parity: Equivalent coverage for a limited range of diagnoses. Many exemptions and exclusions.

- Mental Health Mandates:
  - Mandated if Offered: If a plan does offer mental health benefits, they must be equal to other medical benefits.
  - Mandated Offering: This requires a plan to offer mental health benefits that are equal to other medical benefits. Groups have the option of this plan and premiums are usually higher.
  - Minimum Mandated Benefits: There is a minimum mental health requirement but it is not required to be equal to other medical conditions.

Five states (Connecticut, Maryland, Minnesota, Vermont, and Oregon) passed all-encompassing comprehensive parity laws for mental health and substance abuse without exemptions. Thirty-three states passed parity laws with exemptions or limitations, ten states passed a mental health mandate, and two states, Wyoming and Idaho, have no parity or mandate laws (NAMI 2007). A listing of individual state laws and mandates can be found in Appendix A.

Further, there are some significant exemptions that must be noted in regards to federal and state-level parity laws. Most businesses are exempt from parity requirements if their healthcare costs increase by 1-2%. Also, in the majority of states, there is an exemption for businesses with fewer than 50 employees. Small-business employers are generally not responsible for complying with parity laws, unless there is comprehensive parity with no exemptions. Lastly, there are approximately 82 million Americans who are currently exempt from any state parity laws (APA 2008) under the Employee Retirement Income Security Act of 1974. Section 514 of ERISA states that the statute “supersedes any and all state laws insofar as they relate to any employee

benefit plan (1974)." Thus, any business providing self-funded health insurance has historically been exempt from state parity laws under ERISA. An estimated 37% of the workforce falls under this exemption (Maxfield et al. 2004).

The Present

On October 3rd, 2008 former President George W. Bush signed The Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008 into law. This act was embedded in the Emergency Economic Stabilization Act of 2008 (H.R. 1424). Some important components of the bill are highlighted below:

- Substance Dependence: The bill includes language specific to substance dependence in addition to mental health benefits.
- Equity in Cost-Sharing Requirements: A patient's financial responsibilities, including copayment, co-insurance, and deductibles must be equal for mental health and substance dependence benefits compared to other medical/surgical benefits. The equity requirement in annual and lifetime dollar limits is also still in place.
- Equity in Treatment Limitations: The frequency and number of visits for both inpatient and outpatient care must be similar for mental health and substance dependence benefits as compared to other medical/surgical benefits.
- Out-of-Network Benefits: If a plan offers out-of-network benefits for other medical/surgical benefits, it must also offer them for mental health and substance dependence benefits at equivalent levels.

- Medical Neccessity: Plans have to provide employers and participants the criteria that must be met in order for a treatment to be deemed “medically necessary.”
- Disclosure of Denials to Pay: Plans must disclose to participants why a claim was denied.
- Applies to ERISA-Exempt Plans: The new legislation will also apply to previously exempt ERISA plans.
- Protection of Stronger State Laws: The federal act will not pre-empt any stronger state laws. If a state has a stronger law already in place, that law will remain effective.

Though there are some obvious advantages to the federal law, there are some deficiencies in the law that must be noted. While this bill is the first federal bill to have language specifically for addiction, health insurance plans will retain the ability to decide which diagnoses to cover. There is no mandate for the coverage of all diagnoses within the DSM-IV. Further, the law does not require coverage for mental health and/or substance dependence; it only requires that *if* a plan provides mental health and/or substance dependence treatment that they be provided at parity. There are also some exemptions written into the law including a cost increase exemption of 2% the first year and 1% thereafter, and a small employer exemption of 50 employees or less (Congress 2008). The bill will become effective at the beginning of a plan’s new calendar year following the one year anniversary of the bill. Generally, that would be January 1st, 2010. A timeline of major mental health parity events is located in Appendix B.

The Future

Although the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008 did not mandate coverage for all DSM-IV diagnoses, the bill did call for a Government Accountability Office (GAO) report within three years and then every two years after that regarding compliance with the requirements. The GAO report will include information on which conditions have been covered or excluded from benefit packages, and the extent to which the bill had an impact on costs and the delivery of care for mental health and substance dependence.

Since five states already have comprehensive mental health parity that is in line with H.R.1424, some data is available on the implications of what current legislation will bring. Various studies have examined full mental health parity in the context of the Federal Employee Health Benefit Plan which was mandated under President Clinton and became effective in 2001 (Goldman et al. 2006; Azrin et al. 2007; Barry 2007). Full mental health parity was associated with *significant* reductions in out-of-pocket spending, especially in families with mentally-ill children, without adversely affecting health care costs. Therefore, there is evidence that full mental health parity can increase the financial protection of the individual or family without greatly increasing overall health care costs.

Vermont has one of the most comprehensive mental health and substance abuse laws. The U.S. Department of Health and Human Services published a report on the effects of full parity in Vermont based on costs, behaviors by employers, utilization rates of services, and access to care (Rosenbach et al. 2003). Equality in Vermont covered annual and lifetime limits, copayments, deductibles, co-insurance, visit limitations, and it

covered all illnesses listed in the DSM-IV, including substance abuse disorders. The major findings from full parity in Vermont included:

1. Parity did not cause employers to drop or switch insurance plans.
2. Outpatient access to mental health care improved.
3. Access to substance dependence treatment was more limited after parity.
4. Spending decreased for both insurance payments and out-of-pocket spending by the consumer.
5. Consumers paid a smaller share of total spending.
6. Managed care was important for controlling costs.
7. Awareness of parity was relatively low.

Most of the effects of comprehensive parity in Vermont were positive for both the consumers and the providers. However, the decrease in access to substance abuse treatment must be addressed. The likelihood of inpatient or partial substance abuse treatment was significantly lower after the implementation of comprehensive parity in Vermont, and awareness of parity was low. This result was thought to be partially due to the implementation of more stringent managed care requirements. However, the decrease in access to substance dependence treatment is an important issue. Therefore, this current study addressed both patients' and the general public's perspectives regarding certain access components to substance dependence treatment.

United States Policy Specific to Substance Dependence

Much of the political debate involving mental health benefits concerns the coverage for substance dependence treatment. There is a great deal of societal stigma surrounding substance dependence that leads many to argue against health insurance paying for treatment, which could result in higher premiums for all who are insured. Many politicians and the general public believe that poor personal choices should not be the responsibility of the entire risk pool within the health insurance group. Further, there are many legal implications paralleling substance dependence including illegal drug activity, driving under the influence, violence, etc. The federal legislation of 2008 will now require plans to cover substance dependence treatment at parity, *if* the plans choose to include substance dependence in benefits packages.

Conversely, proponents of better substance abuse policy maintain that substance dependence should be treated equally, ethically, and without discrimination. The National Institutes of Health defines drug abuse and addiction as a "brain disease." They declared that changes in the structure and functioning of the brain occur. Importantly, they state that "what people often underestimate is the complexity of drug addiction – that it is a disease that impacts the brain and because of that, stopping drug abuse is not simply a matter of willpower (NIH 2007)." While there is evidence that drug addiction greatly affects the brain, much of the debate surrounding addiction is the etiology of the disease. There are genetic risk factors that predispose individuals to addiction, people can respond differently to the effects of certain substances, and individuals respond to treatments very differently as is the case with other physical, chronic diseases. The genetic risk factors, pathophysiology, and response to treatments

(both adherence and relapse) of substance dependence were deemed similar to those of type II diabetes mellitus, hypertension, and asthma in adults (McLellan et al. 2000), illustrating that addiction is a chronic disease, not an acute condition. Further, personal choice can play a role in many chronic diseases (weight, lack of exercise, poor hygiene).

Even though the World Health Organization states that for every 1 dollar invested in treatment, 7 dollars are saved in societal and health costs (WHO 2010), substance dependence policy has historically lagged behind other health policies, including other mental health illnesses. Seven states include some measures for parity for substance dependence specifically in their mental health laws (Maine and Delaware in addition to the five comprehensive parity states), while thirty-one states have either mandated offerings for substance dependence treatment or mandated benefits. Mandated benefits vary between states but generally refer to minimum treatment visits the plan must cover (Robinson et al. 2006). Under the 2008 legislation, states not at parity for substance dependence will face major changes. Limitations, such as mandated minimum benefits, will no longer be allowable in plans offering substance dependence benefits.

Health Insurance Management Practices in Substance Dependence Treatment

Some of the principles of health insurance and economic theory play a critical role in the coverage of mental health and substance dependence treatment. Several of these components are highlighted below:

a) Moral Hazard and Adverse Selection: Moral hazard, or the increased use of services by an individual when that individual's financial responsibilities decrease, has been a critical component in the parity debate. The fee-for-service individuals in the RAND health insurance experiments had mental health costs that were three times greater than the group plans (Newhouse 1993; Frank et al. 1995), leading many to argue against comprehensive benefits, especially regarding substance dependence coverage. Further, adverse selection is especially apparent in regards to mental health benefits. Individuals or families with mental or behavioral health issues are more likely to enroll in plans with comprehensive benefits, and using mental health services is a predictor of other health spending in future years (Barry and Ridgely 2008). Therefore, because of the principles of moral hazard and adverse selection, mental and behavioral health care presents a major financial liability for payers.

b) Managed Care: In response to moral hazard, managed care has been implemented in health insurance programs. Several studies examined the effects of comprehensive mental health and substance dependence benefits, and it was found that managed care was critical for keeping costs low (Rosenbach et al. 2003; Goldman et al. 2006; Barry and Ridgely 2008). Though there is opposition to more managed care, health insurance has already moved into this era in the United States. In 2007, almost 80% of covered workers were enrolled in a managed care organization through either a Preferred Provider Organization (PPO) or a Health Maintenance Organization (HMO) (Claxton et al. 2007). Thus, parity legislation is likely to be reflected in managed care practices.

c) Managed Behavioral Health Care: Particular to mental health and substance dependence are “carve-out” corporations or Managed Behavioral Health Organizations (MBHO). MBHO’s are contracted by either the employer directly or the insurance company to manage behavioral health benefits in order to control costs, thus introducing a fourth entity into behavioral health benefits. The MBHO’s control costs through economies of scale and widening the risk pool over many employers and payers. The MBHO’s bear the financial risk and liability for behavioral health benefits through tightly controlled and managed benefits. In 2006, 170 million Americans were covered under MBHO’s (Frank and Garfield 2007).

The overall effects of “carving-out” mental health benefits are mixed. Some advantages include specialized expertise in managed care for behavioral health, increased continuity of care, and decreased costs. When the Federal Employee Health Benefits converted to comprehensive mental health benefits, the only plan that had significant increases in spending was the plan that did not “carve-out” benefits (Barry and Ridgely 2008). Conversely, some of the disadvantages include increased administrative costs, increased utilization reviews, a disconnect between other physical health benefits, lower reimbursement for healthcare professionals, and higher readmission rates (Shepard et al. 2002; Frank and Garfield 2007). Quality and access to care under “carve-out” plans is unclear. Regardless, MBHO’s are a major player in mental health benefits in the United States.

d) Prior Authorization in Substance Dependence Treatment: Prior authorization is a cost-controlling strategy used by insurance payers. In a study examining access to behavioral health treatment in private health insurance plans, it was found that only 41% of services did not require prior authorization for treatment and the most commonly approved number of outpatient visits was 6-8 visits (Merrick et al. 2008). Three-quarters of these plans used self-developed criteria for accessing whether treatment was medically necessary. While there is some evidence that prior authorization requirements are relaxing (Horgan et al. 2007), prior authorization is critical in predicting treatment length. Substance dependence patients authorized for 5 sessions were three times more likely to terminate treatment at exactly the fifth treatment session compared to patients authorized for 10 sessions (Liu et al. 2000). Prior authorization plays an important role in treatment duration and access.

e) Cost-Sharing in Substance Dependence Treatment: In various chronic diseases, higher copayments result in the early termination of a treatment regimen (Kessler et al. 2007). Although the new legislation calls for copayments, coinsurance, and deductibles to be equivalent to other medical/surgical benefits in plans offering substance dependence care, these cost-sharing responsibilities are a critical component to treatment entry, retention, and completion. Copayment levels were shown to have a significant effect on the reoccurrence of substance dependence problems (Lo Sasso and Lyons 2002). As copayment levels increased, the probability of relapse also increased. Further, moving from a $10 to a $20 copayment resulted in a reduction of visits from 5 to 4 visits for substance dependence treatment (Lo Sasso and Lyons

2004). Therefore, the substance dependent patient may be particularly susceptible to changes in cost-sharing responsibilities.

f) Patient Placement Criteria*:* Specific to substance dependence treatment is the patient placement criteria developed by the American Society of Addiction Medicine or the ASAM (ASAM 2007). These criteria are defined as the following and are important to insurance coverage.

- Level 0.5: Early intervention
- Level I: Outpatient treatment
- Level II: Intensive outpatient/Partial hospitalization
- Level III: Residential/Inpatient Treatment
- Level IV: Medically-managed intensive inpatient treatment

g) Prescription Drug Coverage for Addiction Medications: Several medications are approved by the Food and Drug Administration to treat addictions and substance dependence, including Acamprosate, Disulfiram, Methadone, Naltrexone, and Buprenorphine. Methadone, however, is generally covered as a treatment service, not a prescription drug since it can only be used in specifically licensed clinics (Horgan et al. 2008). More information regarding substance dependence medications can be found in Appendix C. Though the coverage for psychotropic medications is thought to be on par with other physical/medical medications (Barry et al. 2003; Frank et al. 2005; Knudsen et al. 2007), medications specific for substance dependence do not always fall into that category. Some private health plans do not include substance dependence medications

in their formularies, or these medications appear in the highest tier of the formulary which requires patients to pay higher out-of-pocket costs. However, if medications are included in the formulary they generally do not require prior authorization (Horgan et al. 2008).

There are other influences specific to substance dependence medications that must be noted. State policies, such as the Medicaid preferred drug list, can have a profound effect on whether treatment centers even offer pharmacotherapies (Ducharme and Abraham 2008; Heinrich and Hill 2008). Additionally, there are certain characteristics in the treatment center's organizational arrangements that may promote pharmacotherapy use. Centers that employ a staff physician, that are not heavily funded through public funds, that have a large caseload of privately-insured individuals, and that have fewer linkages with the criminal justice system are more likely to adopt pharmacotherapies (Roman and Johnson 2002; Ducharme et al. 2006). The structure of the substance dependence treatment community may also play a major role in the lack of pharmacotherpies used. Many treatment facilities employ traditional "drug-free" type programs, or the belief that the abused drug should not be replaced by pharmaceuticals. The diffusion of pharmacotherapies in substance dependence treatment has been slower than in other medical/surgical treatment fields and may also see changes with the new parity legislation.

The Costs of Substance Dependence Treatment

The costs of treating an individual for a substance dependence problem will vary depending on many characteristics including treatment center logistics, types of services offered, location of treatment center, and payment source for treatment. Though there are varying payment and funding sources for treatment, untreated addiction can have great external costs and profound effects on society. Societal costs such as productivity losses, the criminal justice system, other medical expenditures, and social welfare (Cartwright 2008) are greatly affected by addiction. In a study examining health spending for those with substance disorders, those with addictions had significantly higher expenditures for physical health problems and higher rates of inpatient hospital admissions for psychiatric and general medical reasons (Clark et al. 2009). Also, co-morbidities are especially apparent with regards to mental and physical health leading the World Health Organization to conclude that “physicians need to accord both mental and physical conditions equal priority (Scott et al. 2008).” The external costs of addiction are extensive, thus any barriers to retaining patients in treatment must be addressed.

Paying for Substance Dependence Treatment

Depending on the type of treatment facility, payment for substance dependence treatment may come from various sources. Public facilities rely heavily on funding from local, state, or federal grants, or Medicaid or Medicare; whereas private non-profit centers rely significantly less on public funds and private for-profit centers fewer still (Horgan and Merrick 2001). Other payment sources for treatment include private health

insurance, personal savings, family members, the court systems, the military system, or an employer. While the majority of Americans have private health insurance, the National Survey on Drug Use and Health (NSDUH) reported that the main source of payment for substance dependence treatment was personal savings (table 1). Private insurance as a source of payment was 36.1% depending on the treatment type, whereas personal savings accounted for 49.5%. Additionally, family members provided payment for 16.5% of patients (SAMHSA 2006; SAMHSA 2009). Paying for treatment can be a combination of payment sources and is an area of great concern for patients and treatment facilities. This study examined the various payment sources patients used.

Table 2.1: Sources of Payment for Last or Current Substance Use Treatment Among Persons Aged 12 or Older Who Received Treatment in the Past Year: 2008 (SAMHSA 2009)

Source of Payment	**Alcohol or Illicit Drug Use Treatment (Percent)**
Private Health Insurance	*36.1*
Medicare	17.5
Medicaid	24.7
Public Assistance Program Other than Medicaid	22.3
Own Savings or Earnings	*49.5*
Family Members	*16.5*

Treatment Completion and the Continuation of Care

Treatment completion and the continuation of care repeatedly lead to better outcomes and lower readmission/relapse rates (Simpson et al. 1997; Harris et al. 2006). While treatment completion and the continuation of care are critical, these rates continue to be significantly lacking. The Treatment Episode Data Set (TEDS) is a

nationally representative database. Of the 1.5 million discharges from treatment facilities in 2005, only 44% of all discharges completed treatment (SAMHSA 2008). This study examined patient opinions on completing treatment.

While having health insurance is positively associated with receiving follow-up care after detoxification (Mark et al. 2003), the effects of insurance on treatment completion need to be examined further. In a study by Garcia et al (1999), the impact of insurance on treatment completion was examined.

- 60% of those without health insurance did not complete treatment
- 53% of those with health insurance did not complete treatment

While these results were significantly different, it is evident that retention rates were low. Having health insurance slightly improved treatment completion rates (Garcia et al. 1999).

CHAPTER 3

PRELIMINARY DATA

Treatment Centers Accepting Private Insurance as Payment

The National Survey of Substance Abuse Treatment Services (N-SSATS) is a survey of treatment facilities conducted annually by the Substance Abuse and Mental Health Services Administration (SAMHSA). N-SSATS is a database comprised of the location, characteristics, and utilization of substance abuse treatment as reported by treatment facilities, and has continuously had greater than a 95% response rate for treatment centers. Over 13,000 treatment facilities reported data to N-SSATS each year from 2002-2007. This data set is publicly available and sorted according to state. Treatment centers were asked specifically about the types of payment they accepted. The payment categories accepted included cash or self-pay, private health insurance, Medicare, Medicaid, other state-financed health insurance, federal military insurance, Access to Recovery vouchers, no payment accepted, sliding fee scale, treatment at no charge for clients who can't pay, and other (SAMHSA 2003; SAMHSA 2004; SAMHSA 2005; SAMHSA 2006; SAMHSA 2007; SAMHSA 2008). The percentage of centers accepting *private insurance* was compiled for each state. The states were then divided based on parity laws listed in Appendix A. The percentage of centers accepting private insurance was then averaged across all states within the specified category (figure 3.1).

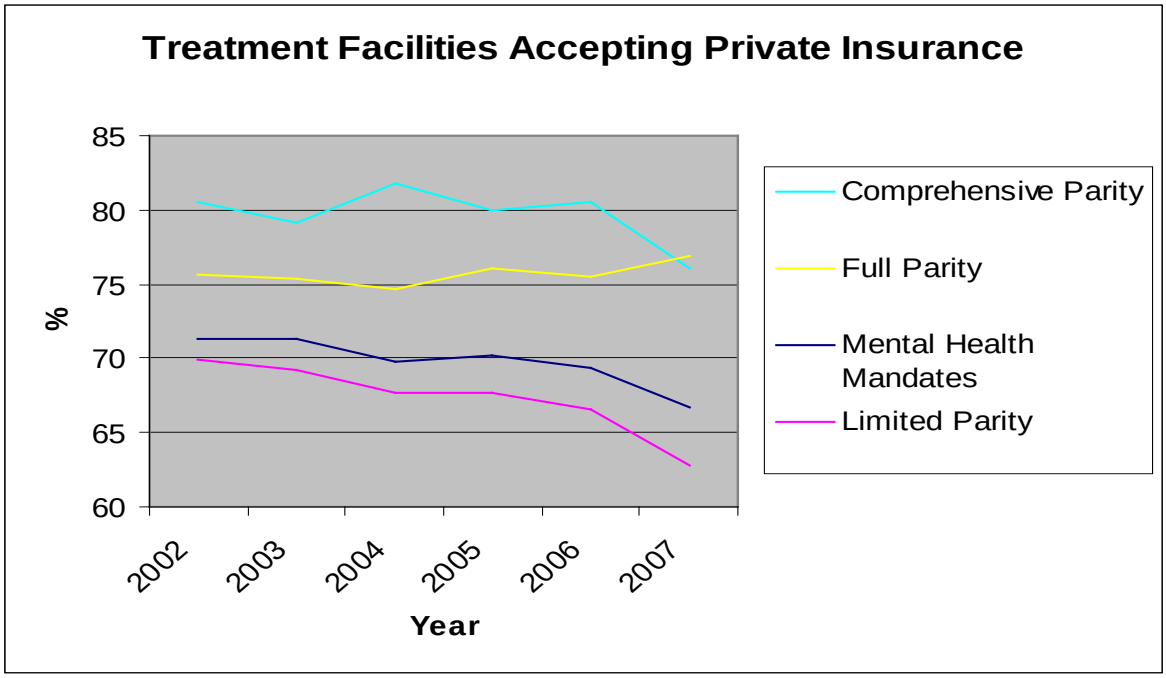


Figure 3.1: Percentage of Centers Accepting Private Insurance for Payment of Substance Dependence Treatment, N-SSATS Data

It is apparent from the data, that there is a discrepancy in centers accepting private insurance. States with comprehensive parity laws have the most centers accepting private insurance and were fairly consistent over the 5-year period, but may have seen a recent decline. Conversely, there is a clear trend for centers in states with limited parity laws to decrease acceptance of private insurance as a payment type. The trend for states with full parity laws appears consistent, while the states with mental health mandates have seen a decline in centers accepting private insurance.

Treatment Centers Employing Pharmacotherapy Technology

Though there are clear discrepancies in the number of centers accepting private insurance as a payment type, the rates of pharmacotherapy use are consistently low across the United States regardless of parity law. Each state reported the percentage of centers employing specific pharmacotherapies to treat substance dependence. Utilization rates for the 6 FDA-approved medications for substance dependence treatment were averaged across all 50 states (figure 3.2). The number of treatment centers offering pharmacotherapies is significantly low for all medications.

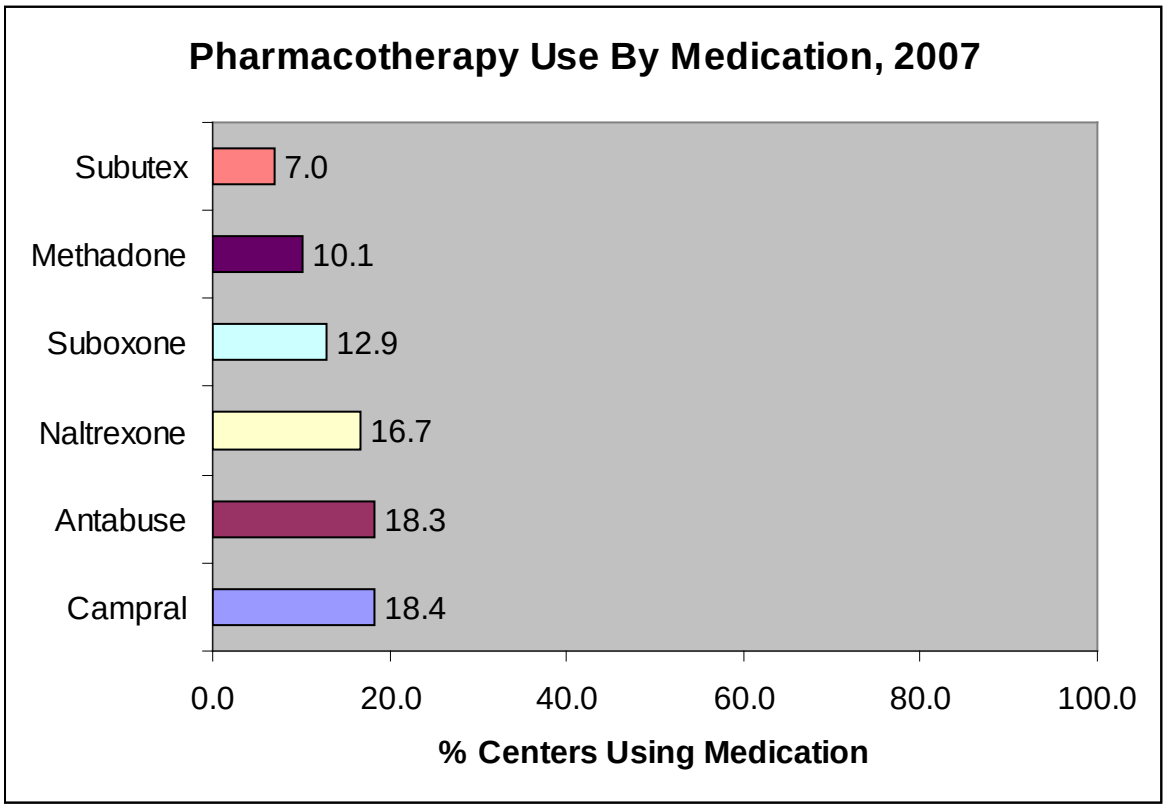


Figure 3.2: Percentage of Centers Reporting Pharmacotherapy use to N-SSATS by Medication Type, 2007

Private Insurance and Pharmacotherapy Use in States of Current Study

The clinical sites for the current study were in Tennessee (a limited parity state) and Georgia (a state with a mandated offering). The percentage of centers accepting private insurance for these states (figure 3.3) shows a decrease in the percentage of centers accepting private insurance as payment over the previous 6-year period.

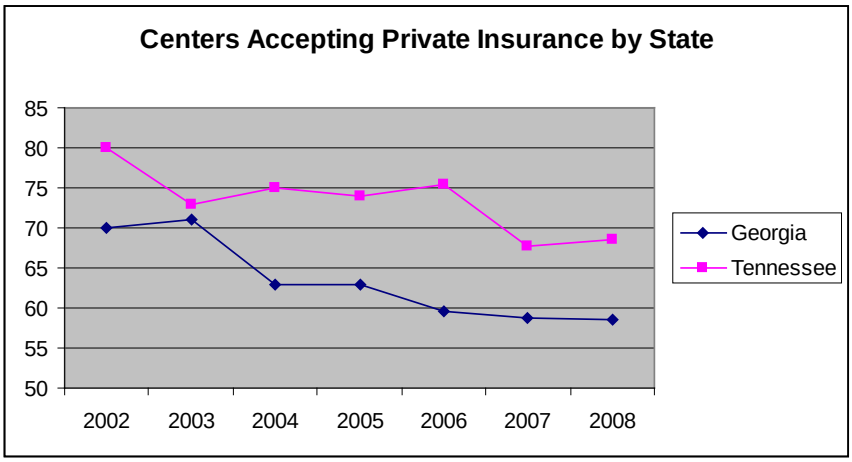


Figure 3.3: Percentage of Centers Accepting Private Insurance for Payment of Substance Dependence Treatment, N-SSATS Data

While the trends for accepting private insurance appear to have decreased for Tennessee and Georgia, the rate of centers using pharmacotherapies was relatively low in 2008 (figure 5). Since the coverage of medications tends to be on par with other medications (Barry et al. 2003; Frank et al. 2005; Knudsen et al. 2007) this low utilization rate should be addressed. This study therefore looked at patients' opinions about taking medications for substance dependence.

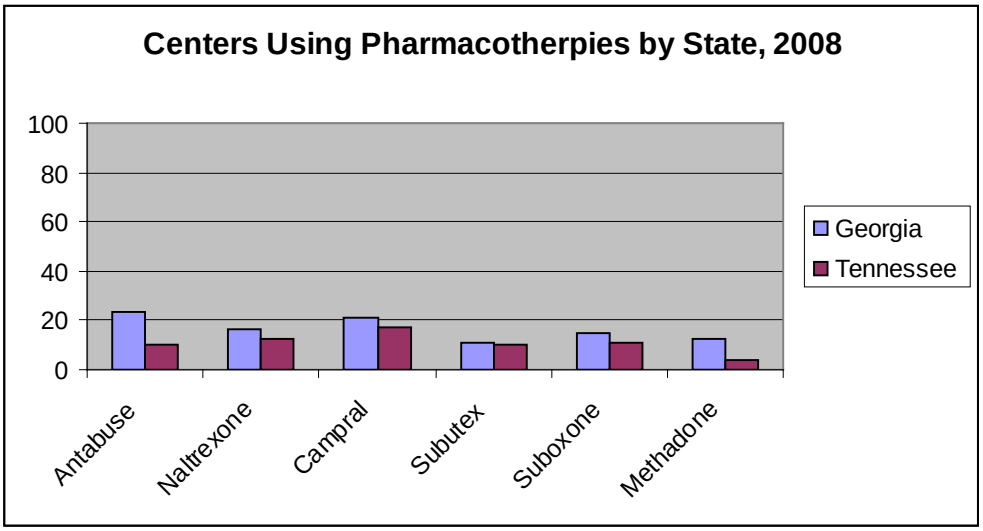


Figure 3.4: Percentage of Centers Reporting Pharmacotherapy use to N-SSATS by Medication Type and State, 2008

Based on preliminary data from the N-SSATS database, it is apparent that treatment centers are not accepting private insurance for payment at the same rate. This result provides the basis for our interest in surveying patients. Health insurance coverage for the treatment of addictions is an extremely complex topic. There are many factors that could vary between the insurer, the employer, the treatment facility, and the state. Therefore, we sought the patient's opinion as to the financial obstacles before them. Further, the use of pharmacotherapies is low amongst treatment facilities leading us to also inquire about the patient's attitudes towards medications for substance dependence.

CHAPTER 4

RESEARCH QUESTIONS AND SIGNIFICANCE

Research Questions

Based on the literature and preliminary data, the overall purpose of the current study was to gain the patient's perspective about various barriers they were facing specifically regarding paying for treatment and subsequently compare these opinions to that of the general public. Financing treatment is a confusing, complex maze of private and public funding, policies, managed care, facility type and various other entities; therefore a study surveying patients themselves is appropriate. Further, patients were asked about their opinions on taking medications for substance dependence, their beliefs about health insurance and parity, and their beliefs about completing treatment and compliance. The general public also answered these dimensions (except for beliefs on completing treatment and compliance, since this did not apply to the general public) in order to collectively answer the following research questions:

1. What methods will patients use to finance treatment?
2. What are the opinions of both patients and the general public regarding medications for substance dependence?
3. What are the opinions of both patients and the general public regarding health insurance paying for substance dependence as well as treating addiction at parity?
4. What are the various payment barriers patients are facing?

5. What role does self-reported physical and mental health play in the aforementioned dimensions?
6. How much of an effect does paying for treatment have on patients finishing treatment?
7. How much of an effect does paying for treatment have on the general public's decision to seek treatment if needed?

Importance and Significance

While there is an abundance of research on substance dependence, this study represents an unique analysis assessing patients' and the general publics' opinions about financing treatment, health insurance, substance dependence medications, and parity. These questions have not been asked previously. This research can then be used to direct future research projects, open communication lines, and to analyze specific policies affecting patients. Further, the results from this study can be used to address barriers patients may be facing which in turn could lead to treatment discontinuation. The data collected from the general public can be also be used to determine if there are certain perceived barriers that are preventing people from entering treatment all together.

CHAPTER 5

INSTRUMENT DEVELOPMENT

Conceptual Framework

A conceptual framework was used to guide the item generation process. The conceptual framework came from a combination of psychological and behavioral theories. Fishbein and Ajzen's theory of reasoned action (Fishbein and Ajzen 1975; Ajzen and Fishbein 1980) states that an attitude towards a behavior combined with subjective norms leads to behavioral intention which subsequently leads to a behavior. Expanding on that model, Ajzen and Madden (1986) added the perceived behavioral control domain as a third predictor of behavioral intention. While subjective norms are important to substance dependence treatment, this study is interested in surveying patients already in treatment as well as the general public, which is why only attitudes and perceived behavioral control were incorporated into the model.

Secondly, the concepts of locus of control were used (Rotter 1954; Wallston et al. 1978). The locus of control concepts include three different dimensions (internal health locus of control, chance health locus of control, and powerful others health locus of control) as a predictor of self-rated health (Poortinga et al. 2008). Essentially, the chance and powerful others dimensions comprise external controls of health with lower external controls leading to higher engagement in health-promoting/sustaining activities (Poortinga et al. 2008). Applying these theories to the substance dependent community

would predict that patients with lower external control barriers would be more likely to engage and sustain in health-promoting activities.

Combining the theories of reasoned action and locus of control, a conceptual framework was derived (figure 5.1) for measuring different health-related dimensions for patients in substance dependence treatment. The framework employs an internal locus of control (comprised of self-efficacy and perceived behavioral control items) compared to an external locus of control (comprised of insurance barriers, parity beliefs, payment barriers, medication beliefs, and beliefs about compliance and completing treatment). In turn, each of the dimensions could greatly affect the patient's intention and ability to get and stay sober.

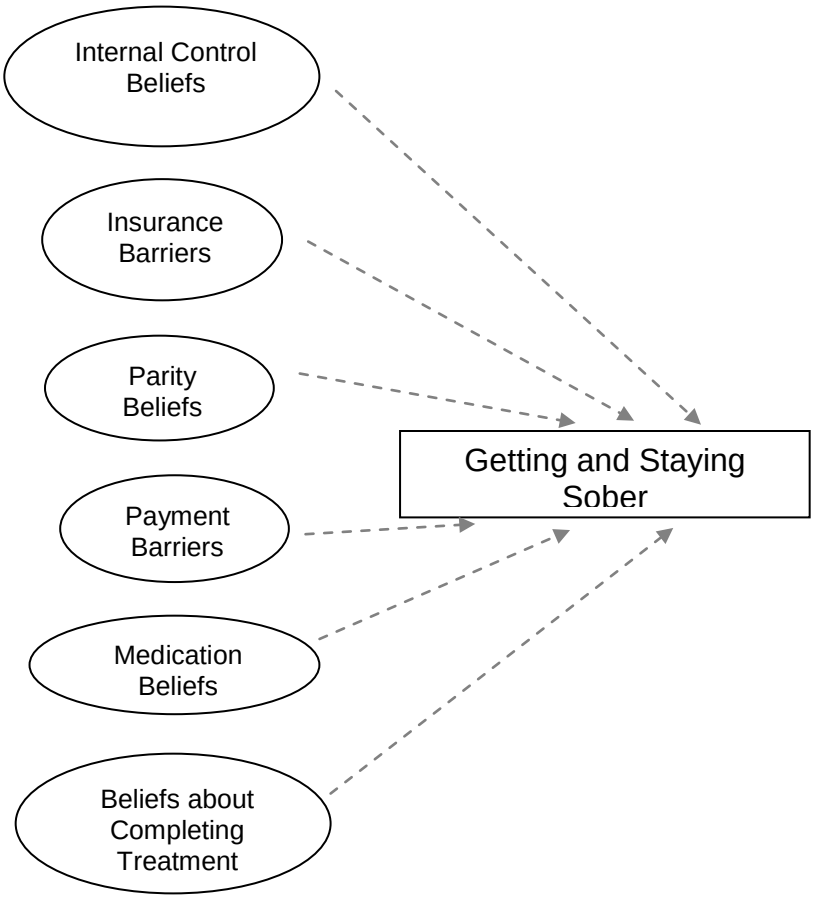


Figure 5.1: Conceptual Framework for Barriers to Completing Substance Dependence Treatment

Additionally, this conceptual framework was truncated for the general public pool (figure 5.2). The general public was surveyed on attitudes towards a behavior and perceived behavioral control in regards to parity components relating to substance dependence treatment. In turn, each of the dimensions could greatly affect a person's intention and ability to seek treatment for substance dependence (health-promoting behavior). The same dimensions that were administered to patients were administered to the general public, except for the dimension: Beliefs about Completing Treatment.

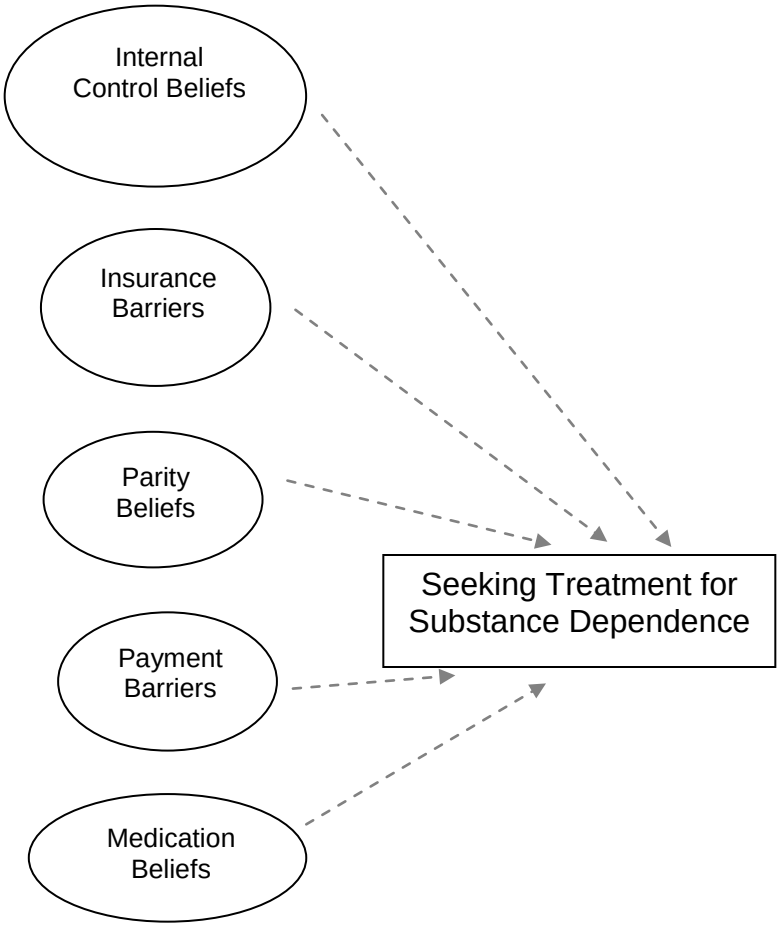


Figure 5.2: Conceptual Framework for Barriers to Seeking and Accessing Substance Dependence Treatment

Item Generation

The initial instrument and item pool were generated based on a search of the literature, adapted from other instruments, and generated by input from professionals in the field. A deductive approach was taken during item generation. Interviews were conducted with patients currently in treatment (n=6), substance dependence treatment providers (n=4), and an individual working in private insurance (n=1). Items were reworded or added based on the interviews. All items were agree/disagree response types based on a 5-point Likert scale since reliability does not increase much past 5-points (Hinkin 1995). The initial item pool incorporated the following items:

Domain: Perceived Behavioral Control and Self-Efficacy [ICL]

Adapted From: (Pearlin and Schooler 1978; Ajzen and Madden 1986; TCU 2005; Poortinga et al. 2008)

Scoring

Higher scores represent higher levels of perceived behavioral control and self-efficacy.

Items

1. I have a lot of control over whether I finish treatment for my addiction.
2. I have a lot of control over whether I will get sober.
3. I am in control of my health.
4. I am to blame for my addiction.
5. I control whether I am happy with my treatment.
6. What happens to me in the future mostly depends on me.
7. There is little I can do to change many of the important things in my life.*
8. There is really no way I can solve some of the problems I have.*
9. I can do just about anything I really set my mind to.
10. I often feel helpless in dealing with problems in my life.*

*Items are reverse coded.

Domain: Insurance Barriers [INS]

Scoring

Higher scores represent more barriers due to insurance.

Items

1. I am happy with my level of health insurance for substance dependence treatment.*
2. I am satisfied with how much insurance I have to pay for addiction medications.
3. I am satisfied with how much insurance I have to pay for substance dependence treatment.
4. I think my level of health insurance will help me get sober.*
5. My health insurance status has caused me to end a treatment service before I thought I was ready.
6. My health insurance status has caused extra worry during my treatment.

*Items are reverse coded.

Domain: Parity Beliefs [PAR]

Scoring

Higher scores represent stronger parity beliefs.

Items

1. I think mental health issues should be treated like any other physical illness.
2. I think substance dependence should be treated like any other physical illness.
3. I believe substance dependence is a disease.
4. I think patients should pay more from their own savings for substance dependence treatment than for other medical problems.*
5. I believe health insurance should pay for treatment for substance dependence.
6. I believe health insurance should pay for addiction medications.
7. I believe health insurance providers treat substance dependence like any other health problems.

*Items are reverse coded.

Domain: Payment Barriers [PAY]

Scoring

Higher scores represent more payment barriers.

Items

1. I cannot afford substance dependence treatment.
2. I wish I could afford more treatment for my substance dependence issues.
3. I constantly worry about how I'm going to pay for my treatment.
4. I think getting this treatment for my addiction problems is a financial drain on my family.
5. I think it should be my responsibility to figure out how to pay for treatment.*
6. The amount of money I have to pay from my own savings for treatment is too high.
7. I am satisfied with the payment plan I have for this treatment.*
8. I wish I could afford medications to treat my addiction problems.
9. I have made financial sacrifices to pay for substance dependence treatment.
10. If I relapse, I won't come back because of the money I've spent.
11. I am resentful about the money I have spent for treatment.
12. Sometimes I feel like this treatment center just wants my money.
13. I am not concerned about the costs of this treatment*

*Items are reverse coded.

Domain: Medication Beliefs [MEDS]

Scoring

Higher scores represent stronger beliefs about medications for substance dependence.

Items

1. Medications can really help a person overcome substance dependence issues.
2. Addiction medications are not as important as other physical health medications.*
3. Addiction medications are an important part of treatment.
4. I am scared of the side effects of addiction medications.*
5. I don't think a person needs any medications to get sober.*
6. I wish I had better access to addiction medications.
7. I know very little about addiction medications.*
8. I think addiction medications will help me complete treatment.

*Items are reverse coded.

Domain: Beliefs About Compliance and Completing Treatment [COMP]
Scoring Higher scores represent stronger intentions in completing treatment.
Items 1. If I can no longer afford treatment, I will stop coming.* 2. I would stop taking medications for my addiction problems if I could no longer afford them.* 3. I would stop taking medications for an illness if I could no longer afford them.* 4. I will ask a doctor before I stop taking medications.* 5. I believe I will complete treatment. 6. I think my level of health insurance will help me complete treatment. 7. It is ok to stop taking medications for substance dependence at any time.* *Items are reverse coded.

Content Validity

The initial item pool was randomized and given to UGA faculty and graduate students to test for content validity. The items were randomly ordered and ten faculty members and doctoral students sorted them into the six domains listed, or an "other" category as done previously (MacKenzie et al. 1991; Hinkin 1995). Only items with 80% agreement were retained (table 5.1) for the exploratory factor analysis and additional items were added to domains with less than 5 items with 80% agreement. Within the Perceived Behavioral Control dimension, only items with 100% agreement were retained for analysis in order to reduce the overall number of items and because these items were used in a previous instrument.

Table 5.1: Content Validity Analysis

Perceived Behavioral Control (INT)	ICL	INS	PAR	PAY	MEDS	COMP	OTH
[ICL1] I have a lot of control over whether I finish treatment for my addiction.	x x x x xxxx					x x	
[ICL 2] I have a lot of control over whether I will get sober.	x x x x x x xxxx						
[ICL 3] I am in control of my health.	x xx x x x xxx						
[ICL 4] I am to blame for my addiction.	x x x x x xxx					x	
[ICL 5] I control whether I am happy with my treatment.	x x xx x x xxxx						
[ICL 6] What happens to me in the future mostly depends on me.	x x x xxx x xxx						
[ICL 7] There is little I can do to change many of the important things in my life.*	x x x x x x xxxx						
[ICL 8] There is really no way I can solve some of the problems I have.*	x x xx x xxxx						X
[ICL 9] I can do just about anything I really set my mind to.	x x xx x x xxxx						
[ICL 10] I often feel helpless in dealing with problems in my life.*	x x x x x xxxx						

Insurance Barriers and Beliefs (INS. BA)	ICL	INS	PAR	PAY	MEDS	COMP	OTH
[INS 1] I am happy with my level of health insurance for substance dependence treatment.		x x x xx	X	xx			
[INS 2] I am satisfied with how much insurance I have for addiction medications.		x x x x xxxx		X			X
[INS 3] I am satisfied with how much insurance I have for substance dependence treatment.		x x x x xxx		X x			
[INS 4] I think having health insurance will help a person get sober.		x x x x x xxx		X			
[INS 5] My health insurance, or lack of insurance, has caused me to end a treatment service before I thought I was ready.*		x x x x xxx		xx			
[INS 6] My health insurance, or lack of insurance, has caused extra worry during my treatment.*		x x x x xxx	X	X			
Added Items							
[INS 7] I am, or would be, scared to use insurance to pay for treatment because I wouldn't want an insurer to know about my substance dependence issues.*							
[INS 8] I am, or would be, uncomfortable using health insurance for substance dependence treatment.*							
[INS 9] I believe using health insurance for treatment would prevent a person from having health insurance in the future.*							

Parity Beliefs (PAR)	ICL	INS	PAR	PAY	MEDS	COMP	OTH
[PAR 1] I think mental health issues should be treated like any other physical illness.			x x x xx x xxxx				
[PAR 2] I think substance dependence should be treated like any other physical illness.			x x x x x xxxx		X		
[PAR 3] I believe substance dependence is a disease.	xx		X xx		X x		X xx
[PAR 4] I think patients should pay more from their own savings for substance dependence treatment than for other medical problems.*			X x x x xxxx	X x			
[PAR5] I believe health insurance should pay for treatment for substance dependence.		X x x xx	X xx			xx	
[PAR6] I believe health insurance should pay for addiction medications.		X x x x x x	X		Xxx		
[PAR 7] I believe health insurance providers treat substance dependence like any other health problems.		X x	x x x x xxxx				
Added Items							
[PAR8] It is just as important to treat my substance dependence issues as it is to treat other health issues I am having.							
[PAR9] I think substance dependence is a disease like any other disease.							

Payment Barriers (PAYM)	ICL	INS	PAR	PAY	MEDS	COMP	OTH
[PAY 1] I cannot afford substance dependence treatment.				x x xx x x xxxx			
[PAY 2] I wish I could afford more treatment for my substance dependence issues.			X	X x x x x xxxx			
[PAY 3] I constantly worry about how I'm going to pay for my treatment.				x x x x x x xxxx			
[PAY 4] I think getting this treatment for my addiction problems is a financial drain on my family.		X		X x x x x xxxx			
[PAY 5] I think it should be my responsibility to figure out how to pay for treatment.*	xx			x x x xx x			X xx
[PAY 6] The amount of money I have to pay from my own savings for treatment is too high.				x x x x x x xxxx			
[PAY 7] I am satisfied with the payment plan I have for this treatment.*		Xx x xx		X xxx		x	
[PAY 8] I wish I could afford more medications to treat my addiction problems.				x x x x x x xxxx			
[PAY 9] I have made financial sacrifices to pay for substance dependence treatment.				x x x x x xxx			Xx
[PAY 10] If I relapse, I won't come back because of the money I've spent.				x x x x x xxx		xx	

[PAY 11] I am resentful about the money I have spent for treatment.				x x x x xxxx x		x	X
[PAY 12] Sometimes I feel like this treatment center just wants my money.				x x x x x xxxx			X x
[PAY 13] I am not concerned about the costs of this treatment*		X		X x x x x xxxx			

Beliefs about addiction medications (MEDS)	ICL	INS	PAR	PAY	MEDS	COMP	OTH
[MEDS 1] Medications can really help a person overcome substance dependence issues.					x x x x x x x		
[MEDS 2] Addiction medications are not as important as other physical health medications.*			X x x		X x x x		
[MEDS 3] Addiction medications are an important part of treatment.			X		X x x x x x		
[MEDS 4] I am scared of the side effects of addiction medications.*					x x x x x x x		
[MEDS 5] I don't think a person needs any medications to get sober.*	X x	X			X x x x		
[MEDS 6] I want to use more medications to treat my addiction issues.		X			X x x x		X x
[MEDS 7] I know very little about addiction medications.*					x x x x x x x		
[MEDS 8] I think addiction medications will help me with treatment.					x x x x x x	x	

Beliefs about compliance and completing treatment (COMP)	ICL	INS	PAR	PAY	MEDS	COMP	OTH
[COMP 1] If I can no longer afford treatment, I will stop coming.*				x x x x x		X x	
[COMP 2] I would stop taking medications for my addiction problems if I could no longer afford them.*			x	X x x x x x			
[COMP 3] I would stop taking medications for an illness if I could no longer afford them.*				X x x x x		x	
[COMP 4] I will ask a doctor before I stop taking addiction medications.*	x					x x x x x	X
[COMP 5] I believe I will complete treatment.						x x x x x x x	
[COMP 6] I think my level of health insurance will help me complete treatment.		X x x x x		x		x	
[COMP 7] It is ok to stop taking medications for substance dependence at any time.*					X	x x x x x x	
Added Items							
[COMP 8] I always come to treatment when I am supposed to.							
[COMP 9] I will finish the full treatment I am supposed to.							
[COMP10] It is ok to stop coming to treatment if I am feeling better.*							
[COMP11] It is hard for me to make it to all of my treatment sessions.*							

Institutional Review Board

This research was submitted to the University of Georgia Institutional Review Board. Approval was granted before any human subjects were included in the project. Participants were approached by clinical staff and asked if they would like to fill in a short survey. Participants were informed that no harm or negative consequences would come to them if they chose not to participate. If participants were interested, they were handed a letter en lieu of signing a consent form (Appendix D).

Exploratory Factor Analysis

The initial instrument was administered to PharmD students (n=197) at the University of Georgia who were willing to volunteer to take the survey. Students were advised to answer items to the best of their abilities and to answer items as if they were currently in treatment for drugs and/or alcohol dependence. Factor analysis was conducted using SPSS (16.0) for Windows statistical package. This population of students may have represented a biased population since they are employed within the healthcare field. This analysis represented the first round of factor analyses and provided the basic factor structure to take into the study populations. All factor analyses were then repeated within the proposed study populations.

Table 5.2: Exploratory Factor Analysis with All Variables

```
FACTOR
  /VARIABLES COMP5 COMP7R COMP8 COMP9 COMP10R COMP11R ICL2 ICL3 ICL5 ICL6
ICL7R ICL9 ICL10R INS2 INS3 INS4 INS5R INS6R INS7R INS8R I
   NS9R MEDS1 MEDS3 MEDS4R MEDS6 MEDS7R MEDS8 PAR1 PAR2 PAR4R PAR7 PAR8
PAR9 PAY1 PAY2 PAY3 PAY4 PAY6 PAY8 PAY9 PAY10 PAY11
    PAY12 PAY13R
  /MISSING PAIRWISE
  /ANALYSIS COMP5 COMP7R COMP8 COMP9 COMP10R COMP11R ICL2 ICL3 ICL5 ICL6
ICL7R ICL9 ICL10R INS2 INS3 INS4 INS5R INS6R INS7R INS8R IN
```

```
  S9R MEDS1 MEDS3 MEDS4R MEDS6 MEDS7R MEDS8 PAR1 PAR2 PAR4R PAR7 PAR8
PAR9 PAY1 PAY2 PAY3 PAY4 PAY6 PAY8 PAY9 PAY10 PAY11
   PAY12 PAY13R
  /PRINT UNIVARIATE INITIAL CORRELATION SIG KMO EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION ML
  /CRITERIA ITERATE(25) DELTA(0)
  /ROTATION OBLIMIN.
```

Descriptive Statistics

	Mean	Std. Deviation	Analysis N	Missing N
COMP5	3.9184	.72570	196	1
COMP7R	4.1684	.74917	196	1
COMP8	3.4550	.94775	189	8
COMP9	3.8718	.78581	195	2
COMP10R	3.8776	.89173	196	1
COMP11R	2.9797	.86283	197	0
ICL2	4.0000	1.08579	191	6
ICL3	3.8872	1.01412	195	2
ICL5	3.4794	.92858	194	3
ICL6	4.0410	.77217	195	2
ICL7R	4.0154	.91086	195	2
ICL9	4.1289	.89262	194	3
ICL10R	3.2359	1.16466	195	2
INS2	2.6943	.83218	193	4
INS3	2.6821	.80682	195	2
INS4	3.4718	1.02694	195	2
INS5R	2.7047	1.04624	193	4
INS6R	2.1929	.79112	197	0

INS7R	2.8020	1.21067	197	0
INS8R	3.1878	1.03522	197	0
INS9R	3.1117	.97296	197	0
MEDS1	3.8000	.81608	195	2
MEDS3	3.9137	.66828	197	0
MEDS4R	2.5538	.95837	195	2
MEDS6	2.6736	.81788	193	4
MEDS7R	2.7092	1.06800	196	1
MEDS8	3.6735	.76158	196	1
PAR1	3.8367	1.09258	196	1
PAR2	3.6193	1.07011	197	0
PAR4R	3.3316	1.09882	196	1
PAR7	2.2857	1.02282	196	1
PAR8	4.1692	.70862	195	2
PAR9	3.5795	1.08295	195	2
PAY1	3.4794	1.04910	194	3
PAY2	3.7668	.75176	193	4
PAY3	3.5204	.83794	196	1
PAY4	3.6751	.87833	197	0
PAY6	3.6856	.74743	194	3
PAY8	3.4949	.75446	196	1
PAY9	3.6000	.74197	195	2
PAY10	2.8718	.90757	195	2
PAY11	3.1289	.94890	194	3

PAY12	3.2629	.96464	194	3
PAY13R	3.7107	1.76200	197	0

Data were relatively normally distributed. Therefore maximum likelihood is the preferred extraction procedure for exploratory factor analysis (Fabrigar et al. 1999; Costello and Osborne 2005).

According to the correlation matrix, some of the variables did not correlate with other variables within the dimension. These items were analyzed for relevance and removed: MEDS6, MEDS7, PAR7, and PAY13. The factor analysis was then run with the remaining items (table 5.3).

Table 5.3: Exploratory Factor Analysis with Uncorrelated Variables Removed

```
FACTOR
  /VARIABLES COMP5 COMP7R COMP8 COMP9 COMP10R COMP11R ICL2 ICL3 ICL5 ICL6
ICL7R ICL9 ICL10R INS2 INS3 INS4 INS5R INS6R INS7R INS8R I
   NS9R MEDS1 MEDS3 MEDS4R MEDS8 PAR1 PAR2 PAR4R PAR8 PAR9 PAY1 PAY2
PAY3 PAY4 PAY6 PAY8 PAY9 PAY10 PAY11 PAY12
  /MISSING PAIRWISE
  /ANALYSIS COMP5 COMP7R COMP8 COMP9 COMP10R COMP11R ICL2 ICL3 ICL5 ICL6
ICL7R ICL9 ICL10R INS2 INS3 INS4 INS5R INS6R INS7R INS8R IN
   S9R MEDS1 MEDS3 MEDS4R MEDS8 PAR1 PAR2 PAR4R PAR8 PAR9 PAY1 PAY2 PAY3
PAY4 PAY6 PAY8 PAY9 PAY10 PAY11 PAY12
  /PRINT INITIAL CORRELATION SIG DET KMO EXTRACTION ROTATION
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION ML
  /CRITERIA ITERATE(75) DELTA(0)
  /ROTATION OBLIMIN.
```

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.792
Bartlett's Test of Sphericity	Approx. Chi-Square	2943.768
	Df	780.000
	Sig.	.000

The Kaiser-Meyer-Olkin (KMO) of Sampling Adequacy is a check to make sure that the sample is adequate to do factor analysis on. Generally a value of 0.7 or higher indicates that factor analysis is appropriate for the data set (Kaiser 1970; Kaiser 1974; Meyers et al. 2006).

Bartlett's Test of Sphericity is an indicator of a null hypothesis that none of the variables are significantly correlated. This value is significant, so the null may be rejected, and the correlation matrix thus varies from the identity matrix. Factor analysis is appropriate. (Meyers et al. 2006)

In addition to the KMO and Bartlett Test, the communalities should be at least 0.4 in order to be retained (Costello and Osborne 2005). Items with communalities below 0.4 after extraction are highlighted and were examined further (table 5.4).

Table 5.4: EFA Communalities

Communalities[a]

	Initial	Extraction
COMP5	.588	.741
COMP7R	.446	.476
COMP8	.505	.559
COMP9	.544	.641
COMP10R	.481	.550
COMP11R	.451	.532
ICL2	.367	.316
ICL3	.567	.600
ICL5	.346	.341
ICL6	.540	.623
ICL7R	.551	.506
ICL9	.619	.670
ICL10R	.602	.503
INS2	.588	.550
INS3	.618	.776
INS4	.389	.296
INS5R	.534	.488
INS6R	.606	.649
INS7R	.405	.442
INS8R	.309	.280
INS9R	.351	.431
MEDS1	.473	.444
MEDS3	.555	.705
MEDS4R	.218	.213
MEDS8	.458	.436
PAR1	.622	.663
PAR2	.683	.829
PAR4R	.380	.320
PAR8	.417	.312
PAR9	.541	.556
PAY1	.546	.563
PAY2	.621	.618
PAY3	.629	.659
PAY4	.530	.502
PAY6	.490	.473
PAY8	.504	.480
PAY9	.517	.561
PAY10	.404	.288
PAY11	.423	.395
PAY12	.478	.768

Extraction Method: Maximum Likelihood.

a. One or more communalitiy estimates greater than 1 were encountered during iterations. The resulting solution should be interpreted with caution.

ICL2, ICL5, PAY10 and PAY11 were removed due to low communalities. INS4, “I think having health insurance will help a person get sober” was changed to read “I think having health insurance will help a person with substance dependence issues.” Further, INS8, PAR4 and PAR8 were not removed since they had wording specifically for patients currently in treatment. Lastly, MEDS4 “I am scared of the side effects of addiction medications” was not removed since this population was pharmacy students thus the pharmaceutical knowledge was far greater the typical individual. The answers for MEDS4 may have been biased for this reason. Factor Analysis was then carried out with ICL2, ICL5, PAY10, and PAY11 removed (table 5.5).

Table 5.5: Exploratory Factor Analysis with Low Communalities Removed

```
FACTOR
  /VARIABLES COMP5 COMP7R COMP8 COMP9 COMP10R COMP11R ICL3 ICL6 ICL7R
ICL9 ICL10R INS2 INS3 INS4 INS5R INS6R INS7R INS8R INS9R MEDS1
    MEDS3 MEDS4R MEDS8 PAR1 PAR2 PAR4R PAR8 PAR9 PAY1 PAY2 PAY3 PAY4 PAY6
PAY8 PAY9 PAY12
  /MISSING PAIRWISE
  /ANALYSIS COMP5 COMP7R COMP8 COMP9 COMP10R COMP11R ICL3 ICL6 ICL7R ICL9
ICL10R INS2 INS3 INS4 INS5R INS6R INS7R INS8R INS9R MEDS1
    MEDS3 MEDS4R MEDS8 PAR1 PAR2 PAR4R PAR8 PAR9 PAY1 PAY2 PAY3 PAY4 PAY6
PAY8 PAY9 PAY12
  /PRINT INITIAL CORRELATION SIG DET KMO EXTRACTION ROTATION
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION ML
  /CRITERIA ITERATE(75) DELTA(0)
  /ROTATION OBLIMIN.
```

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.790
Bartlett's Test of Sphericity	Approx. Chi-Square	2642.470
	Df	630.000
	Sig.	.000

Communalities

	Initial	Extraction
COMP5	.557	.731
COMP7R	.438	.487
COMP8	.481	.550
COMP9	.533	.550
COMP10R	.463	.563
COMP11R	.431	.483
ICL3	.539	.524
ICL6	.512	.545
ICL7R	.535	.534
ICL9	.615	.701
ICL10R	.570	.533
INS2	.542	.624
INS3	.591	.620
INS4	.363	.335
INS5R	.523	.476
INS6R	.604	.642
INS7R	.382	.391
INS8R	.284	.265
INS9R	.339	.351
MEDS1	.465	.424
MEDS3	.551	.735
MEDS4R	.215	.232
MEDS8	.443	.423
PAR1	.608	.676

PAR2	.669	.833
PAR4R	.376	.229
PAR8	.409	.335
PAR9	.524	.543
PAY1	.533	.518
PAY2	.612	.624
PAY3	.620	.684
PAY4	.525	.485
PAY6	.478	.476
PAY8	.502	.496
PAY9	.516	.566
PAY12	.423	.582

Extraction Method: Maximum Likelihood.

Ten latent factors with eigenvalues above 1.0 were retained from the analysis. These ten factors explained over 65% of the variance in the data.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.482	18.005	18.005	5.980	16.611	16.611	4.793	13.313	13.313
2	4.714	13.095	31.100	4.131	11.474	28.085	2.641	7.337	20.650
3	2.287	6.354	37.454	2.077	5.769	33.854	2.164	6.011	26.661
4	1.944	5.401	42.855	1.445	4.013	37.867	1.966	5.461	32.122
5	1.724	4.788	47.643	1.236	3.433	41.300	1.859	5.164	37.286

6	1.550	4.307	51.950	1.049	2.915	44.215	1.294	3.593	40.879
7	1.433	3.981	55.930	.887	2.464	46.679	1.245	3.458	44.337
8	1.213	3.369	59.299	.743	2.064	48.743	1.199	3.331	47.668
9	1.098	3.051	62.350	.595	1.652	50.395	.862	2.394	50.062
10	1.076	2.989	65.339	.623	1.731	52.126	.743	2.064	52.126
11	.953	2.647	67.987						
12	.874	2.428	70.415						
13	.840	2.333	72.748						
14	.768	2.132	74.880						
15	.747	2.076	76.956						
16	.709	1.969	78.925						
17	.653	1.814	80.739						
18	.590	1.639	82.378						
19	.546	1.516	83.894						

Extraction Method: Maximum

Likelihood.

According to the Scree plot below (figure 5.3), the elbow or “break” appears to be between 3 and 8. Since retaining factors with eigenvalues above 1.0 is a very inaccurate way of retaining factors, (Velicer and Jackson 1990; Costello and Osborne 2005) the rotated factor matrix was examined for latent factor determination. The most accurate number of factors will have many items loading at 0.5 or higher, minimal crossloadings of 0.32 or higher (Tabachnick and Fidell 2001), and multiple strongly-loading items on each factor (Costello and Osborne 2005). Since it is reasonable to assume some inter-factor correlations, all rotations were first done as oblique (direct oblimin) to allow for correlation between the factors. However, this analysis failed to

converge after 25 iterations. The analysis was then done using orthogonal, Varimax rotation, and the rotated factor matrix (table 5.6) was interpreted below.

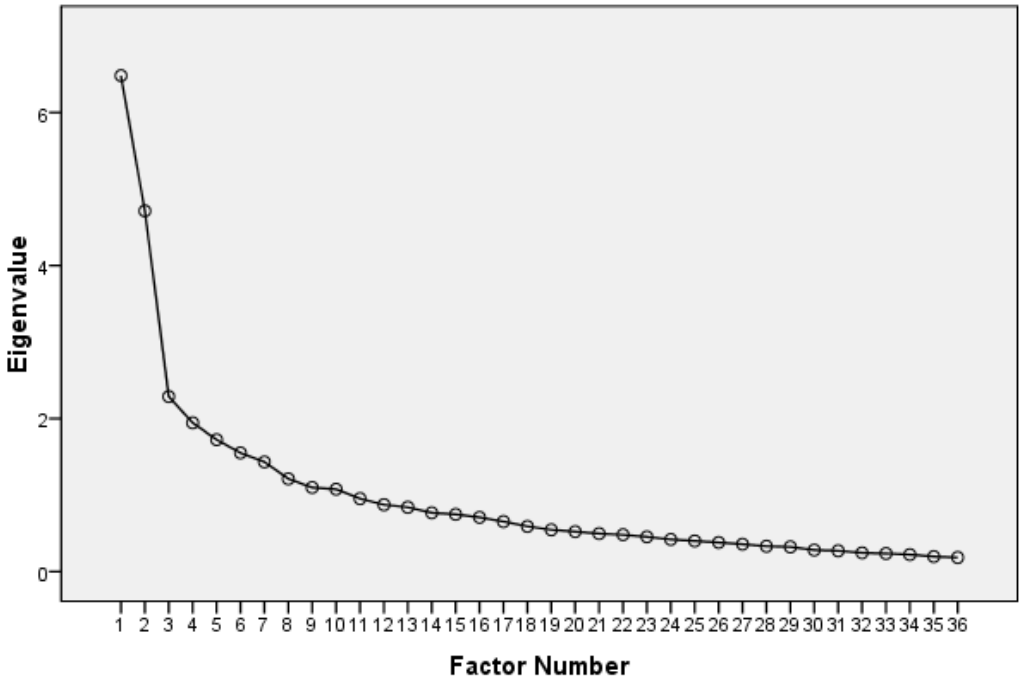


Figure 5.3: Scree Plot

Table 5.6: Rotated Factor Matrix

Rotated Factor Matrix[a]

	Factor									
	1	2	3	4	5	6	7	8	9	10
COMP5	.069	.237	-.096	.140	.359	.030	.250	.262	.613	.068
COMP7R	-.040	.289	.139	.148	.106	-.088	.105	.557	.142	.026
COMP8	-.004	.153	.103	.014	.680	.119	.153	.117	.024	-.031
COMP9	.059	.258	-.124	.119	.566	.139	.076	.100	.294	-.087
COMP10R	-.052	.144	-.006	.106	.301	-.064	.057	.654	.015	-.057
COMP11R	-.186	.168	.101	.018	.592	-.141	.129	.130	-.077	.015
ICL3	-.251	.587	-.033	.043	.243	.174	.095	.055	-.086	.061
ICL6	-.090	.700	.045	.000	-.006	.011	-.020	.113	.173	.026
ICL7R	-.156	.624	.015	-.092	.142	-.046	.141	.185	-.026	-.186
ICL9	-.161	.744	.056	.102	.251	.114	.025	.102	.043	-.142
ICL10R	-.332	.588	-.044	.005	.088	.009	.235	-.059	-.033	.087
INS2	-.303	.052	.026	-.107	.053	.712	-.017	-.088	.007	.005
INS3	-.418	.097	-.043	.018	.019	.598	-.025	-.205	.145	.111
INS4	.022	.061	.047	.420	.279	-.146	-.025	-.111	.138	-.145
INS5R	-.610	.193	-.109	-.029	.061	.067	.025	.156	.063	.127
INS6R	-.759	.179	-.058	-.012	.023	-.095	.036	-.061	.005	.126
INS7R	-.088	.118	.055	.198	.216	.043	.499	-.140	-.086	-.053
INS8R	.018	.051	.095	.068	-.012	-.163	.418	.214	.015	-.040
INS9R	-.037	.095	.040	-.008	.096	.010	.550	.059	.142	-.061
MEDS1	.088	.119	.101	.608	.024	-.028	.111	.084	-.035	-.013
MEDS3	.134	.023	.175	.759	.038	-.090	.112	.173	-.136	.199
MEDS4R	-.213	-.086	.016	.183	.011	-.310	.092	-.078	.121	.142
MEDS8	.092	-.122	.007	.608	-.002	.037	.027	.041	.136	-.087
PAR1	.148	.071	.775	.145	.042	.106	.102	-.021	-.062	-.017
PAR2	.087	.034	.863	.262	.063	.015	-.007	-.029	.072	-.011
PAR4R	.157	-.054	.325	-.128	.071	-.221	.119	-.003	.042	-.100
PAR8	.172	.020	.116	.294	.339	-.086	-.101	.172	.153	-.138
PAR9	.069	-.012	.715	.014	.011	-.058	.034	.139	-.057	.009
PAY1	.662	-.107	.066	.011	.035	-.175	-.126	-.074	-.066	.079

PAY2	.718	-.055	.108	.164	.082	-.137	-.013	-.063	.194	.015
PAY3	.725	-.070	.019	-.065	.054	-.078	-.154	-.003	-.202	.274
PAY4	.634	-.081	.042	.021	.006	-.107	-.198	.135	-.070	.025
PAY6	.634	-.074	.101	.059	-.116	-.093	.093	-.045	.142	.042
PAY8	.624	-.079	.008	.210	.016	.018	.102	-.015	-.018	.212
PAY9	.635	-.159	.067	.115	-.139	-.011	.162	.058	.244	-.108
PAY12	.215	-.135	-.090	-.106	-.178	.032	-.336	-.045	.037	.590

Extraction Method: Maximum Likelihood.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

From the above factor analysis, COMP7 and PAY12 were removed due to low factor loadings. COMP10 “It is ok to stop coming to treatment if I am feeling better” was not removed since this item was generated by multiple patients during initial interviews, and COMP5 was not removed since this sample population is not currently in treatment. Also according to the rotated factor matrix item loadings, there appears to be distinct latent factors for COMP, ICL, MEDS, PAR, and PAY. The only items that were not definitively loaded on a single factor were the items pertaining to insurance, and PAR8, which will not be discarded due to the specific population used for this factor analysis and their lack of experience with these items. Generally it is recommended to have a high N:p (usually 10:1) ratio or sample size compared to item number. However, the common conceptions about the N:p ratio are not “valid or useful,” and sample sizes of 100-200 with communalities around .5 are good at recovering latent factors (MacCallum et al. 1999). Thus, this analysis had an adequate sample size and was a good predictor of the underlying factor structure.

Scale Reliability

A measure of internal consistency for each dimension was analyzed using Cronbach's α. According to Nunnally's standards, a reliability estimate of 0.7 or greater is adequate for measures used in basic, non-applied research (Nunnally 1976).

Table 5.7: Reliability for Beliefs About Completing Treatment and Compliance

```
RELIABILITY
  /VARIABLES=COMP5 COMP8 COMP9 COMP10R COMP11R
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL MEANS.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.745	.749	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
COMP5	14.1862	6.388	.534	.354	.694
COMP8	14.6596	5.477	.563	.359	.679
COMP9	14.2500	6.092	.556	.380	.684
COMP10R	14.2287	6.263	.406	.176	.739
COMP11R	15.1223	6.012	.506	.298	.701

The internal consistency estimate for this dimension was .745, which is over Nunnally's cutoff value. Also, deleting any of these items would result in a decrease in α.

Table 5.8: Reliability for Internal Control Beliefs

```
RELIABILITY
  /VARIABLES=ICL3 ICL6 ICL7R ICL9 ICL10R
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL MEANS.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.815	.822	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ICL3	15.4427	8.667	.592	.388	.782
ICL6	15.2865	9.849	.567	.357	.792
ICL7R	15.3073	9.062	.609	.395	.777
ICL9	15.2083	8.710	.700	.519	.752
ICL10R	16.0885	7.935	.596	.366	.789

This dimension had an α of .815, and was adequately reliable.

Table 5.9: Reliability for Insurance Beliefs

```
RELIABILITY
  /VARIABLES=INS2 INS3 INS4 INS5R INS6R INS7R INS8R INS9R
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL MEANS.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.517	.525	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
INS2	20.1263	11.857	.186	.418	.501
INS3	20.1316	11.364	.283	.414	.471
INS4	19.3211	12.039	.070	.121	.547
INS5R	20.1105	10.501	.297	.288	.460
INS6R	20.5947	11.131	.346	.312	.453
INS7R	20.0158	9.254	.397	.273	.410
INS8R	19.6053	11.616	.130	.144	.525
INS9R	19.6947	11.081	.249	.167	.480

While the α for this dimension is low (.517) these items may only be relevant to patients in treatment. Thus, all of these items were retained for the final instrument because they have clinical relevance to actual patients.

Table 5.10: Reliability for Addiction Medication Beliefs

```
RELIABILITY
  /VARIABLES=MEDS1 MEDS3 MEDS4R MEDS8
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL MEANS.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.572	.613	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
MEDS1	10.1667	2.736	.441	.320	.428
MEDS3	10.0365	2.915	.552	.366	.374
MEDS4R	11.4062	3.269	.118	.026	.719
MEDS8	10.2969	2.922	.418	.251	.452

The overall α for this dimension is 0.572, however, this includes MEDS4 or the question about medication side effects. This question was biased for pharmacy students as discussed previously and was retained for the final instrument. A minimum of 3 items per factor is critical (Velicer and Jackson 1990), and MEDS1, 3, and 8 would still provide an adequate reliability estimate of 0.719.

Table 5.11: Reliability for Parity Beliefs

```
RELIABILITY
  /VARIABLES=PAR1 PAR2 PAR4R PAR8 PAR9
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL MEANS.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.722	.702	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PAR1	14.6943	7.463	.627	.551	.611
PAR2	14.9223	7.072	.726	.617	.566
PAR4R	15.2073	9.134	.308	.123	.746
PAR8	14.3731	11.152	.152	.086	.769
PAR9	14.9585	7.530	.614	.442	.617

The α for this dimension is above 0.7, thus has adequate reliability.

Table 5.12: Reliability for Payment Barriers and Beliefs

```
RELIABILITY
  /VARIABLES=PAY1 PAY2 PAY3 PAY4 PAY6 PAY8 PAY9
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL MEANS.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.851	.855	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PAY1	21.7725	12.166	.637	.433	.830
PAY2	21.4709	13.591	.679	.486	.822
PAY3	21.7143	13.099	.665	.490	.822
PAY4	21.5767	13.224	.602	.407	.832
PAY6	21.5608	14.088	.587	.378	.834
PAY8	21.7407	13.938	.594	.404	.833
PAY9	21.6243	14.225	.554	.353	.839

The α estimate for this dimension is quite high (.851), and removing any of the items would result in a lower estimate of reliability. Since keeping the number of items minimal is critical, these 7 items were reanalyzed for relevance for the current study. PAY2 was removed since it is very similar to PAY1.

Final Item Pool for Patients

The resulting 33 items were retained as the final item pool to administer to patients in treatment for substance dependence issues:

Patients in Treatment Item Pool
Internal Control Beliefs – Starred items are reversed coded
Higher scores represent higher levels of perceived behavioral control and self-efficacy
[ICL 3] I am in control of my health.
[ICL 6] What happens to me in the future mostly depends on me.
[ICL 7] There is little I can do to change many of the important things in my life.*
[ICL 9] I can do just about anything I really set my mind to.
[ICL 10] I often feel helpless in dealing with problems in my life.*
Insurance Beliefs
Higher scores represent less barriers due to insurance or more positive beliefs towards insurance.
[INS 2] I am satisfied with how much insurance I have for addiction medications.
[INS 3] I am satisfied with how much insurance I have for substance dependence treatment.
[INS 4] I think having health insurance will help a person if they have substance dependence issues.
[INS 5] My health insurance, or lack of insurance, has caused me to end a treatment service before I thought I was ready.*
[INS 6] My health insurance, or lack of insurance, has caused extra worry during my treatment.*
[INS 7] I am, or would be, scared to use insurance to pay for treatment because I wouldn't want an insurer to know about my substance dependence issues.*
[INS 8] I am, or would be, uncomfortable using health insurance for substance dependence treatment.*
[INS 9] I believe using health insurance for treatment would prevent a person from having health insurance in the future.*
Parity Beliefs
Higher scores represent stronger parity beliefs.
[PAR 1] I think mental health should be treated like any other physical illness.
[PAR 2] I think substance dependence should be treated like any other physical illness.
[PAR 4] I think patients should pay more from their own savings for substance dependence treatment than for other medical problems.*
[PAR8] It is just as important to treat my substance dependence issues as it is to treat my other health issues.
[PAR9] I think substance dependence is a disease like any other disease.

Payment Barriers and Beliefs
Higher scores represent more payment barriers.
[PAY 1] I cannot afford substance dependence treatment.
[PAY3] I constantly worry about how I'm going to pay for my treatment.
[PAY 4] I think getting this treatment for my addiction problems is a financial drain on my family.
[PAY 6] The amount of money I have to pay from my own savings for treatment is too high.
[PAY 8] I cannot afford medications for substance dependence.
[PAY 9] I have made financial sacrifices to pay for substance dependence treatment.
Addiction Medication Beliefs
Higher scores represent stronger beliefs about medications for substance dependence.
[MEDS 1] Medications can really help a person overcome substance dependence issues.
[MEDS 3] Addiction medications are an important part of treatment.
[MEDS 4] I am scared of the side effects of addiction medications.*
[MEDS 8] I think addiction medications will help me with treatment.
Beliefs About Completing Treatment and Compliance
Higher scores represent stronger intentions in completing treatment or better compliance.
[COMP 5] I believe I will complete treatment.
[COMP 8] I always come to treatment when I am supposed to.
[COMP 9] I will finish the full treatment I am supposed to.
[COMP10] It is ok to stop coming to treatment if I am feeling better.*
[COMP11] It is hard for me to make it to all of my treatment sessions.*

Factor Analysis for General Population Survey

Using the same sample of pharmacy students used previously, the survey was then slightly adjusted in order to allow for the general public to complete the questionnaire. Specifically, INS2, INS3, INS5, INS6, PAY6 and all the COMP items were removed for factor analysis since they pertained only specifically to patients in treatment. A factor analysis was run with the remaining items (table 5.13).

Table 5.13: Factor Analysis for General Public Instrument

```
FACTOR
  /VARIABLES ICL3 ICL6 ICL7R ICL9 ICL10R INS4 INS7R INS8R INS9R PAR1 PAR2 PAR4R
PAR8 PAR9 PAY1 PAY4 PAY8 PAY9 MEDS1 MEDS3 MEDS4R MED
   S8
  /MISSING PAIRWISE
  /ANALYSIS ICL3 ICL6 ICL7R ICL9 ICL10R INS4 INS7R INS8R INS9R PAR1 PAR2 PAR4R
PAR8 PAR9 PAY1 PAY4 PAY8 PAY9 MEDS1 MEDS3 MEDS4R MEDS
   8
  /PRINT INITIAL KMO EXTRACTION ROTATION
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION ML
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX.
```

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.746
Bartlett's Test of Sphericity	Approx. Chi-Square	1219.105
	Df	231.000
	Sig.	.000

Communalities

	Initial	Extraction
ICL3	.481	.494
ICL6	.443	.459
ICL7R	.471	.484
ICL9	.563	.693
ICL10R	.479	.521
INS4	.251	.390
INS7R	.304	.344
INS8R	.185	.159
INS9R	.262	.540
PAR1	.586	.671
PAR2	.646	.834
PAR4R	.234	.143
PAR8	.222	.291
PAR9	.488	.506
PAY1	.403	.461
PAY4	.362	.457
PAY8	.383	.427

PAY9	.372	.426
MEDS1	.396	.474
MEDS3	.472	.634
MEDS4 R	.125	.099
MEDS8	.369	.382

Extraction Method: Maximum Likelihood.

As far as communalities under the 0.4 cutoff, the wording for INS4 was changed after this analysis and INS7 and INS8 were changed to future tense for example “I would be uncomfortable using health insurance for substance dependence treatment.” PAR4 was retained for relevance, PAR8 was changed to impersonal tense for both instruments, and MEDS4 remained unchanged. Lastly, MEDS8 was changed to “I don’t think addiction medications will help with substance dependence issues” for both the patient and general public instruments. Six latent factors were initially generated that explained almost 60% of the variance (table 5.14).

Table 5.14: Factor Analysis Results for General Public Instrument

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.773	17.148	17.148	2.831	12.867	12.867	2.533	11.513	11.513
2	3.386	15.389	32.537	3.208	14.582	27.449	2.061	9.366	20.879
3	1.862	8.466	41.003	1.504	6.838	34.287	1.770	8.044	28.923
4	1.558	7.083	48.086	1.008	4.583	38.870	1.625	7.385	36.308
5	1.425	6.479	54.565	.867	3.942	42.811	1.112	5.054	41.362
6	1.075	4.884	59.449	.470	2.138	44.950	.789	3.588	44.950
7	.981	4.461	63.910						
8	.918	4.172	68.083						
9	.825	3.750	71.833						
10	.771	3.503	75.335						
11	.719	3.269	78.605						

12	.667	3.031	81.635						
13	.592	2.692	84.327						
14	.538	2.445	86.772						
15	.504	2.289	89.061						
16	.434	1.972	91.033						
17	.396	1.800	92.833						
18	.389	1.768	94.601						
19	.358	1.627	96.228						
20	.330	1.500	97.728						
21	.270	1.226	98.954						
22	.230	1.046	100.000						

Extraction Method: Maximum Likelihood.

Rotated Factor Matrix[a]

	Factor					
	1	2	3	4	5	6
ICL3	.644	-.037	-.251	.081	.086	-.023
ICL6	.674	.027	-.018	-.010	-.016	.058
ICL7R	.658	.002	-.097	-.104	.166	.056
ICL9	.805	.051	-.107	.039	.064	.161
ICL10R	.606	-.055	-.289	.050	.197	-.159
INS4	.066	.029	.006	.240	.082	.566
INS7R	.143	.046	-.102	.156	.515	.147
INS8R	.058	.081	.058	.102	.368	-.014
INS9R	.097	.047	-.066	-.075	.717	.063
PAR1	.079	.788	.089	.175	.070	-.027
PAR2	.030	.860	.030	.223	.025	.203
PAR4R	-.073	.329	.062	-.100	.116	.050
PAR8	.068	.118	.157	.168	.072	.464
PAR9	.010	.705	.074	.058	.007	-.013
PAY1	-.180	.089	.637	.020	-.083	.085
PAY4	-.125	.062	.638	.047	-.151	.072
PAY8	-.146	.042	.572	.251	.113	.003
PAY9	-.221	.107	.576	.088	.138	.084
MEDS1	.127	.092	.093	.654	.057	.096
MEDS3	.018	.167	.109	.748	.124	.140
MEDS4R	-.115	-.010	-.203	.169	.087	.092
MEDS8	-.113	.003	.080	.542	.025	.261

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.773	17.148	17.148	2.831	12.867	12.867	2.533	11.513	11.513
2	3.386	15.389	32.537	3.208	14.582	27.449	2.061	9.366	20.879
3	1.862	8.466	41.003	1.504	6.838	34.287	1.770	8.044	28.923
4	1.558	7.083	48.086	1.008	4.583	38.870	1.625	7.385	36.308
5	1.425	6.479	54.565	.867	3.942	42.811	1.112	5.054	41.362
6	1.075	4.884	59.449	.470	2.138	44.950	.789	3.588	44.950
7	.981	4.461	63.910						
8	.918	4.172	68.083						
9	.825	3.750	71.833						
10	.771	3.503	75.335						
11	.719	3.269	78.605						
12	.667	3.031	81.635						
13	.592	2.692	84.327						
14	.538	2.445	86.772						
15	.504	2.289	89.061						
16	.434	1.972	91.033						
17	.396	1.800	92.833						
18	.389	1.768	94.601						
19	.358	1.627	96.228						
20	.330	1.500	97.728						
21	.270	1.226	98.954						

a. Rotation converged in 6 iterations.

It was evident from the rotated factor matrix that 5 underlying factors were present. This was the *a priori* model proposed since the beliefs on completing treatment and compliance dimension was removed. Further, reliability estimates were calculated for each of the dimensions (table 5.15).

Table 5.15: Reliability Estimates for General Public Instrument

DIMENSION	COEFFICIENT α
ICL [3, 6, 7, 9, 10]	0.815
INS [4, 7, 8, 9]	0.518
PAR [1, 2, 4, 8, 9]	0.722
PAY [1, 4, 8, 9]	0.725
MEDS [1, 3, 4, 8]	0.572* (0.719 with MEDS4 removed for this specific sample)

Final Item Pool for General Public

Since items had strong factor loadings and had adequate reliability, a subset of the patient population questionnaire was given to the general public. This subset included the following 22 items:

General Population Item Pool
Internal Control Beliefs – Starred items are reverse coded
Higher scores represent higher levels of perceived behavioral control and self-efficacy
[ICL 3] I am in control of my health.
[ICL 6] What happens to me in the future mostly depends on me.
[ICL 7] There is little I can do to change many of the important things in my life.*
[ICL 9] I can do just about anything I really set my mind to.
[ICL 10] I often feel helpless in dealing with problems in my life.*

Insurance Beliefs
Higher scores represent less barriers due to insurance or more positive beliefs towards insurance.
[INS 4] I think having health insurance will help a person if they have substance dependence issues.
[INS 7] I would be scared to use health insurance to pay for treatment because I wouldn't want an insurer to know about my substance dependence issues.*
[INS 8] I would be uncomfortable using health insurance for substance dependence treatment.*
[INS 9] I believe using health insurance for treatment would prevent a person from having health insurance in the future.*
Parity Beliefs
Higher scores represent stronger parity beliefs.
[PAR 1] I think mental health should be treated like any other physical illness.
[PAR 2] I think substance dependence should be treated like any other physical illness.
[PAR 4] I think patients should pay more from their own savings for substance dependence treatment than for other medical problems.*
[PAR8] It is just as important to treat substance dependence issues as it is to treat other health issues.
[PAR9] I think substance dependence is a disease like any other disease.
Payment Barriers and Beliefs
Higher scores represent more payment barriers.
[PAY 1] I could not afford substance dependence treatment if I needed it.
[PAY 4] If I needed treatment for substance dependence issues, it would be a financial drain on my family.
[PAY 8] I could not afford medications for substance dependence if I needed them.
[PAY 9] I would have to make financial sacrifices to pay for substance dependence treatment if I needed it.
Addiction Medication Beliefs
Higher scores represent stronger beliefs about medications for substance dependence.
[MEDS 1] Medications can really help a person overcome substance dependence issues.
[MEDS 3] Addiction medications are an important part of treatment.
[MEDS 4] I would be scared of the side effects of addiction medications.*
[MEDS 8] I don't think addiction medications will help with substance dependence issues.*

CHAPTER 6

INSTRUMENT CONFIRMATION

Patient Sample

The patient population incorporated a sample of patients from treatment facilities in Tennessee and Georgia; however, the sample of patients resided in 31 different states. The sample was a convenience sample design and 187 patients volunteered to partake in the study. The mean age of patients was 37.85 years (range = 18-71 years). Seventy percent of patients were male and 23.5% reported current unemployment. Sixty-five percent of patients reported they had some sort of college training, while more than 50% of the patients had been to treatment previously. Finally, 88% of the patient sample was Caucasian, 5% was African American, and 8% reported another ethnicity.

In order to use the current sample of patients to generalize findings to patients in treatment in the United States, the Treatment Episode Data Set of Admissions to treatment facilities was examined (SAMHSA 2010). This data set has information for over 1.8 million treatment entry points in 2008. More than 50% of patients across the United States had been to treatment previously, 68% of patients were male, and 35% reported unemployment. While the current study population mirrored national trends with respect to previous treatment, gender, and unemployment, the current study was slightly different in regards to education and ethnicity. The national rate of education was only 22% reporting some college training. Further, 65% of patients were Caucasian, 21% were African American, and 8% reported another ethnicity. Therefore

the current study population was more educated and more Caucasian than national trends in treatment facilities. More information on the current study population can be found in paper 1.

Patient Instrument Dimensions

The patient instrument (Appendix E) was administered to 187 patients currently in treatment for substance dependence. Factor analysis was first conducted without *a priori* restrictions (table 6.1) on the number of dimensions and allowing for factors to correlate since this was a new population.

Table 6.1: EFA in Patient Population

```
FACTOR
/VARIABLES PAY9 PAY8 PAY6 PAY4 PAY3 PAY1 PAR4R PAR9 PAR8 PAR2 PAR1 MEDS8R
MEDS4R MEDS3 MEDS1 INS9R INS8R INS7R INS6R INS5R INS4 IN    S3 INS2 ICL7R
ICL10R ICL9 ICL6 ICL3 COMP11R COMP10R COMP9 COMP8 COMP5
/MISSING PAIRWISE
/ANALYSIS PAY9 PAY8 PAY6 PAY4 PAY3 PAY1 PAR4R PAR9 PAR8 PAR2 PAR1 MEDS8R
MEDS4R MEDS3 MEDS1 INS9R INS8R INS7R INS6R INS5R INS4 INS    3 INS2 ICL7R
ICL10R ICL9 ICL6 ICL3 COMP11R COMP10R COMP9 COMP8 COMP5
/PRINT KMO ROTATION
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION ML
/CRITERIA ITERATE(25) DELTA(0)
/ROTATION OBLIMIN.
```

Pattern Matrix[a]

	Factor								
	1	2	3	4	5	6	7	8	9
[PAY9]	.016	.706	.168	-.108	.025	.048	.121	-.056	.019
[PAY8]	1.046	-.040	-.028	.011	.011	-.030	-.168	-.008	.060
[PAY6]	.308	.409	.029	-.084	-.164	.181	.044	.123	.000
[PAY4]	.129	.459	.183	-.184	.022	.138	.199	-.065	-.106
[PAY3]	.194	.499	.079	-.113	-.136	.225	.106	.016	-.111
[PAY1]	.549	.132	.048	-.036	.058	-.052	.231	.017	-.032
PAR4R	.020	.013	.039	.016	-.053	-.662	.077	.090	.220

[PAR9]	.141	-.007	.698	.192	-.125	-3.171E-5	-.083	-.089	.029
[PAR8]	.065	.010	.409	-.154	-.104	-.165	-.026	.116	.089
[PAR2]	-.060	.040	.698	.003	-.002	-.032	.088	-.010	-.177
[PAR1]	.010	.200	.658	.086	-.052	-.066	-.052	-.019	-.011
MEDS8R	-.018	-.070	-.077	.012	-.668	-.344	-.001	-.243	.125
MEDS4R	-.049	-.008	-.084	-.292	-.286	-.053	.133	.134	.108
[MEDS3]	-.032	.084	.165	.112	-.730	.109	-.101	-.096	-.035
[MEDS1]	.032	.005	.046	-.069	-.671	.092	.005	.110	-.048
INS9R	-.019	-.112	.020	.008	-.061	.067	.185	.126	.601
INS8R	.033	.020	-.079	.080	-.086	-.086	-.195	-.046	.629
INS7R	-.106	-.023	.059	-.079	.096	-.102	-.024	-.158	.619
INS6R	-.048	-.975	.051	-.098	.006	.028	.070	-.019	.044
INS5R	-.165	-.053	-.094	-.014	.072	-.062	-.421	.037	.359
[INS4]	-.050	.101	.200	.127	-.045	-.134	-.021	.171	.105
[INS3]	-.145	-.372	.063	.498	.002	.162	-.015	.049	.036
[INS2]	-.103	-.411	.190	.539	.032	.038	.249	.085	.112
ICL7R	-.016	-.103	.049	-.105	.016	-.547	-.074	-.018	-.014
ICL10R	-.063	-.109	-.028	-.113	.099	.148	.004	.441	.140
[ICL9]	-.010	.001	.124	-.133	-.069	.051	-.154	.470	-.040
[ICL6]	.038	-.037	.107	.076	-.033	-.279	.058	.466	-.179
[ICL3]	-.047	.032	-.087	.077	.008	-.037	-.091	.504	.012
COMP11R	-.166	.068	.172	-.173	.000	-.138	-.043	.136	.156
COMP10R	.021	.001	.479	-.294	.023	-.166	-.201	-.106	.181
[COMP9]	.072	-.152	.213	-.052	-.069	.133	-.648	.177	.006
[COMP8]	-.117	-.042	.419	-.002	-.074	.155	-.094	.118	.063
[COMP5]	-.069	.004	.074	-.020	-.083	-.224	-.423	.187	-.028

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 25 iterations.

From this table, there were 5 clear dimensions with 3 or more highly loading variables needed to define a dimension (Velicer and Jackson 1990). The variables for “beliefs about of completing treatment and compliance” did not factor onto a single dimension

nor were there 3 variables factoring onto any one dimension. These variables were removed from the final instrument. The analysis was run again with 5 *a priori* selected dimensions (table 6.2).

Table 6.2: Confirmatory Factor Analysis, Patient Population

```
FACTOR
/VARIABLES PAY9 PAY8 PAY6 PAY4 PAY3 PAY1 PAR9 PAR8 PAR2 PAR1 MEDS8R
MEDS3 MEDS1 INS9R INS8R INS7R INS5R ICL10R ICL9 ICL6 ICL3
/MISSING PAIRWISE   /ANALYSIS PAY9 PAY8 PAY6 PAY4 PAY3 PAY1 PAR9 PAR8 PAR2
PAR1 MEDS8R MEDS3 MEDS1 INS9R INS8R INS7R INS5R ICL10R ICL9 ICL6 ICL3   /PRINT
KMO ROTATION
/CRITERIA FACTORS(5) ITERATE(25)
/EXTRACTION ML
/CRITERIA ITERATE(25) DELTA(0)
/ROTATION OBLIMIN.
```

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.771
Bartlett's Test of Sphericity	Approx. Chi-Square	1210.494
	Df	210
	Sig.	.000

Pattern Matrix[a]

	Factor				
	1	2	3	4	5
[PAY9]	.760	.178	-.089	.120	.000
[PAY8]	.502	-.093	.097	-.112	-.117
[PAY6]	.711	-.103	.173	-.067	.212
[PAY4]	.705	.153	-.134	-.034	-.092
[PAY3]	.766	-.001	.067	-.108	.043
[PAY1]	.499	-.022	-.030	-.127	-.159
[PAR9]	-.008	.662	.154	.001	-.052
[PAR8]	.129	.385	.121	.220	.144
[PAR2]	-.045	.822	-.078	-.111	-.036
[PAR1]	.146	.661	.049	.066	.026
MEDS8R	-.091	-.016	.659	.208	-.212
[MEDS3]	.031	.204	.687	-.047	-.055

[MEDS1]	.100	.006	.650	-.079	.167
INS9R	-.065	-.061	.057	.460	.109
INS8R	-.097	-.006	.140	.590	-.027
INS7R	.004	.050	-.101	.780	-.080
INS5R	-.257	-.010	-.008	.450	.213
ICL10R	-.031	-.128	-.101	.069	.580
[ICL9]	.071	.095	.070	.019	.440
[ICL6]	-.118	.211	.043	-.150	.265
[ICL3]	-.051	.008	-.023	.017	.525

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 9 iterations.

There were 5 well-defined dimensions with strongly-loading variables. According to the Factor Correlation Matrix (table 6.3) the only dimensions that were correlated were Payment Barriers and Insurance Barriers. They correlated in opposite directions since INS represents less barriers due to insurance and PAY represents more barriers due to payment barriers. Therefore, the correlation between these dimensions is reasonable and expected.

Table 6.3: Factor Correlation Matrix, Patient Population

Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000				
2	.192	1.000			
3	.142	.312	1.000		
4	-.364**	-.039	.136	1.000	
5	-.183	.204	.083	.088	1.000

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

*p < 0.05

**p < 0.01

Patient Instrument Reliability

Each dimension within the patient instrument was tested for reliability (table 6.4) and examined against Nunnally's cutoff of 0.7 (Nunnally 1976). Four of the five dimensions (PAY, PAR, MEDS, INS) were above the 0.7 cutoff while ICL was not. The internal control dimension clearly factored onto a single dimension (table 6.2 above), but since its reliability was low, it was not included in the final instrument. According to other studies relating to substance dependence, the factor structure of locus of control instruments could depend on male/female characteristics and drug abused (Hartmann 1999) or on treatment type by inpatient or outpatient (Hirsch et al. 1997). Therefore, the internal locus of control dimension was not included in the final instrument.

Table 6.4: Reliability of Final Patient Instrument

```
RELIABILITY
/VARIABLES=PAY9 PAY8 PAY6 PAY4 PAY3 PAY1
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/STATISTICS=SCALE ANOVA
/SUMMARY=TOTAL.
```

Cronbach's Alpha	N of Items
.847	6

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
[PAY9]	14.16	24.695	.627	.822
[PAY8]	14.68	26.510	.566	.833
[PAY6]	14.47	24.932	.630	.821
[PAY4]	14.57	24.750	.666	.814
[PAY3]	14.98	24.100	.720	.803
[PAY1]	14.71	26.466	.562	.834

```
RELIABILITY
/VARIABLES=PAR9 PAR8 PAR2 PAR1
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/STATISTICS=SCALE
/SUMMARY=TOTAL.
```

Cronbach's Alpha	N of Items
.774	4

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
[PAR9]	13.39	3.793	.644	.682
[PAR8]	13.32	5.044	.444	.781
[PAR2]	13.44	3.879	.624	.694
[PAR1]	13.45	3.947	.607	.703

```
RELIABILITY
/VARIABLES=MEDS8R MEDS3 MEDS1
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/STATISTICS=SCALE
/SUMMARY=TOTAL.
```

Cronbach's Alpha	N of Items
.719	3

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
MEDS8R	7.6398	3.529	.487	.694
[MEDS3]	7.4946	3.149	.580	.578
[MEDS1]	7.6613	3.652	.557	.614

```
RELIABILITY
/VARIABLES=INS9R INS8R INS7R INS5R
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/STATISTICS=SCALE
/SUMMARY=TOTAL.
```

Cronbach's Alpha	N of Items
.705	4

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
INS9R	11.9006	6.634	.394	.701
INS8R	11.2155	5.981	.524	.620
INS7R	11.3260	5.876	.573	.588
INS5R	11.4033	6.698	.479	.650

```
RELIABILITY
/VARIABLES=ICL10R ICL9 ICL6 ICL3
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/STATISTICS=SCALE
/SUMMARY=TOTAL.
```

Cronbach's Alpha	N of Items
.527	4

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ICL10R	12.1576	3.707	.268	.508
[ICL9]	11.0543	4.106	.338	.439
[ICL6]	10.9891	4.229	.282	.482
[ICL3]	11.5652	3.657	.388	.389

Patient Instrument Confirmation

In order to confirm the final structure of the patient instrument, four different models were analyzed using LISREL 8.80 (table 6.5). The target, four-factor oblique model was compared to a one-factor model (with all variables loading onto a single, latent variable), a three-factor model (with payment and insurance variables loading onto a single latent variable and medications and parity each having their own latent variable), and a four-factor orthogonal model (with all latent variables uncorrelated.) The chi-squared statistic tested (H_o) that the predicted covariance matrix was equivalent to the sample covariance matrix. Although all models gave a significant chi-squared statistic or rejected H_o, the chi-squared statistic is directly dependent on sample size (Lance and Vandenberg 2001). Therefore analyses involving larger sample sizes are likely to be statistically significant. As a result, the chi-squared statistic was examined in combination with other goodness-of-fit indices to determine the best structure model for the data. The target, four-factor oblique model had the lowest chi-squared statistic compared to the other models, and it also significantly differed from the other models as shown under “Model Comparisons” (table 6.5).

Table 6.5: Goodness-of-Fit Indices for Patient Instrument

Model	Df	χ^2	SRMSR	RMSEA	CFI	TLI
One-Factor Model	119	612.59 (p<0.001)	0.14	0.17	0.70	0.66
Three-Factor Model	116	314.74 (p<0.001)	0.092	0.10	0.88	0.86
Four-Factor Orthogonal	119	328.28 (p<0.001)	0.15	0.095	0.87	0.86
Four-Factor Oblique	113	240.48 (p<0.001)	0.075	0.075	0.92	0.91

Model Comparisons		
	Δdf	$\Delta\chi^2$
Four-Factor Oblique vs. One-Factor Model	6	372.11 (p<0.001)
Four-Factor Oblique vs. Three-Factor Model	3	74.26 (p<0.001)
Four-Factor Oblique vs. Four-Factor Orthogonal Model	6	87.8 (p<0.001)

Other goodness-of-fit indices were examined including the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), the Standardized Root Mean Residual (SRMSR), and the Root Mean Squared Error of Approximation (RMSEA). The TLI was greatest in the target, four-factor oblique model with a value of 0.91 which is greater than the cutoff (0.90) defined elsewhere (Bentler and Bonett 1980). The CFI was also greatest in the target model with a value of 0.92 which again is above the cutoff (≥ 0.90) (Marsh and Hau 1996). Additionally, the SRMSR value for the target model was the only model to fit within the range of ≤ 0.08 (McDonald and Marsh 1990; Lance and Vandenberg 2001). Though the target model just missed the RMSEA cutoff of ≤ 0.06 (Browne and Cudeck 1993; Lance and Vandenberg 2001), it was evident from the chi-squared statistic, SRMSR, CFI, and TLI indices that the four-target oblique model fit the data better than the other models analyzed.

Other differences between models must be noted. In comparing the four-factor oblique model to the four-factor orthogonal model, the uncorrelated model significantly fit the data worse than the oblique model. Therefore, the dimensions significantly correlated with each other. Further, in the comparison between the four-factor oblique model and the one-factor model, the one-factor model fit the data very poorly indicating

discriminant validity between dimensions (Lance and Vandenberg 2001). Lastly, in comparing the target model to the three-factor model, the target four-factor model fits the data better indicating that four underlying latent factors most significantly represent the data. The structure that best fits the data is modeled below (figure 6.1). The final patient instrument consisted of 17 items loading onto 4 distinct latent variables.

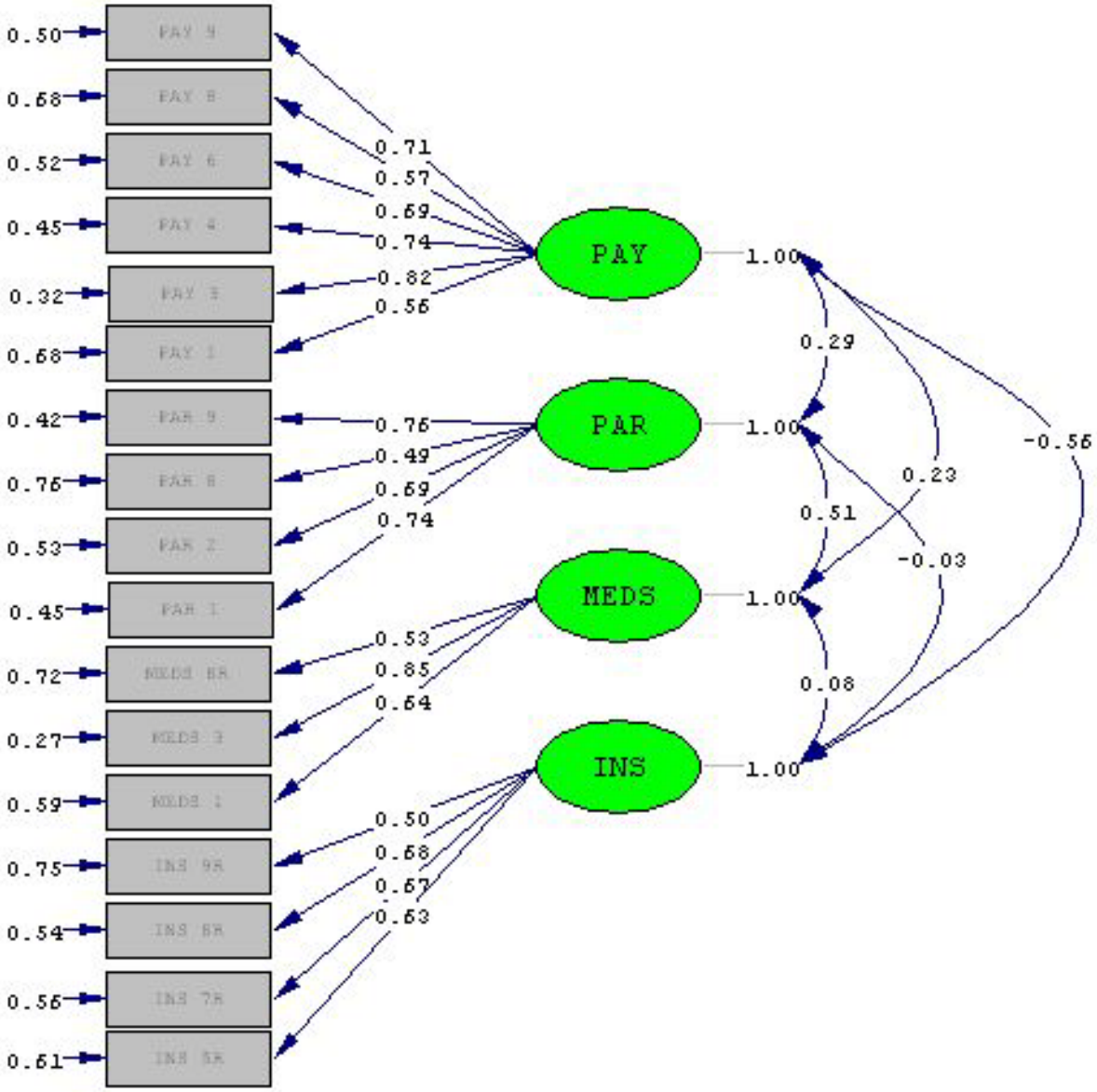


Figure 6.1: Path Diagram for Final Patient Instrument

According to the Path Diagram, some of the factors were significantly correlated (table 6.6). All correlations were based on Pearson's *r* for degrees of freedom of > 100. The four-factor oblique model had 113 degrees of freedom.

Table 6.6: Correlation Coefficients Between Latent Variables

	PAY	PAR	MEDS	INS
PAY	1.00			
PAR	0.29*	1.00		
MEDS	0.23*	0.51**	1.00	
INS	-0.56**	-0.03	0.08	1.00

*p < 0.05
**p < 0.01

General Public Sample

The sample representing a portion of the general public was a subset of people that participated in an online survey conducted by Zoomerang® Incorporated. E-mail messages randomly inviting people to participate in a survey about "Healthcare Opinions" were sent to individuals over the age of 18 and who currently resided in Georgia, Tennessee, or Alabama. The survey was available online for a little over 24 hours, and 316 people volunteered to take the survey.

Fifty-four percent of participants were female, and the average age of participants was 46.5 years (range = 18-82 years of age). Eighteen percent of participants reported not having any health insurance which is slightly higher than the national average of 15.3% but does reflect higher regional percentages (PewCenter 2010). When asked if participants thought they had an addiction issue, 6.3% of participants reported they thought they did which is slightly lower than national percentages reported by SAMHSA (2010), while 6 participants reported they had

previously been to treatment for a drug or alcohol addiction issue. Eighteen percent of participants reported having a family member with an addiction issue.

Further, the general public sample from Zoomerang ® was examined based on ethnicity and employment compared to national averages. The general public sample was 82% Caucasian and 11.1% African American. According to the US Census Bureau, in 2009 the United States was approximately 75% Caucasian and 12.3% African American (USCB 2010), so the sub-sample was similar based on ethnicity. Also, the unemployment rate within the general public sample was 10.2% which was slightly higher than the national average of 9.7% according to the US Bureau of Labor Statistics (2010). However, the unemployment rates in the Southeast are slightly higher than national averages. Therefore, the general public sample appears to reflect demographic characteristics typical of the average American.

General Public Instrument

A subset of the patient instrument (Appendix F) was administered to the general public using an online survey conducted by Zoomerang®. The inclusion criteria were adults aged 18+ and residing in Georgia, Alabama, or Tennessee. All eligible respondents were sent an e-mail about participating and could opt to participate for Zoomerang® points which collectively can be redeemed for various items. The questionnaire remained open until the target sample size (N=300) was achieved. 315 respondents answered the questionnaire over three days. Factor analysis was conducted with the data without *a priori* restrictions (table 6.7).

Table 6.7: EFA in the General Public Population

```
FACTOR
/VARIABLES PAY9 PAY8 PAY4 PAY1 PAR4R PAR9 PAR8 PAR2 PAR1 MEDS8R MEDS4R
MEDS3 MEDS1 INS9R INS8R INS7R INS4 ICL7R ICL10R ICL9 ICL6 I    CL3
/MISSING PAIRWISE
/ANALYSIS PAY9 PAY8 PAY4 PAY1 PAR4R PAR9 PAR8 PAR2 PAR1 MEDS8R MEDS4R
MEDS3 MEDS1 INS9R INS8R INS7R INS4 ICL7R ICL10R ICL9 ICL6 IC    L3
/PRINT ROTATION
/PLOT EIGEN
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION ML
/CRITERIA ITERATE(25) DELTA(0)
/ROTATION OBLIMIN.
```

Pattern Matrix[a]

	Factor					
	1	2	3	4	5	6
[PAY9]	.012	.693	-.010	-.020	.030	.043
[PAY8]	.041	.596	.009	.118	-.119	-.171
[PAY4]	-.054	.851	-.063	-.064	-.003	.029
[PAY1]	-.047	.879	-.006	.056	.040	-.125
PAR4R	-.127	-.120	.302	.028	.269	.040
[PAR9]	.045	-.031	.656	.025	-.016	-.104
[PAR8]	.016	.221	.430	-.179	.246	.110
[PAR2]	-.052	.025	.829	-.146	.080	-.119
[PAR1]	-.013	-.052	.649	-.063	-.142	.094
MEDS8R	.016	-.167	-.059	-.437	.144	-.011
MEDS4R	-.030	-.311	-.045	-.303	.254	-.050
[MEDS3]	-.049	.080	.126	-.741	-.152	.075
[MEDS1]	.003	.024	.099	-.784	-.166	-.146
INS9R	-.004	-.185	.039	.088	.421	.091
INS8R	.033	.106	.019	-.016	.786	.019
INS7R	.014	-.128	-.065	.029	.571	.048
[INS4]	.131	.068	.191	-.275	.161	.052
ICL7R	-.041	-.058	-.119	-.074	.106	.551
[ICL10R]	.035	-.122	-.061	.167	.085	.524
[ICL9]	.175	.063	.176	.019	-.130	.420
[ICL6]	1.037	-.065	.032	.039	.044	-.140

[ICL3]	.589	-.018	-.081	-.030	.020	.158

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 14 iterations.

From this analysis, 4 or 5 dimensions emerged. The reliability of ICL7R, ICL10R, and ICL9 was examined to determine its use in the final model. Cronbach's alpha was 0.525 which was below acceptability standards (Nunnally 1976). Since this dimension was also removed from the final patient instrument, it was not included in the final general public instrument either. The analysis was repeated with 4 dimensions determined *a priori* (table 6.8).

Table 6.8: Confirmatory Factor Analysis, General Public Population

```
FACTOR
/VARIABLES PAY9 PAY8 PAY4 PAY1 PAR9 PAR8 PAR2 PAR1 MEDS8R MEDS3 MEDS1
INS9R INS8R INS7R
/MISSING PAIRWISE
/ANALYSIS PAY9 PAY8 PAY4 PAY1 PAR9 PAR8 PAR2 PAR1 MEDS8R MEDS3 MEDS1
INS9R INS8R INS7R
/PRINT INITIAL KMO EXTRACTION ROTATION
/CRITERIA FACTORS(4) ITERATE(25)
/EXTRACTION ML
/CRITERIA ITERATE(25) DELTA(0)
/ROTATION OBLIMIN.
```

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.763
Bartlett's Test of Sphericity	Approx. Chi-Square	1604.018
	Df	91
	Sig.	.000

Pattern Matrix[a]

	Factor			
	1	2	3	4
[PAY9]	.680	.000	.048	.008
[PAY8]	.621	-.015	-.183	-.068

[PAY4]	.836	-.042	.001	.037
[PAY1]	.884	.002	-.016	-.060
[PAR9]	-.033	.701	-.027	-.071
[PAR8]	.180	.420	.262	.169
[PAR2]	.027	.811	.074	.133
[PAR1]	-.078	.671	-.074	.009
MEDS8R	-.171	-.063	.142	.439
[MEDS3]	.079	.052	-.092	.822
[MEDS1]	.041	.132	-.149	.694
INS9R	-.210	.025	.425	-.079
INS8R	.109	.032	.812	.011
INS7R	-.137	-.065	.580	-.024

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Factor Correlation Matrix

Factor	1	2	3	4
1	1.000			
2	.154	1.000		
3	-.410**	.074	1.000	
4	-.017	.450**	.117	1.000

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

**p < 0.01

Four factors, each with more than 3 strongly-loading variables were produced from the CFA analysis in SPSS. Further, the same dimensions were correlated as seen previously.

General Public Instrument Reliability

The reliability of each of the dimensions was examined for the general public instrument (table 6.9). All dimensions had approximate values that met Nunnally's criterion.

Table 6.9: Reliability of General Public Instrument

```
RELIABILITY
/VARIABLES=PAY9 PAY8 PAY4 PAY1
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	N of Items
.848	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
[PAY9]	9.40	8.069	.603	.840
[PAY8]	10.06	7.379	.624	.837
[PAY4]	9.45	7.617	.738	.787
[PAY1]	9.81	6.938	.795	.758

```
RELIABILITY
/VARIABLES=PAR9 PAR8 PAR2 PAR1
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	N of Items
.772	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
[PAR9]	11.69	4.369	.573	.733
[PAR8]	11.15	6.070	.489	.761
[PAR2]	11.50	4.767	.716	.642
[PAR1]	11.22	5.267	.564	.723

```
RELIABILITY
/VARIABLES=MEDS8R MEDS3 MEDS1
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	N of Items
.668	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
MEDS8R	6.7651	2.008	.338	.778
[MEDS3]	6.5524	1.840	.563	.464
[MEDS1]	6.6508	1.929	.571	.464

```
RELIABILITY
/VARIABLES=INS9R INS8R INS7R
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	N of Items
.663	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
INS9R	6.9206	3.545	.416	.643
INS8R	6.5175	2.696	.481	.565
INS7R	6.7333	2.801	.541	.475

General Public Instrument Confirmation

The final general public instrument was analyzed using LISREL 8.80 (table 6.10). The target, four-factor oblique model was compared to a one-factor model (with all variables loading onto a single, latent variable), a three-factor model (with payment and insurance variables loading onto a single latent variable and medications and parity each having their own latent variable), and a four-factor orthogonal model (with all latent variables uncorrelated.)

Table 6.10: Goodness-of-Fit Indices for General Public Patient Instrument

Model	df	χ^2	SRMSR	RMSEA	CFI	TLI
One-Factor Model	77	912.03 (p<0.001)	0.18	0.21	0.61	0.53
Three-Factor Model	74	293.71 (p<0.001)	0.088	0.097	0.90	0.87
Four-Factor Orthogonal	77	363.21 (p<0.001)	0.15	0.10	0.86	0.84
Four-Factor Oblique	71	202.92 (p<0.001)	0.074	0.073	0.94	0.92
Model Comparisons	Δdf	$\Delta\chi^2$				
Four-Factor Oblique vs. One-Factor Model	6	709.11 (p<0.001)				
Four-Factor Oblique vs. Three-Factor Model	3	90.79 (p<0.001)				
Four-Factor Oblique vs. Four-Factor Orthogonal Model	6	160.29 (p<0.001)				

The TLI was greatest in the target, four-factor oblique model with a value of 0.92 which is greater than the cutoff (0.90) defined elsewhere (Bentler and Bonett 1980). The CFI was also greatest in the target model with a value of 0.94 which again is above the cutoff (≥ 0.90) (Marsh and Hau 1996). Additionally, the SRMSR value for the target model was the only model to fit within the range of ≤ 0.08 (McDonald and Marsh 1990; Lance and Vandenberg 2001). Though the target model just missed the RMSEA cutoff of ≤ 0.06 (Browne and Cudeck 1993; Lance and Vandenberg 2001), it was evident from the chi-squared statistic, SRMSR, CFI, and TLI indices that the four-target oblique model fit the data better for the general public than the other models analyzed. Therefore, the final general public instrument consisted of 14 items loading onto 4 distinct latent variables (figure 6.2).

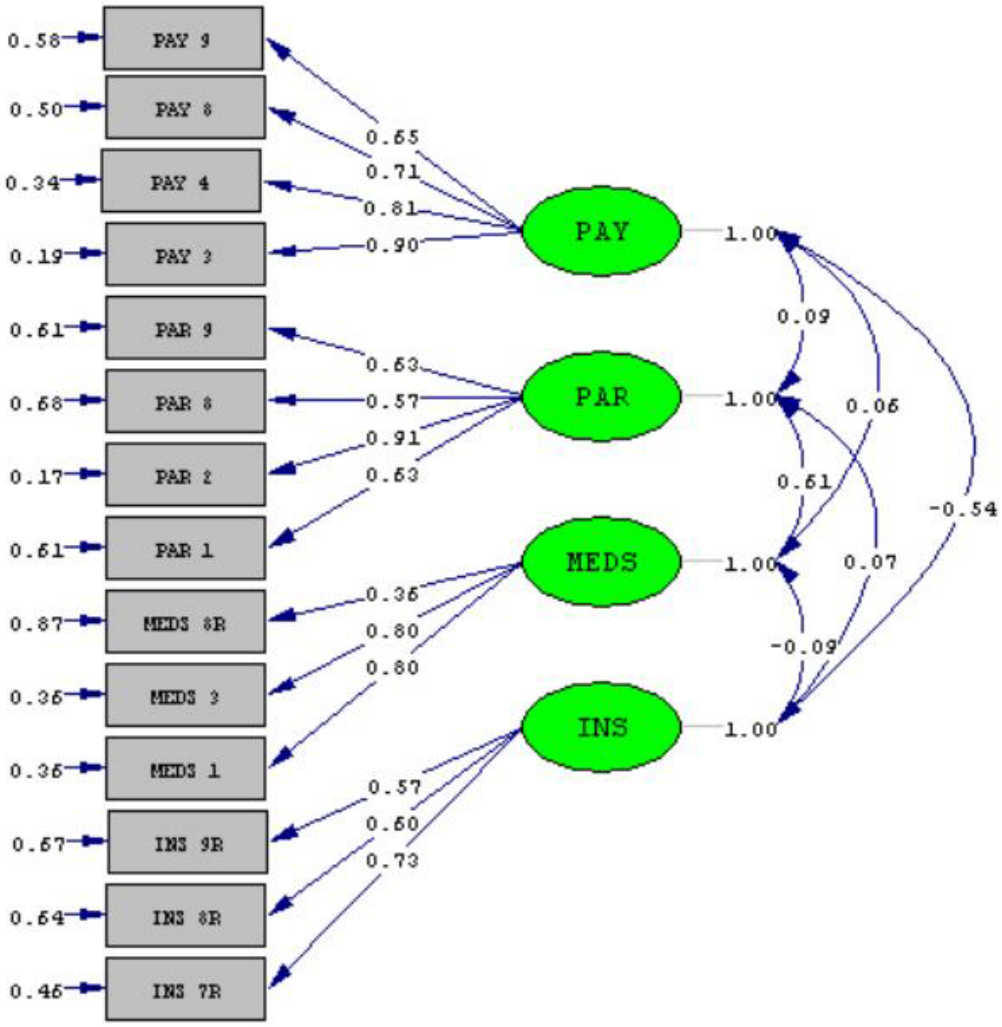


Figure 6.2: Path Diagram for Final General Public Instrument

According to the Path Diagram, some of the factors were significantly correlated (table 6.11). All correlations were based on Pearson's *r* for degrees of freedom of 71 for the four-factor oblique model.

Table 6.11: Correlation Coefficients Between Latent Variables

	PAY	PAR	MEDS	INS
PAY	1.00			
PAR	0.09	1.00		
MEDS	0.06	0.61**	1.00	
INS	-0.54**	0.07	-0.09	1.00

*p < 0.05
**p < 0.01

CHAPTER 7

PERCEIVED PARITY-LIKE BARRIERS AMONG PATIENTS IN TREATMENT FOR SUBSTANCE DEPDENDENCE[1]

[1] Brown, A.L. and M.A. Norton. To be submitted to the *Journal of Substance Abuse Treatment*

Abstract

This study examined parity-related perspectives and opinions of patients currently in treatment for substance dependence as well as beliefs about using medications to treat substance dependence. An instrument assessing the dimensions of perceived payment barriers, perceived insurance barriers, substance dependence medication beliefs, and general parity beliefs was given to 187 patients currently in various types of treatment for an alcohol and/or drug addiction issue. Patients more than agreed with parity for substance dependence and mental health 4.45 (.667) and agreed with using medications to treat substance dependence 3.80 (.868). Patients using private insurance to pay for treatment reported fewer payment barriers ($p<0.5$) and insurance barriers ($p<.05$) than patients not using private insurance to pay for treatment. Patients reporting using self-pay to pay for any portion of treatment reported more payment barriers ($p<.001$) and more insurance barriers ($p<.05$) compared to patients not paying for any portion of treatment. Patients reporting that paying for treatment would affect them completing treatment were more likely to report payment barriers ($p<.001$) and insurance barriers ($p<.001$). Lastly, 28% of patients reported that paying for treatment would be their biggest barrier to completing treatment. This study demonstrates that some patients are perceiving significant barriers in regards to paying for treatment and using health insurance to pay for treatment. These barriers could affect treatment compliance and outcomes and should be addressed further.

Introduction

Substance dependence, or addiction, is a widespread epidemic in the United States. Nearly 10% of the population qualifies as having an addictive disorder according to the American Psychiatric Association's, Diagnostic and Statistical Manual of Mental Disorders, IV (SAMHSA 2008; SAMHSA 2010). While there are effective treatments and pharmacotherapies available to treat substance dependence, barriers to treatment entry, retention, and completion continue to persist. Notably, only 44% of all people dischargedfrom treatment facilities completed treatment in 2005 (SAMHSA 2008) highlighting the importance of determining obstacles to keeping patients in treatment.

Mental health parity, in general, aims to alleviate disparities that exist in the coverage of mental health benefits compared to other medical or surgical health benefits in insurance. These disparities could contribute to treatment discontinuation and should be examined further. In October 2008 the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008 was signed into law. This act was embedded in the Emergency Economic Stabilization Act of 2008 (H.R. 1424). It included language for substance dependence as well as more equality in cost-sharing responsibilities and treatment limitations for mental health benefits. While this bill may have important implications for the substance dependence field, this study examined parity-related issues from the patient's perspective.

Various studies have examined full mental health parity in the context of the Federal Employee Health Benefit Plan which was mandated under President Clinton and became effective in 2001 (Goldman et al. 2006; Azrin et al. 2007; Barry 2007). Full mental health parity was associated with significant reductions in out-of-pocket

spending, especially in families with mentally-ill children, without adversely affecting health care costs. Therefore, there is evidence that full mental health parity can increase the financial protection of the individual or family without greatly increasing overall health care costs.

Several studies have already looked at the effects of comprehensive mental health and substance dependence benefits, and it was found that managed care was critical for keeping costs low (Rosenbach et al. 2003; Goldman et al. 2006; Barry and Ridgely 2008). Under the umbrella of managed care, in 2006, 170 million Americans were covered under Managed Behavioral Health Organizations (MBHOs) (Frank and Garfield 2007) or a “carve-out” plan. Conversely, some of the disadvantages of MBHOs include increased administrative costs, increased utilization reviews, a disconnect between other physical health benefits, lower reimbursement for healthcare professionals, and higher readmission rates (Shepard et al. 2002; Frank and Garfield 2007).

Other insurance practices could also affect the individual’s treatment for substance dependence. The most commonly approved number of outpatient visits was 6-8 visits (Merrick et al. 2008). Further, substance dependence patients authorized for 5 sessions were three times more likely to terminate treatment at exactly the fifth treatment session compared to patients authorized for 10 sessions (Liu et al. 2000). Copayment levels were shown to have a significant effect on the reoccurrence of substance dependence problems (Lo Sasso and Lyons 2002). In addition to substance dependence, it has also been shown in various chronic diseases that higher copayments resulted in the early termination of the treatment regimen (Kessler et al.

2007). These results emphasize the impact health insurance and paying for treatment may have on patients.

There are various FDA-approved medications for the treatment of substance dependence (Antabuse, Campral, Methadone, Naltrexone, Subutex, and Suboxone). Though these medications are generally covered on par compared to other physical health medications (Barry et al. 2003; Frank et al. 2005; Knudsen et al. 2007), the uptake and utilization of these medications at treatment facilities is relatively low. A comparison of utilization of these medications at treatment facilities throughout the United States showed very low rates of use with 7% of facilities using Subutex, 10.1% using Methadone, 12.9% using Suboxone, 16.7% using Naltrexone, 18.3% using Antabuse, and 18.4% using Campral (SAMHSA 2008).

State policies, such as the Medicaid preferred drug list, can have a profound effect on whether treatment centers even offer pharmacotherapies (Ducharme and Abraham 2008; Heinrich and Hill 2008). Centers that employ a staff physician, that are not heavily funded through public funds, that have a large caseload of privately-insured individuals, and that have fewer linkages with the criminal justice system are more likely to adopt pharmacotherapies (Roman and Johnson 2002; Ducharme et al. 2006).

The current study was designed to examine different parity-related issues and medication beliefs from the patient's perspective through a psychometrically-validated instrument. Health insurance and paying for treatment are complicated issues that can vary from patient to patient, state to state, or facility to facility. Financing treatment is a confusing, complex maze of private and public funding, policies, managed care, facility type and various other entities. Thus, a study examining the patient's perspectives and

attitudes towards financing care and how much financing may impede treatment completion is a unique analysis that has been overlooked, especially in light of parity legislation.

Methods

Sampling

The study took place at three different substance dependence treatment facilities in Georgia and Tennessee. All procedures were reviewed and approved by the Institutional Review Board of the University of Georgia. Substance dependence treatment providers also provided letters of approval to participate in the study.

Treatment providers approached potential participants. In order to be eligible for the study, patients must: 1) be over 18 years of age; 2) be healthy enough to fill in a questionnaire; and 3) be diagnosed with a substance dependence disorder as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (APA 2001).

If potential participants fit inclusion criteria, providers introduced the project. Patients were given an informed consent letter approved by the institutional review board. If patients agreed to the study, they were given the questionnaire to complete in private. Once completed, patients were asked to seal the questionnaire in the envelope provided and place into a drop box. Providers then sent all completed questionnaires to the researchers. All individual data remained anonymous to maintain patient confidentiality.

Measures

A single instrument comprised of four different dimensions was used to assess parity-related perceptions and barriers. The dimensions included perceived payment barriers, perceived insurance barriers, substance dependence medication beliefs, and general parity beliefs. The initial instrument and item pool were generated based on a search of the literature and generated by input from patients and professionals in the field. Interviews were conducted with patients currently in treatment, substance dependence treatment providers, and an individual working in private insurance. Items were reworded or added based on relevancy discussed in the interviews. All items were agree/disagree response types based on a 5-point Likert scale (Hinkin 1995) which included the options, 1=Strongly Disagree; 2=Disagree; 3=Neither Agree Nor Disagree; 4=Agree; 5=Strongly Agree.

The initial item pool was assessed for content validity. Ten faculty members and doctoral students were asked to place items within their appropriate dimension. The four dimensions were listed as well as an “other” dimension. Only items with 80% agreement were retained for further analysis (MacKenzie et al. 1991; Hinkin 1995). Retained items were then analyzed with a test population. Pharm.D students (N=197) volunteered to answer the questionnaire. This data was then used to do an initial exploratory factor analysis using SPSS (SPSS 2008) to examine the factor structure of the instrument. Weakly-loading items were removed. The initial factor structure, in this population, resembled the a priori factor structure.

Instrument Statistical Procedures

The factor structure was once again examined with the target population. Exploratory factor analysis was conducted using SPSS (SPSS 2008) and confirmatory factor analysis was achieved through SPSS and LISREL (Joreskog and Sorbom 2006). The initial factor extraction was based on minimum eigenvalues, variance explained, scree plot analysis, and minimum item loadings.

The factor structure was confirmed through examination of factor loadings, variance explained, and reliability (assessed by Cronbach's α). The goodness-of-fit indices of the target four-dimension structure were evaluated in comparison to other structure models. The goodness-of-fit indices included chi-square, the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), the Standardized Root Mean Residual (SRMSR), and the Root Mean Squared Error of Approximation (RMSEA). The criterion for evaluation between structure models was the model that fit within the most goodness-of-fit indices. Models with a TLI and CFI above .90 (Bentler and Bonett 1980; Marsh and Hau 1996), a SRMSR ≤ .08 (McDonald and Marsh 1990) and a RMSEA ≤ .06 represent an acceptable model (Lance and Vandenberg 2001).

Results

Participant Characteristics

Participants were 187 patients currently in treatment for substance dependence who were recruited between July 2009 to October 2009. Patient characteristics are summarized in table 7.1. The mean age of patients was 37.85 (SD=13.62, range=18-71 years) and 88.2% were white/Caucasian. Sixty-five percent of the patients reported

either some college or more completed for their education and 23.5% of the patients were currently unemployed. Males (70.3%) outnumbered females (29.7%) in the study and 51.3% of patients reported having been to treatment for substance dependence previously. Patients also identified current treatment as either hospital inpatient (7%), overnight at an alcohol or drug treatment facility (47.6%), or outpatient care (34.8%).

Table 7.1: Patient Characteristics

Variables	%
Age (in years) (N=183)	
18-24	16.6
25-34	23.0
35-44	25.1
45-54	20.3
55 or more	12.8
Education (N=181)	
Less than high school	3.2
High school / GED	28.3
Some college	32.1
2-year college	9.1
4-year college	12.3
Graduate education	11.8
Employment Status (N=183)	
Full Time	59.9
Part Time	3.7
Unemployed	23.5
Other	12.9
Ethnicity (N=184)	
Asian	0.5
American Indian or Alaskan Native	2.1
Black/African American	4.8
Hispanic or Latino	2.1
White/Caucasian	88.2
Other	0.5
Gender (N=186)	
Male	70.3
Female	29.7

Number of Previous Visits (N=186)	
0	48.1
1	22.5
2	11.2
3 or more	17.6
Referral Source (N=187)	
Self-referred	59.4
Court-referred	4.1
Other source	36.5
Treatment Type (N=179)	
Inpatient care	7.0
Overnight drug or Alcohol facility	47.6
Outpatient	34.8
Other	6.4

Structure of Parity-Related Barriers Scale

Using exploratory and confirmatory factor analysis with an oblique rotation, 17 items were selected to represent the four underlying latent variables of perceived payment barriers, perceived insurance barriers, substance dependence medication beliefs, and general parity beliefs (table 7.2). Cronbach's α was used to assess each subscales reliability. Values ranged from .705-.847 which were all within acceptable range (Nunnally 1976).

Table 7.2: Parity-Related Barrier Dimensions and Individual Items

Dimensions	Cronbach's α
Perceived Payment Barriers	
I have made financial sacrifices to pay for substance dependence treatment.	
I cannot afford medications for substance dependence.	
The amount of money I have to pay from my own savings for treatment is too high.	.847
I think getting this treatment for my addiction problems is a financial drain on my family.	
I constantly worry about how I'm going to pay for my treatment.	
I cannot afford substance dependence treatment.	
Perceived Insurance Barriers	
I believe using health insurance for treatment would prevent a person from having health insurance in the future.	
I am, or would be, uncomfortable using health insurance for substance dependence treatment.	
I am, or would be, scared to use insurance to pay for treatment because I wouldn't want an insurer to know about my substance dependence issues.	.705
My health insurance, or lack of insurance, has caused me to end a treatment service before I thought I was ready.	
Substance Dependence Medication Beliefs	
I don't think addiction medications will help with substance dependence issues.	
Addiction medications are an important part of treatment.	.719
Medications can really help a person overcome substance dependence issues.	
General Parity Beliefs	
I think substance dependence is a disease like any other disease.	
It is just as important to treat substance dependence issues as it is to treat other health issues.	
I think substance dependence should be treated like any other physical illness.	.774
I think mental health should be treated like any other physical illness.	

The factorial structure (figure 7.1) was examined for overall model fit. The target, four-factor oblique model was compared to a one-factor model (with all variables loading onto a single, latent variable), a three-factor model (with payment and insurance

variables loading onto a single latent variable and medications and parity each having their own latent variable), and a four-factor orthogonal model (with all latent variables uncorrelated.) The TLI and CFI were greatest in the target, four-factor oblique model with a value of 0.91 and .92 respectively. Additionally, the SRMSR value for the target model was the only model to fit within the range of ≤ 0.08 (McDonald and Marsh 1990; Lance and Vandenberg 2001). It was evident from the chi-squared statistic, SRMSR, CFI, and TLI indices that the four-target oblique model fit the data better than the other models analyzed (table 7.3).

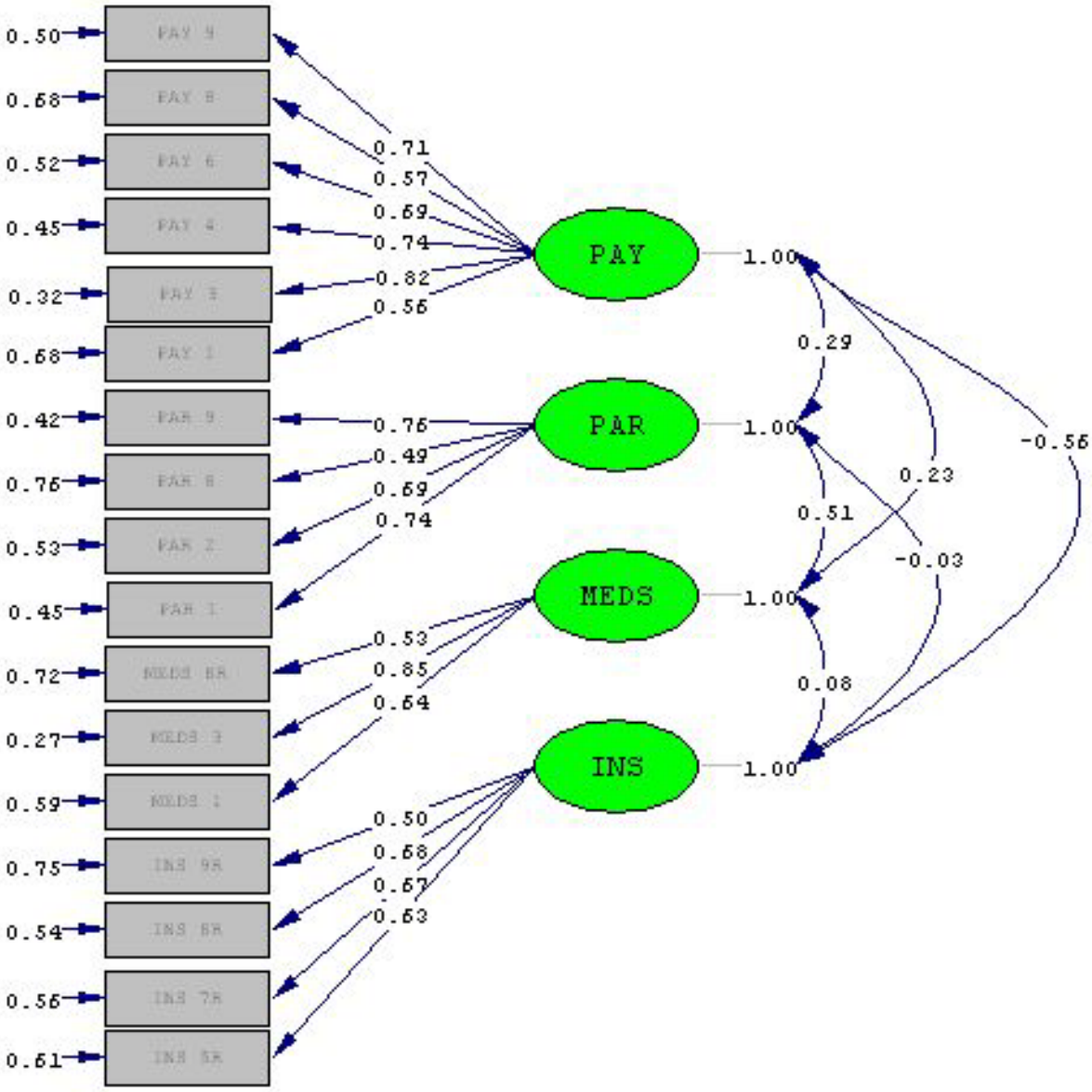


Figure 7.1: Confirmatory Factor Structure

Table 7.3: Goodness-of-fit Indices for Overall Model Fit

Model	df	χ^2	SRMSR	RMSEA	CFI	TLI	Comparison	Δdf	$\Delta\chi^2$
A) One-Factor Model	119	612.59*	0.14	0.17	0.70	0.66	A vs D	6	372.11*
B) Three-Factor Model	116	314.74*	0.092	0.10	0.88	0.86	B vs D	3	74.26*
C) Four-Factor Orthogonal	119	328.28*	0.15	0.095	0.87	0.86	C vs D	6	87.8*
D) Four-Factor Oblique	113	240.48*	0.075	0.075	0.92	0.91			

* $p < 0.01$

Since factors were analyzed through oblique rotations (Costello and Osborne 2005), interfactor correlations were analyzed for the four dimensions (table 7.4). All correlations were based on *Pearson's r*. Percieved payment barriers significantly correlated with all other dimensions. Payment barriers and insurance barriers were correlated in opposite directions but insurance barrier questions were reverse coded, so this result was expected. General parity beliefs significantly correlated with positive beliefs about using substance dependence medications.

Table7.4: Interfactor Correlations Between Dimensions

	Perceived Payment Barriers	General Parity Beliefs	Substance Dependence Medication Beliefs	Perceived Insurance Barriers
Perceived Payment Barriers	1.00			
General Parity Beliefs	0.29*	1.00		
Substance Dependence Medication Beliefs	0.23*	0.51**	1.00	
Perceived Insurance Barriers	-0.56**	-0.03	0.08	1.00

*$p < 0.05$
**$p < 0.01$

Parity-related Barriers Identified by Patients

The results of the EFA and CFA procedures demonstrated four underlying factors. This structure was used to identify perceived parity-related barriers by patients currently in treatment for substance dependence. One hundred nineteen patients reported that they had private health insurance which represented 65% of those surveyed. Patients were then divided into groups based on whether they reported using private insurance to pay for any portion of treatment (n=77) compared to patients who did not report using private insurance to pay for any portion of treatment (n=110). Independent sample t-tests were used to determine significant differences in barriers identified. Those using private insurance to pay for any portion of treatment reported significantly less barriers relating to paying for treatment and using health insurance for treatment (table 7.5). There was no significant difference in parity beliefs and beliefs about using medications to treat substance dependence, however, both groups more than agreed with parity for substance dependence and agreed with using medications for treatment. Both groups believed strongly in parity as well as using medications for treatment.

Table 7.5: Patient-reported barriers for those using private insurance to pay for any portion of treatment compared to those not using private insurance.

	Patients Not Using Private Insurance	Patients Using Private Insurance	
	Mean (SD)	Mean (SD)	Significance
Perceived Payment Barriers	3.0515 (.95335)	2.7074 (.97658)	.017*
General Parity Beliefs	4.4583 (.63553)	4.4275 (.71269)	.756
Substance Dependence Medication Beliefs	3.7000 (.96096)	3.9502 (.69410)	.052
Perceived Insurance Barriers	3.6591 (.87732)	3.9675 (.71215)	.012*
*p<0.05			

Next, patients reported what percentage private insurance would pay for their treatment. Patients reporting using private insurance to pay for 50% or more of their treatment were classified into the high private insurance payment group (n=67) while patients reporting less than 50% coverage or no coverage were classified into the low insurance coverage group (n=120). Again, patient groups were compared using t-tests (table 7.6). Those using more private insurance experienced significantly fewer payment barriers and significantly fewer insurance barriers. However, there was a significant difference in household income between these two groups. Patients reporting more than 50% insurance coverage had significantly higher household incomes.

Table 7.6: Patients using private insurance to pay for 50% or more of treatment compared to those using limited or no private insurance as payment.

	Patients with limited or no insurance coverage	Patients with higher than 50% private insurance coverage	
	Mean (SD)	Mean (SD)	Significance
Perceived Payment Barriers	3.0158 (.95166)	2.7199 (.99526)	.046*
General Parity Beliefs	4.4632 (.62760)	4.4142 (.73540)	.631
Substance Dependence Medication Beliefs	3.7194 (.95462)	3.9527 (.66654)	.078
Perceived Insurance Barriers	3.6896 (.86447)	3.9590 (.72509)	.032*
Household Income	49805.34 (48244.605)	75072.00 (62844.370)	.003*
*p<0.05			

Patients also rated the impact paying for treatment would have on them completing treatment. Specifically, patients were asked (based on a scale of 1 to 10), how much of an effect will paying for treatment have on them completing their full treatment. A score of 1 represented the thought that paying for treatment would have no effect on them completing their full treatment whereas a score of 10 represented the

belief that they would not complete their full treatment because of payment costs. Patients reporting a score of 1-4 (n=120) were compared to patients reporting a score of 7-10 (n=37). Patients reporting 5 or 6 were considered neutral and were not included in this analysis (table 7.7). Patients perceiving that paying for treatment would have an effect on them completing treatment reported significantly more payment barriers, and significantly more insurance barriers (this dimension was reverse-scored, and higher scores represent fewer perceived insurance barriers). There was no significant difference in household income between these two groups. While only 37 patients reported a 7-10 on the scale, the effect sizes were great enough to detect a significant difference with 80% power.

Table 7.7: Comparison of patients reporting whether paying for treatment will have an effect on them completing treatment

	Payment will have little to no effect of treatment completion	Payment will have an effect on treatment completion	
	Mean (SD)	Mean (SD)	Significance
Perceived Payment Barriers	2.7089 (.97027)	3.3892 (.90894)	<.001**
General Parity Beliefs	4.4299 (.71710)	4.5270 (.61459)	.485
Substance Dependence Medication Beliefs	3.8250 (.86962)	3.9505 (..83228)	.440
Perceived Insurance Barriers	3.9826 (.72406)	3.4595 (.91953)	<.001**
Household Income	55150.27 (55791.619)	63422 (56168,506)	.438

*p<0.05
**p<.001

Lastly, other modes of payment were examined. Patients were asked to report *all* modes of payment they would use to pay for treatment. Patients using any personal savings or money from family members were grouped into a self-pay category. These

patients within the self-pay group (n=83) were compared to patients reporting other modes of payment other than self or family members (n=104). Results are shown in table 7.8. Patients reporting any form of self-pay (regardless of percentage) reported significantly more payment and insurance barriers. There was no significant difference in household income between these groups.

Table 7.8: Barriers identified by patients classified as using personal savings or money from family members to pay for any portion of treatment

	No Self-pay	Self-pay	
	Mean (SD)	Mean (SD)	Significance
Perceived Payment Barriers	2.5952 (.94169)	3.3040 (.87222)	<.001**
General Parity Beliefs	4.3742 (.67780)	4.5351 (.64538)	.101
Substance Dependence Medication Beliefs	3.8093 (.86225)	3.7952 (.88012)	.912
Perceived Insurance Barriers	3.9071 (.78932)	3.6345 (.84932)	.025*
Household Income	62804.55 (54568.147)	53774.17 (55520.395)	.269

*p<0.05
**p<.001

Additional Information Reported by Patients

Additional information was reported by patients in treatment. Patients were asked the open-ended question of what would be their biggest barrier to completing treatment. 28% of patients reported money or finances would be their biggest barrier. Further patients were asked about their general and mental health. For both categories, patients reported that both their overall general health and mental health were good compared to other people their age. Lastly, patients strongly agreed (mean=4.57 SD=.719) with the statement, “I will finish the full treatment I am supposed to.”

Discussion

The results of both the exploratory and confirmatory factor analysis demonstrated a four-factor model for identifying perceived parity-like barriers among patients in treatment for substance dependence. These factors included perceived payment barriers, general parity beliefs, beliefs about the inclusion of medications to treat substance dependence, and perceived health insurance barriers in relation to substance dependence treatment.

Since this sample was a convenience sample, the demographics of the population need to be considered in the context of all people in treatment for substance dependence. The Treatment Episode Data Set is a national sample of over 1.8 million admissions to substance dependence treatment facilities. In 2008, the breakdown of males to females nationally was 68% to 32% respectively (SAMHSA 2010). That ratio was mirrored in the current study. Further, more than 50% of patients across the United States had been to treatment previously and 35% reported unemployment. While the current study population mirrored national trends with respect to previous treatment, gender, and unemployment, the current study was slightly different in regards to education and ethnicity. The national rate of education was only 22% reporting some college training.Additionally, 65% of patients were Caucasian, 21% were African American, and 8% reported another ethnicity. Therefore the current study population was more educated and more Caucasian than national trends in treatment facilities.

Of the 187 patients who completed the questionnaire, different patient sub-populations were used to determine differences in perceived barriers. Patients felt strongly in favor of parity for substance dependence. No significant differences were

examined in any patient sub-populations for parity beliefs. In total, patients more strongly agreed (mean=4.4456, SD=.6668) that substance dependence benefits should be at par with physical health benefits demonstrating the importance of parity for this patient population. Further, patients also strongly agreed with incorporating medications into the treatment of substance dependence. Again there were no significant differences among patients with different characteristics, and in total, most patients had strong beliefs in favor of using medications (mean=3.8030, SD=.86790). Since the utilization of medications in substance dependence treatment facilities is low (SAMHSA 2008), this highlights an unmet need amongst patients.

In comparing patients who reported using private insurance to pay for treatment compared to patients not using private insurance to pay for treatment, it must first be noted that only 77 of the 119 patients who had private insurance were using it to pay for their treatment. This discrepancy should be examined further since patients using insurance for any part of treatment reported significantly fewer payment barriers and significantly fewer insurance barriers. When patients were further classified into high and low/no insurance coverage, again patients with higher insurance coverage experienced significantly less payment and insurance barriers. Furthermore, patients with higher insurance coverage had significantly higher incomes.

In addition to insurance coverage rates, patients were asked to rate how much paying for treatment would affect them completing treatment. Since only a low percentage of discharges complete their full treatment (SAMHSA 2008) any obstacles patients perceive to completing treatment need to be identified. Twenty-eight percent of patients identified paying for treatment would be their biggest barrier and patients

reporting higher payment and insurance barriers were more likely to report that it would affect them completing their full treatment. There was no significant difference in income within this portion of the analysis showing that any patient is susceptible to these perceived barriers. Lastly, patients reporting using either their own savings or money from family members to pay for *any* portion of treatment were compared to those not using self-pay. Patients using any self-pay had significantly more payment and insurance barriers without a significant difference in income.

This study shows just how important policy may be in regards to the treatment of substance dependence. Certain patients may be experiencing high barriers relating to parity issues, especially relating to paying for treatment and using health insurance to pay for treatment. These perceived barriers may translate into patients not completing their full treatment, and these issues need to be addressed and examined further. This instrument can also be used by facilities treating patients for substance dependence to identify perceived patient barriers that could lead to treatment non-compliance.

Study Limitations

The participants that volunteered to take part in the study represented a convenience sample of substance abusers in treatment for substance dependence. It was also a convenience sample of substance abusers at treatment facilities located in the southeast. However, the patient population represented individuals from 31 different states. All data collected was self-report. This could represent a limitation of the data in regards to how patients were going to pay for treatment and how much insurance coverage they really had.

Conclusion

Patients in treatment for substance dependence really believe that they are going to complete their full treatment, but patients are perceiving significant barriers in regards to paying for treatment and using health insurance to pay for treatment. These perceived barriers could in turn lead to additional treatment non-compliance, especially during difficult economic times.

References

APA (2001). Diagnostic and Statistical Manual of Mental Disorders (4th ed.). Washington, DC, America Psychiatric Association.

Azrin, S. T., H. A. Huskamp, et al. (2007). "Impact of Full Mental Health and Substance Abuse Parity for Children in the Federal Employees Health Benefits Program." Pediatrics **119**(2): 452-459.

Barry, C., Busch, SH. (2007). "Do State Parity Laws Reduce the Financial Burden on Families of Children with Mental Health Care Needs?" Health Services Research **42**(3): 1062-1084.

Barry, C. L., J. R. Gabel, et al. (2003). "Design of Mental Health Benefits: Still Unequal After All These Years." Health Affairs **22**(5): 127-137.

Barry, C. L. and M. S. Ridgely (2008). "Mental Health and Substance Abuse Insuranec Parity for Federal Employees: How did Health Plans Respond?" Journal of Policy Analysis and Management **27**(1): 155-170.

Bentler, P. M. and D. G. Bonett (1980). "Significance Tests and Goodness of Fit in the Analysis of Covariance Structures." Psychological Bulletin **88**: 588-606.

Costello, A. B. and J. W. Osborne (2005). "Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most from Your Analysis." Practical Assessment, Research & Evaluation **10**(7).

Ducharme, L. J. and A. J. Abraham (2008). "State Policy Influence on the Early Diffusion of Buprenorphine in Community Treatment Programs." Substance Abuse Treatment, Prevention, and Policy **3**(17): 1-10.

Ducharme, L. J., H. K. Knudsen, et al. (2006). "Trends in the Adoption of Medications for Alcohol Dependence." Journal of Clinical Psychopharmacology **26**(Supplement 1): S13-S19.

Frank, R. G., R. M. Conti, et al. (2005). "Mental Health Policy and Psychotropic Drugs." The Milbank Quaterly **83**(2): 271-298.

Frank, R. G. and R. L. Garfield (2007). "Managed Behavioral Health Care Carve-Outs: Past Performance and Future Prospects." Annual Review of Public Health **28**: 303-320.

Goldman, H. H., R. G. Frank, et al. (2006). "Behavioral Health Insurance Parity for Federal Employees." The New England Journal of Medicine **354**: 1378-1386.

Heinrich, C. J. and C. J. Hill (2008). "Role of State Policies in the Adoption of Naltrexone for Substance Abuse Treatment." Health Services Research **43**(3): 951-969.

Hinkin, T. (1995). "A Review of Scale Development Practices in the Study of Organizations." Journal of Management **21**(5): 967-988.

Joreskog, K. G. and D. Sorbom (2006). LISREL 8.8 for Windows [Computer Software]. Lincolnwood, IL, Scientific Software International, Inc. .

Kessler, R. C., C. R. Cantrell, et al. (2007). "The Effects of Copayments on Medication Adherence During the First Two Year of Prescription Drug Treatment." Journal of Occupational and Environmental Medicine **49**: 597-609.

Knudsen, H. K., L. J. Ducharme, et al. (2007). "The Adoption of Medications in Substance Abuse Treatment: Associations with Organizational Characteristics and Technology Clusters." Drug and Alcohol Dependence **87**: 164-174.

Lance, C. E. and R. J. Vandenberg (2001). Confirmatory Factor Analysis. Measuring and Analyzing Behavior in Organizations: Advances in Measurement and Data Analysis. F. Drasgow and N. Schmitt. San Francisco, Jossey-Bass.

Liu, X., R. Sturm, et al. (2000). "The Impact of Prior Authorization on Outpatient Utilization in Managed Behavioral Health Plans." Medical Care Research and Review **57**(5): 182-195.

Lo Sasso, A. T. and J. S. Lyons (2002). "The Effects of Copayments on Substance Abuse Treatment Expenditures and Treatment Reoccurrence." Psychiatric Services **53**(12): 1605-1611.

MacKenzie, S. B., P. M. Podsakoff, et al. (1991). "Organizational Citizenship Behavior and Objective Productivity as Determinants of Managerial Evaluations of Salespersons' Performance." Organizational Behavior and Human Decision Processes **50**: 123-150.

Marsh, H. W. and K. Hau (1996). "Assessing Goodness of Fit: Is Parsimony Always Desirable?" Journal of Experimental Education **64**(4): 364-391.

McDonald, R. P. and H. W. Marsh (1990). "Choosing a Multivariate Model: Noncentrality and Goodness of Fit." Psychological Bulletin **107**: 247-255.

Merrick, E. L., C. M. Horgan, et al. (2008). "Accessing Specialty Behavioral Health Treatment in Private Health Plans." Journal of Behavioral Health Services & Research.

Nunnally, J. (1976). Psychometric Theory, 2nd Edition. New York, NY, McGraw-Hill.

Roman, P. M. and J. A. Johnson (2002). "Adoption and Implementation of New Technologies in Substance Abuse Treatment." Journal of Substance Abuse Treatment **22**(211-218).

Rosenbach, M., T. Lake, et al. (2003). Rosenbach, M., Lake, T., Young, C., et al. (2003). Effects of the Vermont Mental Health and Substance Abuse Parity Law. DHHS Pub. No. (SMA) 03-3822. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration. . D. o. H. a. H. Services. Rockville, MD, Center for Mental Health Services, Substance Abuse and Mental Health Services Administration.

SAMHSA (2008). "Substance Abuse and Mental Health Services Administration, Office of Applied Studies. National Survey of Substance Abuse Treatment Services (N-SSATS): 2007. Data on Substance Abuse Treatment Facilities, DASIS Series: S-44, DHHS Publication No. (SMA) 08-4348, Rockville, MD, 2008.".

SAMHSA (2008). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. Results from the 2007 National Survey on Drug Use and Health: National Findings, NSDUH Series H-34, DHHS Publication No. SMA 08-4343. Rockville, MD, 2008.

SAMHSA (2008). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. Treatment Episode Data Sets (TEDS): 2005. Discharges from Substance Abuse Treatment Services, DASIS Series: S-41, DHHS Publication No. (SMA) 08-4314, Rockville, MD, 2008.

Shepard, D. S., M. Daley, et al. (2002). "Managed Care and the Quality of Substance Abuse Treatment." The Journal of Mental Health Policy and Economics **5**: 163-174.

SPSS (2008). SPSS Base 17.0 User's Guide. . Chicago, IL, SPSS, Inc. .

CHAPTER 8

EVALUATING PUBLIC OPINIONS ON PARITY-RELATED ISSUES OF SUBSTANCE DEPENDENCE TREATMENT IN COMPARISON TO PATIENTS CURRENTLY IN TREATMENT[2]

[2] Brown, A.L. and M.A. Norton. To be submitted to *Health Affairs.*

Abstract

Patients in treatment for substance dependence and a sample of the general public were assessed on parity-related perceptions and opinions. Specifically, these areas included paying for treatment, using health insurance for treatment, using medications to treat substance dependence, and parity beliefs in general. The general public perceived higher payment barriers ($p<.05$) and higher insurance barriers ($p<.001$), and believed less strongly in parity in general ($p<.001$) and using medications to treat substance dependence ($p<.001$) when compared to patients currently in treatment for substance dependence. Further, 48% of the general public sample stated that paying for treatment would specifically affect their decision to seek treatment. . The financial burden of paying for treatment as well as health coverage for mental health services is an important health policy that needs continued review.

Introduction

Mental health policy and policy specific to substance dependence treatment has played a critical role in shaping some of the barriers individuals may face in dealing with treatment entry, compliance, and completion. Dating back to the era of President John F. Kennedy, some of the ideas of mental health coverage began to emerge and a few mental health benefits began compared to other medical coverage (Barry 2006). Recently, with the passing of the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008, mental health benefits and substance dependence benefits were awarded full parity, including equality in benefit limits and cost-sharing (Kuehn 2008; Rosenbach et al. 2009). With these changes in coverage

being implemented, this study examined parity-related perceptions and barriers as reported by the general public and by patients currently in treatment for substance dependence.

The rate of substance dependence has remained stable since 2002, with nearly 1 in 10 individuals in the United States qualifying as having an addictive disorder according to the American Psychiatric Association's classifications (SAMHSA 2010). While there is clearly a need for substance dependence treatment, in 2008, 20.8 million people needed treatment for an illicit drug or alcohol problem but did not receive specialty treatment. The most cited reason for not seeking treatment was a lack of health coverage or could not afford the costs of treatment (SAMHSA 2010).

There are gender variations in relation to substance dependence. Men have almost twice the rate of dependence compared to women (SAMHSA 2010), but women with substance dependence issues are less likely to enter treatment compared to men (Greenfield et al. 2007). However, once in treatment, gender is not a significant predictor of treatment compliance, completion, or outcomes (Greenfield et al. 2007).

The heritability, genetic risk factors, pathophysiology, and response to treatments (both adherence and relapse) of substance dependence were deemed similar to those of type II diabetes mellitus, hypertension, and asthma in adults (McLellan et al. 2000), illustrating that addiction is a chronic disease, not an acute condition. Additionally, it has been shown in various chronic diseases that higher copayments resulted in the early termination of a treatment regimen (Kessler et al. 2007). Copayment levels were shown to have a significant effect on the reoccurrence of substance dependence problems (Lo Sasso and Lyons 2002). As copayment levels increased, the probability of relapse also

increased. Moving from a $10 to a $20 copayment resulted in a reduction of visits from 5 to 4 visits for substance dependence treatment (Lo Sasso and Lyons 2004). Since patients in long-lasting treatment face substantial out-of-pocket costs (Hodgkin et al. 2009), policy affecting cost-sharing in mental health benefits is especially important for substance dependence.

While there is an abundance of research on substance dependence, this study assessed the perception of parity-related barriers for both patients currently in treatment for substance dependence compared to perceived barriers from the general public about substance dependence treatment. These parity-related areas included, financing treatment, health insurance, substance dependence medications, and parity in general. Opinions on medications were included since the coverage of psychotropic medications is thought to be on par with other physical/medical medications (Barry et al. 2003; Frank et al. 2005; Knudsen et al. 2007), but the use of pharmacotherapies is generally low in treatment (Knudsen et al. 2007; SAMHSA 2010). Our results help shed light on what parity-related barriers patients are currently facing that may affect treatment retention and completion, and what perceived barriers the general public has which may prevent treatment entry..

Study Data and Methods

Study Participants

This study examined the opinions and perceptions of the general public in comparison to patients currently in treatment for substance dependence. One hundred eighty-seven patients currently in treatment for substance dependence from the

southeast (Georgia and Tennessee) volunteered to fill in an anonymous survey through procedures reviewed and approved by the Institutional Review Board of the University of Georgia. The surveys for the general public (n=315) were distributed online via Zoomerang®. The general public participants included individuals over the age of 18 throughout Georgia, Tennessee, and Alabama. The demographic characteristics of both the patient population and general public population can be seen in table 8.1.

Table 8.1: Demographics of the Patient and General Public Populations

Variables	Patient Population (%) n=187	General Public Population (%) n=315
Age (in years)		
18-24	16.6	5.8
25-34	23.0	21.9
35-44	25.1	21.9
45-54	20.3	20
55 or more	12.8	28.5
Education		
Less than high school	3.2	2.2
High school / GED	28.3	17.8
Some college	32.1	34.9
2-year college	9.1	9.5
4-year college	12.3	22.9
Graduate education	11.8	12.7
Employment Status		
Full Time	59.9	43.5
Part Time	3.7	7.9
Unemployed	23.5	10.2
Student	7	5.4
Retired	1.1	19.4
Other	4.8	13.6
Ethnicity		
Asian	0.5	1.6
American Indian or Alaskan Native	2.1	0
Black/African American	4.8	11.1
Hispanic or Latino	2.1	.3
White/Caucasian	88.2	83.2
Other	0.5	1.3
Gender		
Male	70.3	46
Female	29.7	54
Income Level	(13% not reported)	(14% not reported)
<$25,000	18.2	28.7
$25,001 – $40,000	16	20.3
$40,001 – $70,000	19.8	28.4
$70,001 +	33.2	24

Measures

A single instrument comprised of four different dimensions was used to assess parity-related perceptions and barriers. The instrument was evaluated for reliability and validity elsewhere (results not shown). The dimensions included perceived payment barriers for substance dependence treatment, perceived insurance barriers for treatment, substance dependence medication beliefs, and general parity beliefs. All items were agree/disagree response types based on a 5-point Likert scale (Hinkin 1995) which included the options, 1=Strongly Disagree; 2=Disagree; 3=Neither Agree Nor Disagree; 4=Agree; 5=Strongly Agree.

While the factor structure was examined previously in the patient population, the factor structure was also examined within the general public population. Exploratory factor analysis was conducted using SPSS (SPSS 2008) and confirmatory factor analysis was achieved through SPSS and LISREL (Joreskog and Sorbom 2006). The initial factor extraction was based on minimum eigenvalues, variance explained, scree plot analysis, and minimum item loadings.

The factor structure was confirmed through examination of factor loadings, variance explained, and reliability (assessed by Cronbach's α). Further, the goodness-of-fit indices of the target four-dimension structure were evaluated in comparison to other structure models. The goodness-of-fit indices included chi-square, the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), the Standardized Root Mean Residual (SRMSR), and the Root Mean Squared Error of Approximation (RMSEA). The criterion for evaluation between structure models was the model that fit within the most goodness-of-fit indices. Models with a TLI and CFI above .90 (Bentler and Bonett 1980;

Marsh and Hau 1996), a SRMSR ≤ .08 (McDonald and Marsh 1990) and a RMSEA ≤ .06 represent an acceptable model (Lance and Vandenberg 2001). The target model represented the best overall fit (table 8.2).

Table 8.2: Goodness-of-Fit Indices within General Public Population

Model	df	χ^2	SRMSR	RMSEA	CFI	TLI
One-Factor Model	77	912.03 (p<0.001)	0.18	0.21	0.61	0.53
Three-Factor Model	74	293.71 (p<0.001)	0.088	0.097	0.90	0.87
Four-Factor Orthogonal	77	363.21 (p<0.001)	0.15	0.10	0.86	0.84
Four-Factor Oblique	71	202.92 (p<0.001)	0.074	0.073	0.94	0.92
Model Comparisons						
	Δdf	$\Delta\chi^2$				
Four-Factor Oblique vs. One-Factor Model	6	709.11 (p<0.001)				
Four-Factor Oblique vs. Three-Factor Model	3	90.79 (p<0.001)				
Four-Factor Oblique vs. Four-Factor Orthogonal Model	6	160.29 (p<0.001)				

Fourteen items were selected to represent the four underlying latent variables used to compare patient opinions to those of the general public (table 8.3). Cronbach's α was used to assess each subscale's reliability. Values ranged from .663-.848 which round to within acceptable range (Nunnally 1976).

Table 8.3: Parity-Related Barrier Dimensions Examined in General Public

Dimensions	Cronbach's α
Perceived Payment Barriers I would have to make financial sacrifices to pay for substance dependence treatment. I cannot afford medications for substance dependence. I think getting treatment for addiction problems would be a financial drain on my family. I cannot afford substance dependence treatment.	.848
Perceived Insurance Barriers I believe using health insurance for treatment would prevent a person from having health insurance in the future. I am, or would be, uncomfortable using health insurance for substance dependence treatment. I am, or would be, scared to use insurance to pay for treatment because I wouldn't want an insurer to know about my substance dependence issues.	.663
Substance Dependence Medication Beliefs I don't think addiction medications will help with substance dependence issues. Addiction medications are an important part of treatment. Medications can really help a person overcome substance dependence issues.	.668
General Parity Beliefs I think substance dependence is a disease like any other disease. It is just as important to treat substance dependence issues as it is to treat other health issues. I think substance dependence should be treated like any other physical illness. I think mental health should be treated like any other physical illness.	.772

Study Findings

Variations in Perceptions between Patients and the General Public

The four parity-related dimensions were examined for both the patient and general public populations (table 8.4) through independent sample t-tests. The general public perceived significantly higher payment barriers and insurance barriers relating to substance dependence treatment than patients currently in treatment. Furthermore, the general public had significantly different opinions on general parity and believed less favorably in using medications to treat substance dependence.

Table 8.4: Perceived Parity-Related Barriers in the General Public vs. Patients currently in Treatment for Substance Dependence

	Patients in Treatment for Substance Dependence (n=187)	General Public (n=315)	
	Mean (SD)	Mean (SD)	Significance
Perceived Payment Barriers	2.9759 (.98769)	3.2262 (.89063)	.004*
General Parity Beliefs	4.4456 (.66668)	3.7960 (.72700)	<.001**
Substance Dependence Medication Beliefs	3.8030 (.86790)	3.3280 (.64259)	<.001**
Perceived Insurance Barriers‡	3.7647 (.89280)	3.3619 (.80310)	<.001**
Household Income	$58,731 (55033)	$45,203 (38257)	.002*

*p<0.05
**p<0.001

‡ Lower scores represented more perceived barriers.

Attitude Clustering Among the General Public Population

While there were differences between the patient and general public populations, the general public population was examined further to determine certain attitudes of distinct subsets of people. First, the results of the different dimensions were examined based on gender through independent sample t-test analyses (table 8.5). General parity beliefs represented the only dimension to significantly differ between males and females. Females believed more strongly in general parity.

Table 8.5: Perceived Parity-Related Barriers in Males vs. Females

	Males (n=145)	Females (n=170)	
	Mean (SD)	Mean (SD)	Significance
Perceived Payment Barriers	3.1569 (.93400)	3.2853 (.85021)	.203
General Parity Beliefs	3.6707 (.74577)	3.9029 (.69507)	.005*
Substance Dependence Medication Beliefs	3.2667 (.61187)	3.3804 (.66499)	.118
Perceived Insurance Barriers‡	3.3701 (.83621)	3.3549 (.77616)	.867
Household Income	$48895 (41901)	$42055 (34666)	.114

*p<0.05
**p<0.001

Next, the general public was divided by household income level as listed in exhibit 1. Participants were divided by household income by the following parameters: under $25,000 (n=78), $25001 - $40,000 (n=55), $40,001 - $70,000 (n=77), and above $70,000 (n=65). Analysis of variance (ANOVA) was used to determine if any significant differences existed between dimension scores among the groups (table 8.6).

Table 8.6: Perceived Parity-Related Barriers Amongst Income Levels using ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Perceived Payment Barriers	Between Groups	24.577	3	8.192	11.311	<.001
	Within Groups	199.171	275	.724		
	Total	223.748	278			
General Parity Beliefs	Between Groups	1.550	3	.517	.972	.406
	Within Groups	146.143	275	.531		
	Total	147.694	278			
Substance Dependence Medication Beliefs	Between Groups	2.798	3	.933	2.201	.088
	Within Groups	116.531	275	.424		
	Total	119.329	278			
Perceived Insurance Barriers	Between Groups	3.607	3	1.202	1.778	.152
	Within Groups	185.959	275	.676		
	Total	189.566	278			

Only the perceived payment barriers dimension resulted in a p value less than .05. This dimension was examined further using Tukey's method for analysis. As the income level increased, the perceived payment barriers decreased (results not shown).

Additional questions were asked of the general public population. Specifically, participants were asked the yes/no question, "if you needed treatment for drugs and/or alcohol dependence, would the cost of treatment affect your decision to go?" The question was analyzed using the aforementioned income levels resulting in a non-significant p-value using ANOVA (table 8.7). Also, in total, 165 participants answered no (that money would not affect the decision to seek treatment); whereas, 150 participants answered yes (that money would affect the decision to seek treatment).

Table 8.7: Whether Money Would Affect Treatment Seeking Decision amongst Income Levels using ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.202	3	.401	1.610	.187
Within Groups	68.475	275	.249		
Total	69.677	278			

Additionally, the general public was divided based on age. Participants were grouped by the following age ranges, ages 18-29 (n=50), ages 30-39 (n=66), ages 40-49 (n=67), ages 50-59 (n=61), and ages 60 and above (n=69). Again, ANOVAs were conducted on the parity-related dimensions as well as if money would affect treatment seeking behavior (table 8.8). No significant differences were observed in any of the outcome variables between age groups.

Table 8.8: Dimension Scores and Treatment Seeking Based on Age Clustering using ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Perceived Payment Barriers	Between Groups	6.179	4	1.545	1.989	.096
	Within Groups	239.215	308	.777		
	Total	245.394	312			
General Parity Beliefs	Between Groups	.303	4	.076	.142	.966
	Within Groups	163.990	308	.532		
	Total	164.293	312			
Substance Dependence Medication Beliefs	Between Groups	.499	4	.125	.299	.879
	Within Groups	128.706	308	.418		
	Total	129.205	312			
Perceived Insurance Barriers	Between Groups	4.878	4	1.219	1.919	.107
	Within Groups	195.692	308	.635		
	Total	200.569	312			
Money Affect Treatment Seeking?	Between Groups	1.470	4	.368	1.478	.209
	Within Groups	76.600	308	.249		
	Total	78.070	312			

Self-reported Physical and Mental Health

Since substance dependence is strongly linked with other mental illness (SAMHSA 2010), patients and the general public were asked to rank their general health and their mental health compared to other people their age. Participants could rank general and mental health from poor, fair, good, very good, to excellent (exhibit 9). While patients did not report significantly different general health compared to the general public, patients did record significantly poorer mental health than the general public.

The general public and patient populations were also divided by gender and examined for self-reported general and mental health (table 8.9). Male and female patients differed in self-reported mental health with women significantly recording poorer mental health than males; whereas, there were no significant differences in self-reported health between males and females in the general public. However, men in treatment compared to those in the general public reported significantly poorer mental health, but similar general health.

Table 8.9: Self-reported General and Mental Health in Patients Compared to the General Public.

	Patients (n=187		General Public (n=315		
	Mean (SD)		Mean (SD)		Significance
Self-reported General Health	3.4706 (.89379)		3.4127 (1.07127)		.516
Self-reported Mental Health	3.1667 (1.12426)		4.0476 (.93462)		<.001**
	Men (n=130)	Women (n=55)			
Self-reported General Health	3.53 (.855)	3.36 (.969)			.245
Self-reported Mental Health	3.34 (.961)	2.89 (1.012)			.006*
			Men (n=145)	Women (n=170)	
Self-reported General Health			3.52 (1.167)	3.32 (.976)	.206
Self-reported Mental Health			4.15 (.988)	3.96 (.879)	.193
	Men (n=130)		Men (n=145)		
Self-reported General Health	3.52 (.855)		3.52 (1.1267)		.957
Self-reported Mental Health	3.34 (.961)		4.15 (.988)		<.001**

*p<0.05
**p<0.001

Discussion and Policy Implications

Study Limitations

Since Zoomerang® is an online survey delivery program, it may not fully represent the population at large. It may have missed people who are not registered with the site or who do not partake in online surveys. The online survey included participants from Alabama, Georgia, and Tennessee, whereas the patient population came from treatment facilities in Georgia and Tennessee. These patients came from all over the United States and represented 31 different states. Therefore, regional

variations could have played a role in the outcomes of the study. Additionally, it was found that there are variations in the out-of-pocket spending for an individual patient between states (Zuvekas and Meyerhoefer 2009) which could have contributed to the current data.

What are the perceived barriers?

The general public perceived more parity related barriers in terms of paying for treatment and using health insurance to pay for treatment than patients currently in treatment. Further, it was split almost fifty-fifty that when people were asked “if you needed treatment for drugs and/or alcohol dependence, would the cost of treatment affect your decision to go?” This answer also did not depend on income or age. These findings suggest that money and healthcare costs are playing a role in a person’s decision to seek treatment for a substance dependence issue. Since the most cited reason for not seeking treatment when it was needed was a lack of health coverage or could not afford the costs of treatment (SAMHSA 2010), this is a major policy issue that needs to be addressed. While the passing of the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008, aims to improve benefits for mental health, only time will tell if barriers to receiving treatment are removed. Also, it may be important to educate the general public about the resources available to them. Since the general public participants expressed more parity-related barriers relating to health insurance and paying for treatment than patients in treatment, it is important to address this disparity so people feel they can seek treatment if needed.

It is apparent that some stigma still exists in the parity debate surrounding substance dependence. While the National Institutes of Health declared that substance dependence is a disease of the brain (NIH 2007), the general public participants within this study believed less strongly in general parity than patients in treatment. Further, the men within the general public pool thought the least of general parity beliefs. There are clearly still stigma obstacles to overcome.

Linkages to mental health

According to our study, there appears to be a need for concurrent mental health and substance dependence treatment. Men in treatment reported significantly poorer mental health than men within the general public, and women in treatment reported even poorer mental health than the male patients. There were no significant differences reported by any of the groups on general physical health even though mental and physical health are so intricately related. Since 170 million Americans health benefits were “carved out” in 2006 (Frank and Garfield 2007), there is clearly a need to coordinate all benefits (both physical and mental health) in order to get the best care for the patient, and to get the patient into recovery which would benefit the entire community.

Pharmacotherapies for Substance Dependence

Throughout both the patient and general public participants, there were beliefs in using medications to treat substance dependence. While utilization of pharmacotherapies and technologies is generally low within the treatment field (Ducharme et al. 2006; Ducharme and Abraham 2008), there is clearly demand by both patients and the general public to have these services available.The coverage of pharmacotherapies is said to be on par with other services (Barry et al. 2003; Frank et al. 2005; Knudsen et al. 2007), but out-of-pocket spending on these medications is still a financial burden to the individual patient (Zuvekas and Meyerhoefer 2009). These issues need to be examined further since patients are open and receptive to these technologies.

Conclusions

Since over 30% of patients become noncompliant with substance dependence treatment within 30 days (Weert-van Oene et al. 2007), all barriers to keeping patients in treatment need to be explored. The financial burden of paying for treatment as well as health coverage for such services is an important health policy that needs continued review. Participants from the general public expressed that money would affect their decision to seek treatment, and that they perceived payment and health insurance barriers with respect to treatment. There is a need for better education of available resources and a better way of linking patients with all the care they need including mental health and substance dependence treatment.

References

Barry, C. L. (2006). "The Political Evolution of Mental Health Parity." Harv. Rev. Psychiatry **14**: 185-194.

Barry, C. L., J. R. Gabel, et al. (2003). "Design of Mental Health Benefits: Still Unequal After All These Years." Health Affairs **22**(5): 127-137.

Bentler, P. M. and D. G. Bonett (1980). "Significance Tests and Goodness of Fit in the Analysis of Covariance Structures." Psychological Bulletin **88**: 588-606.

Ducharme, L. J. and A. J. Abraham (2008). "State Policy Influence on the Early Diffusion of Buprenorphine in Community Treatment Programs." Substance Abuse Treatment, Prevention, and Policy **3**(17): 1-10.

Ducharme, L. J., H. K. Knudsen, et al. (2006). "Trends in the Adoption of Medications for Alcohol Dependence." Journal of Clinical Psychopharmacology **26**(Supplement 1): S13-S19.

Frank, R. G., R. M. Conti, et al. (2005). "Mental Health Policy and Psychotropic Drugs." The Milbank Quaterly **83**(2): 271-298.

Frank, R. G. and R. L. Garfield (2007). "Managed Behavioral Health Care Carve-Outs: Past Performance and Future Prospects." Annual Review of Public Health **28**: 303-320.

Greenfield, S. F., A. J. Brooks, et al. (2007). "Substance Abuse Treatment Entry, Retention, and Outcome in Women: A Review of the Literature." Drug and Alcohol Dependence **86**: 1-21.

Hinkin, T. (1995). "A Review of Scale Development Practices in the Study of Organizations." Journal of Management **21**(5): 967-988.

Hodgkin, D., C. M. Horgan, et al. (2009). "Benefit Limits for Behavioral Health Care in Private Health Plans." Administration and Policy in Mental Health **36**: 15-23.

Joreskog, K. G. and D. Sorbom (2006). LISREL 8.8 for Windows [Computer Software]. Lincolnwood, IL, Scientific Software International, Inc. .

Kessler, R. C., C. R. Cantrell, et al. (2007). "The Effects of Copayments on Medication Adherence During the First Two Year of Prescription Drug Treatment." Journal of Occupational and Environmental Medicine **49**: 597-609.

Knudsen, H. K., L. J. Ducharme, et al. (2007). "The Adoption of Medications in Substance Abuse Treatment: Associations with Organizational Characteristics and Technology Clusters." Drug and Alcohol Dependence **87**: 164-174.

Kuehn, B. M. (2008). "Congress Passes Mental Health Parity." JAMA **300**: 1868.

Lance, C. E. and R. J. Vandenberg (2001). Confirmatory Factor Analysis. Measuring and Analyzing Behavior in Organizations: Advances in Measurement and Data Analysis. F. Drasgow and N. Schmitt. San Francisco, Jossey-Bass.

Lo Sasso, A. T. and J. S. Lyons (2002). "The Effects of Copayments on Substance Abuse Treatment Expenditures and Treatment Reoccurrence." Psychiatric Services **53**(12): 1605-1611.

Lo Sasso, A. T. and J. S. Lyons (2004). "The Sensitivity of Substance Abuse Treatment Intensity to Co-Payment Levels." The Journal of Behavioral Health Services & Research **31**(1): 50-65.

Marsh, H. W. and K. Hau (1996). "Assessing Goodness of Fit: Is Parsimony Always Desirable?" Journal of Experimental Education **64**(4): 364-391.

McDonald, R. P. and H. W. Marsh (1990). "Choosing a Multivariate Model: Noncentrality and Goodness of Fit." Psychological Bulletin **107**: 247-255.

McLellan, A. T., D. C. Lewis, et al. (2000). "Drug Dependence, a Chronis Medical Illness. Implications for Treatment, Insurance, and Outcomes Evaluation." JAMA **284**(13): 1689-1695.

NIH (2007). The National Institutes of Health, National Institute of Drug Abuse. Understanding Drug Abuse and Addiction, DHHS, http://www.nida.nih.gov/Infofacts/understand.html, 2008.

Nunnally, J. (1976). Psychometric Theory, 2nd Edition. New York, NY, McGraw-Hill.

Rosenbach, M., T. Lake, et al. (2009). "Implementaion of Mental Health Parity: Lessons from California." Psychiatric Services **60**(12).

SAMHSA (2010). "United States Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. Office of Applied Studies. National Survey of Substance Abuse Treatment Services (N-SSATS), 2008 [United States] [Computer file]. ICPSR26221-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2010-01-20. doi:10.3886/ICPSR26221."

SPSS (2008). SPSS Base 17.0 User's Guide. . Chicago, IL, SPSS, Inc. .

Weert-van Oene, G. H., H. Burger, et al. (2007). "Identification of Patients at High Risk of Noncompliance in Substance Dependence Treatment." Eur Addict Res **13**: 74-80.

Zuvekas, S. H. and C. D. Meyerhoefer (2009). "State Variations in the Out-of-Pocket Spending Burden for Outpatient Mental Health Treatment." Health Affairs **28**(3).

CHAPTER 9

DISCUSSION AND CONCLUSIONS

Conclusions

The goal of the current study was to explore parity-related barriers that patients in treatment face in completing substance dependence treatment, and to also consider the perspectives and opinions of the general public since addiction could affect anyone.

Looking at only patients in treatment for substance dependence, they overwhelmingly believed in parity and treating mental health and substance dependence the same as physical health. They also felt strongly that medications can help a person overcome substance dependence and were open to using pharmacotherapies for treatment.

While those using insurance to pay for any portion of treatment reported significantly fewer payment barriers, only 65% of those reporting having health insurance were using it to pay for any portion of treatment. Twenty-eight percent of patients reported that paying for treatment would be their biggest barrier to completing treatment. Patients using self-pay or money from family members experienced higher payment and insurance barriers. All of these issues may cause patients to become noncompliant with treatment.

The parity-related dimensions were also assessed in a general population participant pool. In comparison, the general public pool perceived greater payment and

insurance barriers than those currently in treatment. Half of the general public pool expressed that money would affect their decision to seek treatment for substance dependence if they needed it. These are major perceived barriers and could prevent people from getting care that really need it. There does seem to be some stigma in that patients rated mental health and substance dependence parity higher than the general public. There is demand for the use of pharmacotherapies for substance dependence and there is a need for strong linkages between mental health and physical health services increasing the need for parity.

Practical implications

This study has several practical implications in that the data came directly from self-report questionnaires. The perceived barriers and opinions were those of patients in treatment for substance dependence and from general public participants randomly selected to answer the questionnaire online. The data were real-life opinions that could translate into reasons why patients are not completing treatment or why they are not seeking treatment for a problem.

The parity-related dimensions were psychometrically sound and could be used within the treatment arena to assess perceived barriers patients are facing and to open communication lines between patients and providers. The data from the general public can be used to address education gaps in that there are perceived barriers for people who have not even been to treatment yet and to explore different methods for getting people to treatment that need it.

Limitations

While the current research provided a lot of information, there were some limitations to the study that must be noted. First, although patients were in treatment facilities in the Southeast, they resided from 31 different states. Furthermore, they could have held health insurance from even a different state than they resided in. While the patients were from all over, the general public pool only resided in Georgia, Alabama, and Tennessee. There may have been regional variations in perceptions, financial barriers, and other opinions.

the patient population was a convenience sample of those who volunteered at participating facilities. While the study was sufficiently powered to draw inferences from the patient population, it would have been beneficial to survey more patients from different facilities throughout the country. Additionally, the general public pool consisted of participants who happened to partake in online surveys through Zoomerang. Therefore, the sample may not be completely representative of the general public.

All data was self-report data. Patients reported how they would pay for treatment, whether they would use health insurance, whether they would use pharmacotherapies, and how much they would pay out-of-pocket. It would have been beneficial to concurrently examine patient records on payments, medication use/indications, and out-of-pocket charges.

Directions for Future Research

This study can be used to direct many future research projects. It represents a unique area of study that has not been probed previously. Questions were asked directly to patients about paying for treatment, using health insurance to pay for treatment, and incorporating pharmacotherapies into treatment. Each of these areas represents an opportunity for randomized-controlled studies. Studies could explore how much insurance coverage is needed to affect treatment outcomes, how much patients are willing to pay, or how many visits should be covered by insurance. In addition to studies involving patients already in treatment, there are potential opportunities for studies involving the general public. Since addiction could affect anyone, any barriers people face to seeking treatment need to be addressed. Randomized-controlled trials could assess the general publics' opinions on specific payment burdens, specific health insurance coverage, specific visit lengths, and whether they would seek necessary treatment.

REFERENCES

Ajzen, I. and M. Fishbein (1980). Understanding Attitudes and Predicting Social Behavior. Englewood-Cliffs, NJ, Prentice-Hall.

Ajzen, I. and T. J. Madden (1986). "Prediction of Goal-Directed Behavior: Attitudes, Intentions, and Perceived Behavioral Control." Journal of Experimental Social Psychology 22: 453-474.

APA (2001). Diagnostic and Statistical Manual of Mental Disorders (4th ed.). Washington, DC, America Psychiatric Association.

APA (2008). American Psychological Association Practice Organization, Government Relations Office. Summary of the Wellstone-Domenici Mental Health Parity and Addiction Equity Act of 2008, http://www.apapractice.org/#. APA Practice Organization, Government Relations Office.

ASAM (2007). American Society of Addiction Medicine. Patient Placement Criteria, http://www.asam.org/PatientPlacementCriteria.html, 2007. .

Azrin, S. T., H. A. Huskamp, et al. (2007). "Impact of Full Mental Health and Substance Abuse Parity for Children in the Federal Employees Health Benefits Program." Pediatrics 119(2): 452-459.

Barry, C., Busch, SH. (2007). "Do State Parity Laws Reduce the Financial Burden on Families of Children with Mental Health Care Needs?" Health Services Research 42(3): 1062-1084.

Barry, C. L. (2006). "The Political Evolution of Mental Health Parity." Harv. Rev. Psychiatry 14: 185-194.

Barry, C. L., J. R. Gabel, et al. (2003). "Design of Mental Health Benefits: Still Unequal After All These Years." Health Affairs 22(5): 127-137.

Barry, C. L. and M. S. Ridgely (2008). "Mental Health and Substance Abuse Insuranec Parity for Federal Employees: How did Health Plans Respond?" Journal of Policy Analysis and Management 27(1): 155-170.

Bentler, P. M. and D. G. Bonett (1980). "Significance Tests and Goodness of Fit in the Analysis of Covariance Structures." Psychological Bulletin 88: 588-606.

Browne, M. W. and R. Cudeck (1993). Alternative Ways of Assessing Fit. . Testing Structural Equation Models. K. A. Bollen and J. S. Long. Thousand Oaks, CA, Sage: 136-162.

Cartwright, W. S. (2008). "Economic Costs of Drug Abuse: Financial, Cost of Illness, and Services." Journal of Substance Abuse Treatment 34: 224-233.

Clark, R. E., M. Samnaliev, et al. (2009). "Impact of Substance Disorders on Medical Expenditures for Medicaid Beneficiaries with Behavioral Health Disorders." Psychiatric Services 60(1): 35-42.

Claxton, G., B. DiJulio, et al. (2007). Claxton, G., DiJulio, B., Finder, B., Becker, E. Employer Health Benefits 2007. Kaiser Family Foundation, Health Research and Educational Trust 097517, 2007. . K. F. Foundation, Health Research and Educational Trust.

Congress, U. S. (2008). Emergency Economic Stabilization. H.R. 1424. United States of America.

Costello, A. B. and J. W. Osborne (2005). "Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most from Your Analysis." Practical Assessment, Research & Evaluation 10(7).

Davis, K. (2007). "Uninsured in America: Problems and Possible Solutions." British Medical Journal 334: 346-348.

DHHS (1996). United States Department of Health and Human Services. Mental Health Parity Act of 1996, http://mentalhealth.samhsa.gov/cmhs/ManagedCare/Parity/ParityAct96.asp, 1996.

Ducharme, L. J. and A. J. Abraham (2008). "State Policy Influence on the Early Diffusion of Buprenorphine in Community Treatment Programs." Substance Abuse Treatment, Prevention, and Policy 3(17): 1-10.

Ducharme, L. J., H. K. Knudsen, et al. (2006). "Trends in the Adoption of Medications for Alcohol Dependence." Journal of Clinical Psychopharmacology 26(Supplement 1): S13-S19.

ERISA (1974). Employee Retirement Income Security Act, Section 514, United States of America, 29 U.S.C. § 1144 (a) (1974).

Fabrigar, L. R., D. T. Wegener, et al. (1999). "Evaluating the use of Exploratory Factor Analysis in Psychological Research." Psychological Methods 4(3): 272-299.

Fishbein, M. and I. Ajzen (1975). Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Reading, MA, Addison-Wesley.

Frank, R. G., R. M. Conti, et al. (2005). "Mental Health Policy and Psychotropic Drugs." The Milbank Quaterly 83(2): 271-298.

Frank, R. G. and R. L. Garfield (2007). "Managed Behavioral Health Care Carve-Outs: Past Performance and Future Prospects." Annual Review of Public Health 28: 303-320.

Frank, R. G., T. G. McGuire, et al. (1995). "Risk Contracts in Managed Mental Health Care." Health Affairs 14(3): 51-64.

GAO (2000). United States General Accounting Office. Mental Health Parity Act: Despite New Federal Standards, Mental Health Benefits Remain Limited, GAO/HEHS-00-95, Washington, D.C., 2000.

Garcia, L. M., K. A. McGeary, et al. (1999). "The Impact of Insurance Status on Drug Abuse Treatment Completion." J Health Care Financ 26(1): 40-47.

Goldman, H. H., R. G. Frank, et al. (2006). "Behavioral Health Insurance Parity for Federal Employees." The New England Journal of Medicine 354: 1378-1386.

Greenfield, S. F., A. J. Brooks, et al. (2007). "Substance Abuse Treatment Entry, Retention, and Outcome in Women: A Review of the Literature." Drug and Alcohol Dependence 86: 1-21.

Harris, A. H. S., J. D. McKeller, et al. (2006). "Predictors of Engagement in Continuing Care Following Residential Substance Use Disorder Treatment." Drug and Alcohol Dependence 84: 93-101.

Hartmann, D. J. (1999). "Replication and Extension Analyzing the Factor Structure of Locus of Control Scales for Substance-abusing Behaviors." Psychological Reports 84(1): 277-287

Heinrich, C. J. and C. J. Hill (2008). "Role of State Policies in the Adoption of Naltrexone for Substance Abuse Treatment." Health Services Research 43(3): 951-969.

Hinkin, T. (1995). "A Review of Scale Development Practices in the Study of Organizations." Journal of Management 21(5): 967-988.

Hirsch, L. S., B. S. Mccrady, et al. (1997). "The Drinking-Related Locus of Control Scale: The Factor Structure with Treatment-Seeking Outpatients." Journal of Studies on Alcohol 58(2): 162-166.

Hodgkin, D., C. M. Horgan, et al. (2009). "Benefit Limits for Behavioral Health Care in Private Health Plans." Administration and Policy in Mental Health 36: 15-23.

Horgan, C. M., D. W. Garnick, et al. (2007). "Changes in How Health Plans Provide Behavioral Health Services." Journal of Behavioral Health Services & Research.

Horgan, C. M. and E. L. Merrick (2001). Financing of Substance Abuse Treatment Services. New York, Kluwer Academic/Plenum Publishers.

Horgan, C. M., S. Reif, et al. (2008). "Availability of Addiction Medications in Private Health Plans." Journal of Substance Abuse Treatment 34: 147-156.

Joreskog, K. G. and D. Sorbom (2006). LISREL 8.8 for Windows [Computer Software]. Lincolnwood, IL, Scientific Software International, Inc. .

Kaiser, H. F. (1970). "A Second Generation Little Jiffy." Psychometrika 35: 401-415.

Kaiser, H. F. (1974). "An Index of Factorial Simplicity." Psychometrika 39: 31-36.

Kessler, R. C., C. R. Cantrell, et al. (2007). "The Effects of Copayments on Medication Adherence During the First Two Year of Prescription Drug Treatment." Journal of Occupational and Environmental Medicine 49: 597-609.

Knudsen, H. K., L. J. Ducharme, et al. (2007). "The Adoption of Medications in Substance Abuse Treatment: Associations with Organizational Characteristics and Technology Clusters." Drug and Alcohol Dependence 87: 164-174.

Kuehn, B. M. (2008). "Congress Passes Mental Health Parity." JAMA 300: 1868.

Lance, C. E. and R. J. Vandenberg (2001). Confirmatory Factor Analysis. Measuring and Analyzing Behavior in Organizations: Advances in Measurement and Data Analysis. F. Drasgow and N. Schmitt. San Francisco, Jossey-Bass.

Legislatures (2008). National Conference of State Legislatures. State Laws Mandating or Regulating Mental Health Benefits. http://www.ncsl.org/programs/health/mentalben.htm, 2008.

Lexi-Comp, I. (2009).

Liu, X., R. Sturm, et al. (2000). "The Impact of Prior Authorization on Outpatient Utilization in Managed Behavioral Health Plans." Medical Care Research and Review 57(5): 182-195.

Lo Sasso, A. T. and J. S. Lyons (2002). "The Effects of Copayments on Substance Abuse Treatment Expenditures and Treatment Reoccurrence." Psychiatric Services 53(12): 1605-1611.

Lo Sasso, A. T. and J. S. Lyons (2004). "The Sensitivity of Substance Abuse Treatment Intensity to Co-Payment Levels." The Journal of Behavioral Health Services & Research 31(1): 50-65.

MacCallum, R. C., K. F. Widaman, et al. (1999). "Sample Size in Factor Analysis." Psychological Methods 4(1): 84-99.

MacKenzie, S. B., P. M. Podsakoff, et al. (1991). "Organizational Citizenship Behavior and Objective Productivity as Determinants of Managerial Evaluations of Salespersons' Performance." Organizational Behavior and Human Decision Processes 50: 123-150.

Mark, T. L., J. D. Dilonardo, et al. (2003). "Factors Associated with the Receipt of Treatment Following Detoxification." Journal of Substance Abuse Treatment 24(4): 299-304.

Marsh, H. W. and K. Hau (1996). "Assessing Goodness of Fit: Is Parsimony Always Desirable?" Journal of Experimental Education 64(4): 364-391.

Maxfield, M., L. Achman, et al. (2004). Maxfield M, Achman L, Cook A. National Estimates of Mental Health Insurance Benefits. DHHS Pub. No. (SMA) 04-3872. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, 2004. .

McDonald, R. P. and H. W. Marsh (1990). "Choosing a Multivariate Model: Noncentrality and Goodness of Fit." Psychological Bulletin 107: 247-255.

McLellan, A. T., D. C. Lewis, et al. (2000). "Drug Dependence, a Chronis Medical Illness. Implications for Treatment, Insurance, and Outcomes Evaluation." JAMA 284(13): 1689-1695.

Merrick, E. L., C. M. Horgan, et al. (2008). "Accessing Specialty Behavioral Health Treatment in Private Health Plans." Journal of Behavioral Health Services & Research.

Meyers, L. S., G. Gamst, et al. (2006). Applied Multivariate Research: Design and Interpretation, SAGE.

NAMI (2007). National Alliance on Mental Illness. State Mental Health Parity Laws 2007. http://www.nami.org/Content/ContentGroups/Policy/Issues_Spotlights/Parity1/State_Mental_Health_Parity_Laws_20071.htm, 2007.

Newhouse, J. P. (1993). Free for All? Lessons from the RAND Health Insurance Experiment. Cambridge, MA, Harvard University Press.

NIH (2007). The National Institutes of Health, National Institute of Drug Abuse. Understanding Drug Abuse and Addiction, DHHS, http://www.nida.nih.gov/Infofacts/understand.html, 2008.

Nunnally, J. (1976). Psychometric Theory, 2nd Edition. New York, NY, McGraw-Hill.

Pearlin, L. I. and C. Schooler (1978). "The Structure of Coping." Journal of Health and Social Behavior 19: 2-21.

PewCenter (2010). The Pew Center. "US Uninsured Rate Climbs Again." http://www.stateline.org/live/details/story?contentId=235948. Access Date: April 2, 2010.

Poortinga, W., F. D. Dunstan, et al. (2008). "Health Locus of Control Beliefs and Socio-economic Differences in Self-Rated Health." Preventative Medicine 46: 374-380.

Robinson, G., J. Connolly, et al. (2006). Robinson, G., Connolly, J., Whitter, M., & Magaña, C. State Mandates for Treatment for Mental Illness and Substance Use Disorders. DHHS Pub. No. (SMA) 07-4228. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, 2006. D. o. H. a. H. Services. Rockville, MD, Center for Mental Health Services, Substance Abuse and Mental Health Services Administration.

Roman, P. M. and J. A. Johnson (2002). "Adoption and Implementation of New Technologies in Substance Abuse Treatment." Journal of Substance Abuse Treatment 22(211-218).

Rosenbach, M., T. Lake, et al. (2009). "Implementaion of Mental Health Parity: Lessons from California." Psychiatric Services 60(12).

Rosenbach, M., T. Lake, et al. (2003). Rosenbach, M., Lake, T., Young, C., et al. (2003). Effects of the Vermont Mental Health and Substance Abuse Parity Law. DHHS Pub. No. (SMA) 03-3822. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration. . D. o. H. a. H. Services. Rockville, MD, Center for Mental Health Services, Substance Abuse and Mental Health Services Administration.

Rotter, J. B. (1954). Social Learning and Clinical Psychology. New York, NY, Prentice-Hall.

SAMHSA (2003). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. National Survey of Substance Abuse Treatment Services (N-SSATS): 2002. Data on Substance Abuse Treatment Facilities, DASIS Series: S-19, DHHS Publication No. (SMA) 03-3777, Rockville, MD, 2003.

SAMHSA (2004). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. National Survey of Substance Abuse Treatment Services (N-SSATS): 2003. Data on Substance Abuse Treatment Facilities, DASIS Series: S-24, DHHS Publication No. (SMA) 04-3966, Rockville, MD, 2004.

SAMHSA (2005). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. National Survey of Substance Abuse Treatment Services (N-SSATS): 2004. Data on Substance Abuse Treatment Facilities, DASIS Series: S-28, DHHS Publication No. (SMA) 05-4112, Rockville, MD, 2005.

SAMHSA (2006). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. National Survey of Substance Abuse Treatment Services (N-SSATS): 2005. Data on Substance Abuse Treatment Facilities, DASIS Series: S-34, DHHS Publication No. (SMA) 06-4206, Rockville, MD, 2006.

SAMHSA (2006). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. National Survey on Drug Use and Health: The NSDUH Report, Issue 10, http://oas.samhsa.gov/2k6/pay/pay.pdf, 2006. .

SAMHSA (2007). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. National Survey of Substance Abuse Treatment Services (N-SSATS): 2006. Data on Substance Abuse Treatment Facilities, DASIS Series: S-39, DHHS Publication No. (SMA) 07-4296, Rockville, MD, 2007.

SAMHSA (2008). "Substance Abuse and Mental Health Services Administration, Office of Applied Studies. National Survey of Substance Abuse Treatment Services (N-SSATS): 2007. Data on Substance Abuse Treatment Facilities, DASIS Series: S-44, DHHS Publication No. (SMA) 08-4348, Rockville, MD, 2008.".

SAMHSA (2008). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. Results from the 2007 National Survey on Drug Use and Health: National Findings, NSDUH Series H-34, DHHS Publication No. SMA 08-4343. Rockville, MD, 2008.

SAMHSA (2008). Substance Abuse and Mental Health Services Administration, Office of Applied Studies. Treatment Episode Data Sets (TEDS): 2005. Discharges from Substance Abuse Treatment Services, DASIS Series: S-41, DHHS Publication No. (SMA) 08-4314, Rockville, MD, 2008.

SAMHSA (2009). "Substance Abuse and Mental Health Services Administration, Office of Applied Studies. Results from the 2008 National Survey on Drug Use and Health: National Findings, NSDUH Series H-36, HHS Publication No. SMA 00-4434. Rockville, MD, 2009.".

SAMHSA (2010). "United States Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. Office of Applied Studies. National Survey of Substance Abuse Treatment Services (N-SSATS), 2008 [United States] [Computer file]. ICPSR26221-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2010-01-20. doi:10.3886/ICPSR26221."

SAMHSA (2010). "United States Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. Office of Applied Studies. Treatment Episode Data Set - Admissions (TEDS-A), 2008 [Computer file]. ICPSR27241-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2010-03-25. doi: 10.3886/ICPSR27241.".

Scott, K. M., M. Von Korff, et al. (2008). "Mental-physical co-morbidity and its relationship with disability: results from the World Mental Health Surveys." Psychological Medicine: 1-11.

Shepard, D. S., M. Daley, et al. (2002). "Managed Care and the Quality of Substance Abuse Treatment." The Journal of Mental Health Policy and Economics 5: 163-174.

Simpson, D. D., G. W. Joe, et al. (1997). "Treatment Retention and Follow-up Outcomes in the Drug Abuse Treatment Outcome Study (DATOS)." Psychology of Addictive Behaviors 11(4): 294-307.

Sing, M., S. Hill, et al. (1998). "The Costs and Effects of Parity for Mental Health and Substance Abuse Insurance Benefits." US Department of Health and Human Services MC99-80.

SPSS (2008). SPSS Base 17.0 User's Guide. . Chicago, IL, SPSS, Inc. .

Tabachnick, B. G. and L. S. Fidell (2001). Using Multivariate Statistics. Boston, Allyn and Bacon.

TCU (2005). Institute of Behavioral Research, Texas Christian University. The Client Evaluation of Self and Treatment (TCU CEST). http://www.ibr.tcu.edu/pubs/datacoll/Forms/cest-sg.pdf.

USCB (2010). "US Census Bureau, American FactFinder. "Population Finder." http://factfinder.census.gov/home/saff/main.html?_lang=en. Access Date: April 2, 2010.".

USDL (2010). "United States Department of Labor, Bureau of Labor Statistics. "Employment Situation." http://www.bls.gov/ Access Date: April 2, 2010.".

Velicer, W. F. and D. N. Jackson (1990). "Component Analysis Versus Common Factor-Analysis- Some Further Observations." Multivariate Behavioral Research 25(1): 97-114.

Wallston, K. A., B. S. Wallston, et al. (1978). "Development of Multidimensional Health Locus of Control (MHLC) Scales." Health Education & Behavior 6(1): 160.

Weert-van Oene, G. H., H. Burger, et al. (2007). "Identification of Patients at High Risk of Noncompliance in Substance Dependence Treatment." Eur Addict Res 13: 74-80.

WHO. (2010). "Substance Abuse Facts and Figures." from http://www.who.int/substance_abuse/facts/en/.

Zuvekas, S. H. and C. D. Meyerhoefer (2009). "State Variations in the Out-of-Pocket Spending Burden for Outpatient Mental Health Treatment." Health Affairs 28(3).

APPENDIX A

STATE LAWS MANDATING OR REGULATING MENTAL HEALTH BENEFITS

(LEGISLATURES 2008)

State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
AL	2001: H.677 of 2000	Individual and group with a small employer exemption of 50 or less.	Mental illness.	Mandated offering.	Must be equal.
AL	2002: S. 293	Adds health care service plans and health maintenance organizations (signed 4/26/02)	Mental illness	Mandated offering	Must be equal
AK	1997; ----- 2006 HB 289	Group - 5 employees or less exempt; 20 or less must offer coverage. ------ Limited to large employer group markets, and does not apply if it would result in an increase in the cost of the plan of 1% or more.	Alcoholism and Drug Use. ------ Mental Illness.	Minimum Mandated ------- Mandated Benefit.	Must be equal ------ Must be Equal.
AZ	1998: Ariz. Rev. Stat. Ann. 20-2322	Group with small employer exemption 50 or less, or cost increase of 1% or more.	Mental illness.	Mandate for plans that offer benefits.	Can be different.
AR	1987 ------ 1997: §23-00-506 [Act 1020 of '97] ------- 2001 HB 1562	Group and HMO. ------ Group: small employer exemption 50 or less; cost increase 1.5% or more exempted. ------ Not applicable to employers with 50 or fewer employees and to plans covering state employees. Exempts health benefit plans if it will result in cost increase of 1.5% or more.	Alcoholism and drug dependency. ------- Mental illnesses and developmental disorders. ------- Mental Illness.	Mandated Offering ------ Full parity. ------- Minimum Mandated	Not less favorable generally. ------ Must be equal. ------ Must be equal.
CA	1974: Cal. Ins. Code § 10125	Group.	Mental or nervous disorders.	Mandated offering.	Not specified.
CA	2000: Cal. Ins. Code § 10144.5	Group, individual and HMO.	Severe mental illness.	Full parity.	Must be equal.
CO	1992: Colo. Rev. Stat. § 10-16-104(5) ----- 1994	Group. ------ Group	Mental illness excluding autism. ------ Alcoholism	Mandated benefits. -------- Mandated Offering	Shall not exceed 50% of the payment. Deductible shall not differ. -------- Shall not exceed 50% of the payment. Deductible shall not differ.
CO	1998: §10-16-104(5.5)	Group.	Biologically based mental illness.	Full parity.	Must be equal.

State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
CO	2002: Chapter 208 of 2002	Provide coverage for substance abuse treatment regardless of whether the treatment is voluntary or court-ordered. (signed 5/28/02)	Substance abuse	Clarification of earlier laws	
CO	2003: H 1164	Allows exceptions for barebones policies		Exceptions	
CT	2000: Conn. Gen. Stat. §38a-488a; §38a-514a	Group and individual.	Mental or nervous conditions; alcoholism and drug addiction.	Full parity.	Must be equal.
DE	1999: Del. Code Ann. Tit. 18 § 3343 Tit. 18 § 3566 ------ 2001 H 100	Group and individual. ------ Group, HMO, individual and state employee plans.	Serious mental illnesses. ------ Drug and Alcohol Dependencies.	Full parity. ------ Parity	Must be equal. ------ Must be equal.
FL	1992: Fla. Stat. § 627.668 ------- 1993	Group and HMO. ------- Group and HMO.	Mental and nervous disorders. ------- Substance Abuse.	Mandated offering. ------- Mandated offering.	May be different after minimum benefits are met. ------ Not Specified.
GA	1998: Ga. Code §33-24-29; §33-24-28.1 (SB 620, 1998)	Group and individual.	Mental disorders including substance abuse.	Mandated offering.	Must be equal.
HI	1999: Hawaii Rev. Stat. §431M-5 ------- 2000 HB 2392	Group and individual with small employer exemption- 25 or less employees. ------ Deletes exemptions for employers with 25 or fewer employees & for government employee health benefit plans.	Serious mental illness. -------	Full parity. --------	Must be equal. --------
HI	1988: Hawaii Rev. Stat. §431M-1 ~7	Individual, group and HMO.	Mental illness.	Mandated benefits.	Must be comparable.
HI	2003: HB 1321 ------ 2005: SB 761	Makes law permanent, deleting sunset dates. ------ Expands definition of 'serious mental disorders' in current law to include delusional disorders, major depression, obsessive-compulsive disorders, and dissociative disorders.	Mental illness. --------	Full parity --------	 -------
ID	2006 HB 615 (ID Stat.: §67-5761A)	Health Insurance Plans for State Employees and their family members only.	Serious Mental Illness as defined in the APA's DSM-IV-TR.	Parity	Must be Equal.

State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
IL	1991: Ill. Rev. Stat. Ch. 215 §5/370c ------ 1995 ----- 2001 SB 1341 ----- 2005 HB 59 ------- 2006 HB 4125	Group. ------ Group ------ Exempts employers with 50 or fewer employees. ------ Eliminates sunset provision in existing mental health parity law. ------ Makes HMOs subject to existing mental health coverage requirements.	Mental, emotional or nervous disorders. ------ Alcoholism ----- Serious Mental Illness ------ N/A ------- Increased number of visits for treatment of pervasive developmental disorders.	Full parity 2005 [See co-payment exceptions]	Mandated offering, 1991-2004 ------- Mandated benefits ------ Parity for Serious mental illness; Mandated offering for other mental illness. ------ N/A ------- N/A
IN	1997 HB 1400 ------ 2000: *H.1108 of '99*; Ind. Code § 27-13-7-14.8 Ind. Code § 5-10-8-9 (state)	Private Insurance Policies offering mental health benefits. Exempts employers with fewer than 50 employees and any business whose rates would increase over 1% as a result of legislation. ------ Group, individual and state employees with a small employer exemption 50 or less, or cost increase of 4% or more.	Mental Illness ------ Mental illness.	Parity ------- Mandate for plans that offer benefits. Full parity for state employee plans.
IN	2003: H 1135	Adds substance abuse benefit for those with mental illnesses	Substance abuse	Mandate for those with mental illnesses	
IA	2005 HF 420; IA Code 514C.22 (2005)	Group policies to companies with more than 50 employees, public employees and small businesses that currently have mental health coverage.	Substance abuse, eating disorders, ADD not included.	Mandated Benefit.	Must be Equal.
KS	1998: § 40-2.105 2001: *H.2033 of '01* H 2071 of 2003 ------ 2006 HB 2691	Group, individual, HMO and state employee plans. H. 2071 extended sunset to Dec. 31, 2003. ------ Group. If a policy does not have aggregate lifetime or annual limits on other medical benefits, then it may not impose them on mental health benefits.	Alcoholism or drug abuse or mental conditions. ------- Mental Illness	Mandated benefits. ------ Minimum Mandated Benefits.	Not specified. ------ Not Specified.

State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
KY	1980 ------ 1986: Ky. Rev. Stat. §§ 304.17-318 [group] §§304.38-193 [HMO]	Group ------ Group.	Alcoholism ------- Mental illness.	Mandated Offering. ------- Mandated offering.	Not Specified. ------ To the same extent as coverage for physical illness.
KY	2000: HB 268	Group with small employer exemption of 50 or less.	Mental illness and alcohol and other drug abuse.	Mandate for plans that offer benefits.	Equal if offered.
KY	2002: H 391 of '02	Small employer exemption raised to 51.			
LA	2000: La. Rev. Stat. Ann. § 22:669(1)	Group, HMO and state employee benefit plans.	Serious mental illness.	Mandated benefits.	Must be equal.
LA	1982: § 22:669(2)	Group, self-insured and state employee plans.	Mental illness.	Mandated offering.	Must be equal.
LA	1982: §22:215.5	Group.	Alcoholism and drug abuse.	Mandated offering.	Not specified.
ME	1996: Me. Rev. Stat. tit. 24 § 2325-A(5-D)	Individual plans must offer coverage.	Mental illness.	Mandated offering.	Must be equal.
ME	2003: H 973	Group of 21 or more, including HMOs, adds substance abuse-related disorders and other illness categories.	Substance abuse, etc.	Full parity	
MD	1994: Md. Ins. Code Ann. § 15-802 (click 'code folder', then 'insurance', title 15, section 802)	Individual and group.	Mental illness, emotional disorder, drug abuse or alcohol abuse disorder.	Full parity [See co-payment exceptions]	Must be equal. Except outpatient: 80% -visits 1-5; 65% - visits 6-30; 50% visits over 30.
MD	2002: Chapter 394 of '02 (eff. 10/1/02)	Requires individual and group insurers, nonprofit health service plans, and HMOs to provide coverage for medically necessary residential crisis services.			
MA	1991 ------ 1996: Mass. Gen. Laws Ch. 175:47B	Individual, group, HMO. ------ Individual, group and HMO.	Alcoholism. ------ Mental or nervous conditions.	Mandated Benefits. ------ Mandated benefits.	Not specified. ------ Not specified.
MA	2001: *S.2036/ Ch. 80 of '00*	Individual, group and HMO.	Biologically-based mental illness.	Full Parity for bio-based; mandated benefits of mental illness and substance abuse.	Must be equal.

State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
MI	1988 ------ 2001: *S.1209 of '00, see §3501*	Group for Inpatient; Group and Individual for other levels. Exemption for cost increases of 3% or more. ------ HMO's only, group and individual contracts, with a cost exemption of 3%.	Mental health and substance abuse ------- Mental health and substance abuse	Minimum mandated benefits. ------- Minimum mandated benefits.	Charges, conditions for services shall not be less favorable than the maximum for any other comparable service. -------- Charges, conditions for services shall not be less favorable than the maximum for any other comparable service.
MN	1986 ------- 1995; 2000: Minn. Stat. § 62A.152	Group and Individual. -------- Group, individual and HMO's (full parity for HMO's).	Alcoholism, chemical dependency, or drug addiction. ------- Mental health and chemical dependency.	Mandated Benefit. ------- Full parity for plans that offer coverage and HMO's.	Not Specified. ------ Must be equal.
MS	1975: Miss. Code Ann. § 83-9-39 to 41	Group.	Alcoholism.	Mandated benefit.	Not specified.
MS	2002: Miss. Code Ann. § 83-9-41; H667 of '01	Group and individual with an exemption if costs of implementation are 1% or more of overall costs.	Mental illness.	Mandated offering for small employers of 100 or less. Minimum mandated benefits for others.	Must be equal for inpatient and partial, however, payment for outpatient visits shall be a minimum of fifty percent (50%) of covered expenses.
MO	1997: §§ 376.825; § 376.811	Group, individual and HMO.	Mental disorders and chemical dependency.	Mandated offering.	Must be equal.
MT	2000: Mont. Code Ann. § 33-22-706	Group and individual.	Severe mental illness.	Full parity.	Must be equal.
MT	1997; 2001 Mont. Code Ann. § 33-22-701 to 705	Group.	Mental illness alcoholism and drug addiction.	Mandated benefits.	No less favorable up to maximums.
MT	2003: H 384	12 month pilot allows exceptions for barebones policies.		Exceptions	
NE	1989 ------ 2000: §§ 44-791 to 44-795	Group and HMO ------ Group and HMO with a small employer exemption of 15 or less.	Alcoholism ------ Serious mental illness.	Mandated Offering. ------ Mandate for plans that offer coverage.	No less favorable generally than for physical illness. ------ May be different.

State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
NV	1997 ------- 2000: Nev. Rev. Stat. §§ 689A.0455; 689B.0359; 695B.1938; 695C.1738	Group, individual, and HMO. ------ Group and individual with a small employer exemption 25 or less, or cost increases of 2% or more.	Abuse of alcohol or drugs. ------- Severe mental illness.	Mandated benefits. ------- Mandated benefits.	Must be paid in the same manner. ------- Not more than 150% of out-of-pocket expenses required for medical and surgical.
NH	1993: N.H. Rev. Stat. Ann. §§ 415:18-a	Group, individual and HMO. Specifies different benefits for mental illness under major medical and non-major medical plans.	Mental or nervous conditions.	Mandated benefits.	Ratio of benefits shall be substantially the same as benefits for other illnesses.
NH	1995: § 417:E-1	Group.	Biologically- based mental illnesses	Full parity.	Must be equal.
NH	2002: H 762; Chapter 204 of 2002	Any policy of group or blanket accident or health insurance.			
NJ	1985 ------ 1999: §§ 17:48-6v; 17-48A-7u; 17B:26-2.1s ------- 2000 ------ 2002	Group and individual. ------ Group and individual ------ State Employee Plans. ------ Individual Health Plans.	Alcoholism ------- Biologically based mental illness. ------- Biologically based mental illness. ------ Biologically based mental illness; alcohol and substance abuse.	Mandated benefits for care prescribed by a doctor. ------ Full parity. ------ Parity. ------ Mandated Offering.	Must be equal. ------ Must be equal. ------ Must be equal. ------ Bio based mental illness: No coinsurance but $500 copayment per inpatient stay. 30% coinsurance for outpatient stay. Alcohol and substance abuse: 30% coinsurance.
NM	1987 ----- 2000: N.M. Stat. Ann. §59A-23E-18	Group. ----- Group with different exemptions for small and large employers.	Alcoholism ----- Mental health benefits.	Mandated Offering. ----- Full parity.	Consistent with those imposed on other benefits. ----- Must be equal.
NY	1998: Ins. Law § 3221(1)(5)(A) ---------- 2004 --------- 2006		Group. -------- Group ------- All private insurance policies. See: Timothy's Law web site, 2007.	Mental, nervous, or emotional disorders and alcoholism and substance abuse. ------- Eating Disorders -------- Mental health disorders	Mandated Offering. -------- Minimum Mandated Benefit. -------- Full parity

State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
NC	1985 ------ 1991 HB 279 ----- 1997: N.C. Gen. Stat. § 58-51-55 ------ 2007	Group ------ State Employees Health Plan. ------ State Employees Health Plan ------ Health Insurers	Chemical Dependency. ------ Mental Illness ------ Mental illness and chemical dependency. ------ Mental Illness	Mandated Offering. ------ Parity ----- Full parity. ----- Parity	$8,000 per year and $16,000 per lifetime. ----- Must be equal ----- Must be equal. ----- Must be equal.
ND	1995: N.D. Cent. Code § 26.1-36-09 *[page 431]*	Group and HMO.	Mental disorders, alcoholism and drug addiction.	Mandated benefits.	No deductible or copay for first 5 hours not to exceed 20% for remaining hours.
ND	2003: H 2210	Adds that inpatient treatment and partial hospitalization, or alternative treatment must be provided by an addiction treatment program licensed under chapter 50-31.	Substance abuse	Clarification	
OH	2006: SB 116 --------- 1985: Ohio Rev. Code Ann.§ 3923.30	Law signed 12/29/06; effective ---------- Group and self-insured.	7 “biologically based mental illnesses,” such as schizophrenia and bipolar disorder ---------- Mental or nervous disorders and alcoholism.	Full Parity ---------- Mandate for plans that offer mental health coverage. Mandated benefits for alcoholism.	---------- Subject to reasonable deductibles and coinsurance.
OK	2000: Okla. Stat. tit. 36 §6060.11 to §6060.12 (SB 2, 1999)	Group with a small employer exemption 50 or less, or cost increase of 2% or more.	Severe mental illness.	Full parity.	Must be equal.
OR	1981 ------ 2000: Or. Rev. Stat § 743.556 ------ 2005: SB 913	Individual ----- Group and HMO. ----- Group.	Alcoholism ------ Mental or nervous conditions including alcoholism and chemical dependency. ------ Mental, nervous conditions including alcoholism and chemical dependency.	Mandated Offering. ------ Mandated benefits. ------- 2007: Full parity	Coverage must be no less than 80% of total. ------ Shall be no greater than those for other illnesses. -------
PA	1989 ------ 1999 H.366 of 1998, (see § 634)	Group and HMO. ------ Group and HMO-small employer exemption 50 or less.	Alcoholism or drug addiction. ------ Serious mental illness.	Mandated benefits. ------ Mandated benefits.	For the first course of treatment shall be no greater than those for other illnesses. ------ Must not prohibit access to care.

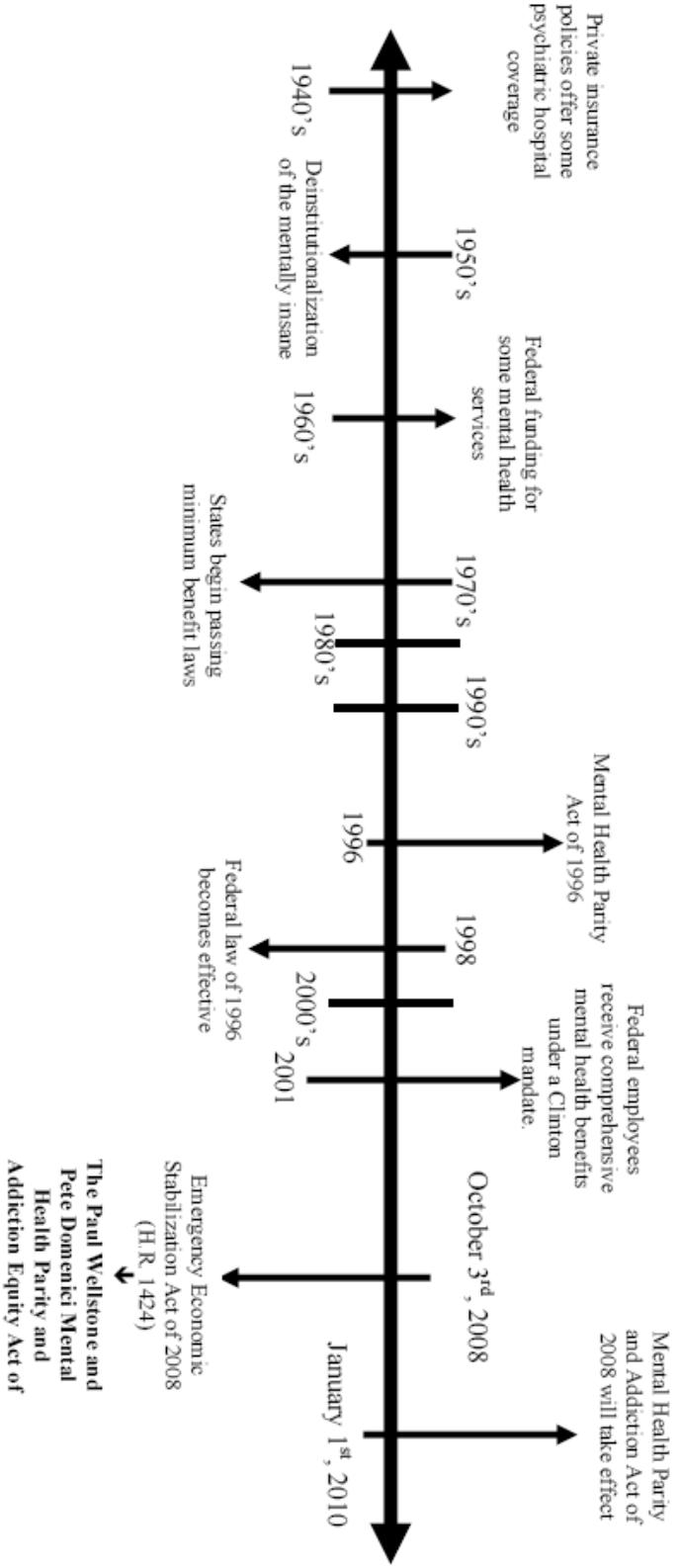
State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
RI	1995 ----- 1995 R.I. Gen. Laws § 27-38-2.1	Individual, group, self-insured and HMO. ----- Individual, group, self-insured and HMO. *(in effect through 12/31/2001)*	Substance dependency and abuse. ------ Serious mental illness.	Mandated benefits. ------ Full parity.	Not Specified. ----- Must be equal.
RI	1/1/2002 H.5478/ S.832 of 2001	Expands the state mental health parity law to include coverage for all mental illnesses and substance abuse disorders. *(replaces § 27-38.2-1 above)*	All mental illnesses & substance abuse disorders.	Full parity	Must be equal
SC	1994 S.C. Code Ann. § 38-71-737	Group.	Psychiatric conditions, including substance abuse.	Mandated offering.	May be different.
SC	2000 SB 1041 (repealed Jan 1, 2005) ------ 2005 SB 49	State employee insurance plan with cost increase exemptions. ------ Health Plan Insurers. Individual and small group policies are exempt.	Mental health condition or alcohol or substance abuse. ------ Psychiatric illnesses as defined by DSM-IV published by the APA.	Full parity. ------ Parity.	Must be equal. ------ Must be equal.
SD	1979 ------ 1998 § 58-17-98 (HB 1262, 1998) ------ 1999 HB 1264 ------ 2003 HB 1236	Group, individual and HMO. ------ Group, individual and HMO. ------ Group, individual and HMO. ------ Group, individual and HMO.	Alcoholism. ------- Biologically- based mental illness. ------- Clarifies biologically based mental illness as: schizophrenia, other psychotic disorders, bipolar disorder, major depression, and obsessive-compulsive disorder. ------- Offers exclusion of coverage for specified mental illness.	Mandated Offering. ------- Full parity. ------- Parity ------- n/a	Must be equal. ------- Must be equal. ------ Must be equal. ------ n/a
TN	1982 ------ 2000 § 56-7-2360; § 56-7-2601	Groups with exemptions for employers with 50 or fewer employees or it plan results in cost increases of 1% or more. ------ Group with a small employer exemption 25 or less, or cost increase of 1% or more.	Alcohol and Drug Dependency. ------ Mental or nervous conditions.	Mandated Offering. ------ Mandated benefits.	Must be equal. ------ Must be equal.
TX	1981 ------ 1991	Group and self-insured with an exemption for self-insured plans of 250 or less. ----- State employee plans.	Chemical Dependency. ------ Biologically-based mental illness.	Mandated Benefit. ------ Full parity.	Must be sufficient to provide appropriate care. ------ Must be equal.

State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
TX	1997 Ins. art. 3.51-14	Group and HMO, with a small employer exemption of 50 or less.	Serious mental illness.	Mandated benefits with a mandated offering for small groups of 50 or less.	Must be equal.
TX	2003: SB 541	Allows insurers and HMOs to offer policies without mandates for the treatment of mental illness and chemical dependency, with an exception for serious mental illnesses.			
UT	2001 Utah Code Ann. 31A-22-625 (HB 35, 2000)	Group (as of 7/1/01) and HMO's (as of 1/1/01)	Mental illness as defined by the DSM.	Mandated offering.	May include a restriction.
VT	1997 Vt. Stat. Ann. tit. 8 §4089b (HB 57, 1997) ------- 2006 HB 40.	Group and individual. ------- Amends the 1998 statute to add an "any willing provider" amendment. The law prohibits an insurer from excluding from its network or list of authorized providers any licensed mental health or substance abuse provider located within the geographic coverage area of the health benefit plan if the provider is willing to meet the terms and conditions for participation established by the health insurer.	Mental health condition including alcohol and substance abuse. --------	Full parity. --------	Must be equal. --------
VA	2000 thru 7/1/2004 & indefinitely. Va. Code. § 38.2-3412.1	Group and individual with a small group exemption 25 or less. (Note: Extended without sunset date by S 44, see below)	Biologically-based mental illness including drug and alcohol addiction.	Full parity.	Must be equal to achieve the same outcome as treatment for any other illness.
VA	Effective 7/1/2004. § 38.2-3412.1	Group, individual and HMO. (See 2004 change, below)	Mental health and substance abuse.	Mandated benefits.	Co-insurance for outpatient can be no more than 50% after 5th visit. All others must be equal.
VA	S 44 of '04	Repeals sunset date of 7/1/04, above. (enacted 3/19/04)	Mental health and substance abuse.		
VA	S 212 of '04 *§§ 37.1-255*	Establishes Inspector General for Mental Health	Mental health & substance abuse		

State	Eff. Date Law citation/	Insurance Policies Affected by Law.	Illnesses Covered.	Type of Benefit	Co-pays and Co-insurance
WA	1987 Wash. Rev. Code § 48.21.241 -------- 2005 HB 1154 (effective 2006-10) -------- 2006 HB 2501	Group and HMO. ------- State's Basic Health Plan and businesses with 51 or more employees, excluding those that are self-insured. ------ Clarifies that mental health coverage applies to all group health plans for groups other than small groups as defined in existing state law. Provides that the copayment or coinsurance for mental health services be no more than the co-payment or coinsurance for medical and surgical services otherwise provided under the health benefit plan.	Mental health treatment. ------ Mental Health Services except substance related disorders, life transition problems, skilled nursing services, home health care, or court ordered treatment. Court ordered treatment allowed if deemed medically necessary. ------- Requires prescription drugs to treat mental illness be covered as are other prescription drugs.	Mandated offering. ------ Mandated offering. ---------	Reasonable deductible amounts and co-payments. ----- Not Specified. ---------
WV	1998 § 33-16-3a	Group and individual with a cost increase exemption of 1%.	Mental or nervous conditions.	Mandated offering.	Not specified.
WV	2002 HB 4039 ------ 2004 HB 4286	Insurance plans and HMOs. Law allows insurer to apply "whatever cost containment measures may be necessary" to maintain costs below 2% of the total costs for the plan. ------- Repeals a section in previous statute relating to coverage for alcohol dependency since it is superseded by a section that explicitly mentions substance abuse treatment.	Serious Mental Illness as defined in the APA DSM. --------	Full parity ----------	Not specified. ---------
WI	Wis. Stat. § 632.89 ------ 2004 SB 71	Group (with "at least specified minimum benefits in every group contract") ------ Group Insurance	Mental or nervous disorders ------ Exempts prescription drugs and diagnostic tests from minimum coverage limits.	Mandated offering ----- Mandated Offering.	Comparable deductibles and copays ------ Not specified.

APPENDIX B

TIMELINE



APPENDIX C

COMMONLY USED MEDICATIONS FOR SUBSTANCE DEPENDENCE

(LEXI-COMP 2009)

Alcohol Dependence

- Disulfiram
  - Brand Name: Antabuse
  - Pharmacologic category: Aldehyde Dehydrogenase Inhibitor
  - Use: Management of chronic alcoholism
    - Causes nausea/vomiting when the individual consumes alcohol
  - Generic: No
  - Dosage form: Tablets 500mg/day for 1-2 weeks, maintenance at 250mg/day for months-years
  - Price: 250mg (30) $111.93
  - FDA Approval: 1948
- Naltrexone
  - Brand Name: Depade (tablet), ReVia (tablet), Vivitrol (Injection)
  - Pharmacologic category: Opioid antagonist
  - Blocks opiate receptors, inhibits reinforcing effects of alcohol, reduces craving
  - Generic: Yes
  - Dosage forms: Injection or tablets
  - Price: Naltrexone HCl 50mg (30) $103.99, ReVia 50mg (30) $248.19
  - FDA Approval: ReVia 1994
- Acamprosate
  - Brand Name: Campral
  - Pharmacologic Category: GABA agonist/Glutamate Antagonist
  - Use: Maintenance of alcohol abstinence
    - Reduces craving for alcohol and longer term withdrawal symptoms
  - Generic: No
  - Dosage form: Tablet
  - Price: 333mg (180) $136.08
  - FDA Approved: July 29th, 2004
- Clonidine
  - Brand Name: Catapres
  - Pharmacologic Category: Alpha-2-Andrenergic Agonist
  - Use: Management of mild to moderate hypertension
    - Unlabeled uses: Withdrawal symptoms, severe pain
  - Generic: Yes
  - Dosage: Tablet, Transdermal Patch, Injection

- Price:
  - Patch weekly (Catapres) 0.1mg/24hr (4) $116.60, 0.2mg/24hr (4) $182.58, 0.3mg/24hr (4) $250.76
  - Tablet (Catapres) 0.1mg (60) $74.99, 0.2mg (60) $109.99, 0.3mg (60) $134.99
  - Tablet (Clonidine HCl) 0.1mg (60) $23.32, 0.2mg (90)$22.21, 0.3mg (60) $17.99

Benzodiazepines

Opiate Dependence

- Methadone
  - Brand Name: Dolophine, Methadone Diskets, Methadone Intensol, Methadose
  - Pharmacologic Category: Analgesic, Opioid
  - Use: Management of moderate-to-severe pain, detoxification and maintenance treatment of Opioid addiction
  - Generic: Yes
  - Dosage: Injection, Solution, or Tablet
  - Price: Methadone HCl 5mg (20) $11.99, 10mg (20) $11.33
- Buprenorphine
  - Brand Name: Buprenex, Subutex
  - Pharmacologic category: Analgesic, Opioid
  - Use: Management of moderate to severe pain, treatment of opioid dependence, reduces withdrawal symptoms
    - Best used in monitored initiation period, then use Suboxone
  - Generic: Yes
  - Dosage forms: Injection (Buprenex), Tablet (Subutex)
  - Price: Buprenex 0.3mg/mL (3) $32.99
- Buprenorphine and Naloxone
  - Brand Name: Suboxone
  - Pharmacologic category: Analgesic, Opioid
  - Use: Treatment of Opioid dependence
    - Naloxone portion eliminates the “high” effect of opiates
  - Generic: No
  - Dosage forms: Tablet
  - Price: 8mg (Buprenorphine) and 2mg (Naloxone) 30 pills $172.33

APPENDIX D

RESEARCH STUDY LETTER TO PATIENTS

RESEARCH STUDY

We'd like your opinion about health insurance, paying for treatment, and medication use.

The reason for this study is to assess your opinions about treatment for substance dependence, specifically about paying for treatment, about health insurance and about your opinions on medications that are some times used to treat substance dependence. Your answers will help us determine some of the barriers patients may face regarding treatment and will be used to examine policies and public health trends. You will not directly benefit from this research. If you volunteer to take part in this study, you must 18 years of age or older and you will be asked to do the following things:

1. Answer survey questions about your health and your treatment for substance dependence that should take about 20 minutes.

2. Provide your opinions about paying for substance dependence treatment, health insurance, taking medications for substance dependence, and about completing treatment for substance dependence.

The study is a doctoral dissertation project by April L. Chapman from the Department of Clinical and Administrative Pharmacy at the University of Georgia (706) 542-0418 under the direction of Dr. Merrill A. Norton, Clinical and Administrative Pharmacy, University of Georgia (706) 542-5371. Your participation is voluntary, and you can refuse to participate or stop taking the survey at anytime without giving a reason and without penalty or loss of benefits to which you are otherwise entitled. If you decide while you are taking the survey you do not wish to participate any longer, you may keep your survey or decide to have it destroyed. Further, your decision to

participate or not to participate will not affect your relationship with the treatment center or your access to treatment.

All surveys will be kept anonymous. Also, there are no questions in the survey that could be linked to you or that could place you at risk for criminal or civil liability or that could be damaging to your financial standing, employability, insurability, or reputation. Once you have completed the survey, you may seal it in the envelope provided and return to the facility administrator who gave you the survey. The sealed envelopes will be stored a locked location until they are all given to Dr. Merrill A. Norton. You will not be contacted again after you have completed the survey and you may skip any questions you do not feel comfortable answering. Feel free to contact the researchers if you have any questions about the study before taking the survey or at any time during or after participation.

Questions or concerns about your rights as a research participant should be directed to The Chairperson, University of Georgia Institutional Review Board, 612 Boyd GSRC, Athens, Georgia 30602-7411; telephone (706) 542-3199; email address irb@uga.edu.

Thank you for your time.

APPENDIX E

PATIENT INSTRUMENT

Thank you for taking part in this research study. All of your answers are very important to us, so please do not leave any questions blank. There are no right or wrong answers, and remember, we are only interested in *your* thoughts and opinions about the questions we ask.

1. In general, compared to other people your age, would you say that your health is:

____ Excellent ____ Very good ____ Good ____ Fair ____ Poor

2. Which best describes the referral source for you coming to treatment? Or who convinced you that you needed treatment?

____ Self
____ Family member
____ Friend
____ Doctor or other healthcare professional
____ Religious organization
____ Criminal justice referral or Court referral
____ Other (Specify) _____

3. How will you pay for treatment? (Circle **all** that apply) Please provide what percentage that payment option will be. For example, if you are completely paying for treatment from your personal savings or earnings, you would put 100%. If you do not know, just circle, I don't know.

Private insurance _____%	Military health care _____%
Medicaid _____%	My employer will _____% pay for treatment
Medicare _____%	Disability insurance _____%
Personal savings or earnings _____%	Treatment is free for me
Money from family or friends _____%	I don't know
The court system _____%	Other (Please List):

4. How many other times have you been to treatment for substance dependence issues?

____ None (this is my first time) ____ Once before ____ Twice before ____ Three times or more

5. On a scale of 1 to 10, how much of an effect will paying for treatment (either through insurance and/or your own money) have on you completing your full treatment?

1	2	3	4	5	6	7	8	9	10
Paying for treatment has nothing to do with me completing my full treatment				Paying for treatment may or may not affect me completing treatment					I will not complete my full treatment because of payment costs

1

6. Please point out how much you agree or disagree with the following statements about your treatment.

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1. I am in control of my health.					
2. What happens to me in the future mostly depends on me.					
3. I constantly worry about how I'm going to pay for my treatment.					
4. Il think getting this treatment for my addiction problems is a financial drain on my family.					
5. I am, or would be, scared to use insurance to pay for treatment because I wouldn't want an insurer to know about my substance dependence issues.					
6. I think substance dependence should be treated like any other physical illness.					
7. I am satisfied with how much insurance I have for addiction medications.					
8. The amount of money I have to pay from my own savings for treatment is too high.					
9. I cannot afford medications for substance dependence.					
10. I believe using health insurance for treatment would prevent a person from having health insurance in the future.					
11. I think substance dependence is a disease like any other disease.					
12. Addiction medications are an important part of treatment.					
13. I have made financial sacrifices to pay for substance dependence treatment.					
14. My health insurance, or lack of insurance, has caused extra worry during my treatment.					
15. Medications can really help a person overcome substance dependence issues.					
16. There is little I can do to change many of the important things in my life.					

2

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
17. I think patients should pay more from their own savings for substance dependence treatment than for other medical problems.					
18. I believe I will complete treatment.					
19. I am, or would be, uncomfortable using health insurance for substance dependence treatment.					
20. I think having health insurance will help a person if they have substance dependence issues.					
21. I don't think addiction medications will help with substance dependence issues.					
22. It is hard for me to make it to all of my treatment sessions.					
23. I will finish the full treatment I am supposed to.					
24. I can do just about anything I really set my mind to.					
25. It is just as important to treat substance dependence issues as it is to treat other health issues.					
26. I am scared of the side effects of addiction medications.					
27. I often feel helpless in dealing with problems in my life.					
28. It is ok to stop coming to treatment if I am feeling better.					
29. My health insurance, or lack of insurance, has caused me to end a treatment service before I thought I was ready.					
30. I cannot afford substance dependence treatment.					
31. I think mental health should be treated like any other physical illness.					
32. I am satisfied with how much insurance I have for substance dependence treatment.					
33. I always come to treatment when I am supposed to.					

7. In general, would you say your **mental health** is,

____ Excellent
____ Very good
____ Good
____ Fair
____ Poor

8. What do you think will be your biggest barrier to completing treatment?

_____

_____

9. Have you ever taken any of the following medications? (Check all that apply)

____ Abilify
____ Antabuse
____ Buprenex
____ Buprenorphine
____ Campral
____ Catapres
____ Celexa
____ Clozapine
____ Depade
____ Depakote
____ Effexor
____ Geodon
____ Haldol
____ Lexapro
____ Lithium
____ Luvox
____ Methadone
____ Naltrexone
____ Paxil
____ Prozac
____ ReVia
____ Risperdal
____ Seroquel
____ Suboxone
____ Subutex
____ Topamax
____ Vivitrol
____ Wellbutrin
____ Xanax
____ Zoloft
____ Zyprexa

Finally, please provide some information about yourself. This information will be used for descriptive purposes only.

1. What state do you currently live in?

_____

2. In what state are you getting treatment for alcohol and/or drug dependence?

_____

3. What is your gender? Male / Female

4. What is your current age? _____

5. What is your ethnicity? (Circle One)

____ Asian
____ American Indian or Alaskan Native
____ Black/African American
____ Hispanic or Latino
____ White/Caucasian
____ Other _____

6. What is your current household income per year?

_____

7. What is your current employment status? (Circle one)

____ Self-Employed
____ Employed Full Time
____ Employed Part Time
____ Homemaker
____ Student
____ Unemployed
____ Retired

4

8. What is the highest level of education you have completed?

____ Less than high school
____ High school/GED
____ Some college
____ 2-year college degree (Associates)
____ 4-year college degree (BA, BS)
____ Graduate education

9. How many days has it been since your last drug and/or alcohol use? _____

10. Do you currently have health insurance?

Yes / No / I don't know

If you do not have health insurance you may skip to question #13

11. Which type of health insurance do you have? (Circle all that apply)

____ Private insurance (*Examples: Blue Cross/Blue Shield, Aetna, CIGNA*)
____ Medicare
____ Medicaid
____ Military health care
____ Federal employees benefits
____ Other insurance _____
____ I don't know which type, but I know I have health insurance.

12. Do you get your health insurance through employment? (either through your job, your spouse's job, or your parents' job)

Yes / No / I don't know

13. Please list the substances that you believe you are dependent on or addicted to.

Drug of choice _____

Other(s) _____

_____

_____

14. How would you describe your **current** treatment for substance dependence.

____ Overnight Hospital Inpatient Care
____ Overnight Drug or Alcohol Facility
____ Outpatient Drug or Alcohol Facility
____ Care at a Mental Health Center
____ Private Doctor's Office
____ Treatment in a Prison or Jail
____ Other (Specify) _____

APPENDIX F

GENERAL PUBLIC INSTRUMENT

zoomerang

April Chapman UGA

Created: October 12 2009, 12:22 PM
Last Modified: October 12 2009, 12:22 PM
Design Theme: Global Blue
Language: English
Button Options: Labels
Disable Browser "Back" Button: False

Healthcare Opinions

Page 1 - Heading

Please do not leave any questions blank. There are no right or wrong answers, and we are only interested in your thoughts and opinions about the questions we ask.

Page 2 - Question 1 - Choice - One Answer (Bullets) [Mandatory]

In general, compared to other people your age, would you say that your health is:

- ○ Excellent
- ○ Very Good
- ○ Good
- ○ Fair
- ○ Poor

Page 2 - Question 2 - Choice - One Answer (Bullets) [Mandatory]

In general, would you say you mental health is:

- ○ Excellent
- ○ Very Good
- ○ Good
- ○ Fair
- ○ Poor

Page 2 - Question 3 - Choice - One Answer (Bullets) [Mandatory]

Do you currently have health insurance?

- ○ Yes [Skip to 3]
- ○ No [Skip to 4]
- ○ I don't know [Skip to 4]

[Skip Unconditionally to 4]

Page 3 - Question 4 - Choice - Multiple Answers (Bullets)

Which type of health insurance do you have? (Check all that apply)

- ☐ Private Insurance (Example: Blue Cross/Blue Shield, Aetna, CIGNA)
- ☐ Medicare
- ☐ Medicaid
- ☐ Military Health Care
- ☐ Federal Employees Benefits
- ☐ I don't know which type, but I know I have health insurance.
- ☐ Other, please specify

Page 3 - Question 5 - Choice - One Answer (Bullets)

Do you get your health insurance through employment? (Either through your job, your spouse's job, or your parent's job?)

- ○ Yes
- ○ No
- ○ I don't know

Page 4 - Question 6 - Yes or No [Mandatory]

Has anyone ever told you that you have a problem with drugs and/or alcohol?

- ○ Yes
- ○ No

Page 4 - Question 7 - Choice - One Answer (Bullets) [Mandatory]

Would you say you have an addiction to drugs and/or alcohol?

- ○ Yes
- ○ No
- ○ Maybe

Page 4 - Question 8 - Yes or No [Mandatory]

Have you ever been to treatment for an addiction problem?

- ○ Yes
- ○ No

Page 4 - Question 9 - Yes or No [Mandatory]

Does anyone in your family have an addiction problem to drugs and/or alcohol?

- ○ Yes [Skip to 5]
- ○ No [Skip to 6]

[Skip Unconditionally to 6]

Page 5 - Question 10 - Choice - Multiple Answers (Bullets)

Which family member has an addiction problem to drugs and/or alcohol? (Check all that apply)

- ☐ Parent
- ☐ Child
- ☐ Spouse
- ☐ Grandparent
- ☐ Aunt or Uncle
- ☐ Silbing
- ☐ Cousin
- ☐ Other, please specify

Page 6 - Question 11 - Yes or No [Mandatory]

If you needed treatment for drugs and/or alcohol dependence, would the cost of treatment affect your decision to go?

- ○ Yes
- ○ No

Page 6 - Question 12 - Rating Scale - One Answer (Horizontal) [Mandatory]

On a scale of 1 to 10, how big a role would money play in your decision to seek treatment for drug and/or alcohol dependence if you needed it?

I would seek treatment no matter what the cost to me.	2	3	4	The cost of treatment may or may not affect me seeking treatment	6
○	○	○	○	○	○

Page 6 - Question 13 - Choice - One Answer (Bullets) [Mandatory]

What is your current employment status?

- ○ Self-employed
- ○ Employed Full-Time
- ○ Employed Part-Time
- ○ Homemaker
- ○ Student
- ○ Unemployed
- ○ Retired

Page 6 - Question 14 - Open Ended - One Line [Mandatory]

What is your current age?

Page 7 - Heading

For the following questions, please point out how much you agree or disagree with the following statements. Some of the questions are general questions, while others are related to the treatment of substance dependence.
Please give your own opinion even if you have no experience with substance dependence and/or treatment.

Page 8 - Question 15 - Rating Scale - One Answer (Horizontal) [Mandatory]

I am in control of my health.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 8 - Question 16 - Rating Scale - One Answer (Horizontal) [Mandatory]

What happens to me in the future mostly depends on me.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 8 - Question 17 - Rating Scale - One Answer (Horizontal) [Mandatory]

I cannot afford medications for substance dependence.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 8 - Question 18 - Rating Scale - One Answer (Horizontal) [Mandatory]

I am, or would be uncomfortable using health insurance for substance dependence treatment.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 8 - Question 19 - Rating Scale - One Answer (Horizontal) [Mandatory]

I am scared of the side effects of addiction medications.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 9 - Question 20 - Rating Scale - One Answer (Horizontal) [Mandatory]

I think substance dependence is a disease like any other disease.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 9 - Question 21 - Rating Scale - One Answer (Horizontal) [Mandatory]

I don't think addiction medications will help with substance dependence issues.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 9 - Question 22 - Rating Scale - One Answer (Horizontal) [Mandatory]

I think mental health should be treated like any other physical illness.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 9 - Question 23 - Rating Scale - One Answer (Horizontal) [Mandatory]

There is little I can do to change many of the important things in my life.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 9 - Question 24 - Rating Scale - One Answer (Horizontal) [Mandatory]

I can do just about anything I really set my mind to.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 10 - Question 25 - Rating Scale - One Answer (Horizontal) [Mandatory]

I would have to make financial sacrifices to pay for substance dependence treatment.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 10 - Question 26 - Rating Scale - One Answer (Horizontal) [Mandatory]

I often feel helpless in dealing with problems in my life.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 10 - Question 27 - Rating Scale - One Answer (Horizontal) [Mandatory]

I think having health insurance will help a person if they have substance dependence issues.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 10 - Question 28 - Rating Scale - One Answer (Horizontal) [Mandatory]

I think patients should pay more from their own savings for substance dependence treatment than for other medical problems.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 10 - Question 29 - Rating Scale - One Answer (Horizontal) [Mandatory]

I cannot afford substance dependence treatment.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 11 - Question 30 - Rating Scale - One Answer (Horizontal) [Mandatory]

Addiction medications are an important part of treatment.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 11 - Question 31 - Rating Scale - One Answer (Horizontal) [Mandatory]

I think substance dependence should be treated like any other physical illness.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 11 - Question 32 - Rating Scale - One Answer (Horizontal) [Mandatory]

I believe using health insurance for substance dependence treatment would prevent a person from having health insurance in the future.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 11 - Question 33 - Rating Scale - One Answer (Horizontal) [Mandatory]

Medications can really help a person overcome substance dependence issues.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 11 - Question 34 - Rating Scale - One Answer (Horizontal) [Mandatory]

I think getting treatment for addiction problems would be a financial drain on my family.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 12 - Question 35 - Rating Scale - One Answer (Horizontal) [Mandatory]

It is just as important to treat substance dependence issues as it is to treat other health issues.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 12 - Question 36 - Rating Scale - One Answer (Horizontal) [Mandatory]

I am, or would be, scared to use health insurance to pay for treatment because I wouldn't want an insurer to know about my substance dependence issues.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Page 13 - Question 37 - Choice - Multiple Answers (Bullets)

Have you ever taken any of the following medications? (Check all that apply)

- ☐ Abilify
- ☐ Antabuse
- ☐ Buprenex
- ☐ Buprenorphine
- ☐ Campral
- ☐ Catapres
- ☐ Celexa
- ☐ Clozapine
- ☐ Depade
- ☐ Depakote
- ☐ Effexor
- ☐ Geodon
- ☐ Haldol
- ☐ Lexapro
- ☐ Lithium
- ☐ Luvox
- ☐ Methadone
- ☐ Naltrexone
- ☐ Paxil
- ☐ Prozac
- ☐ ReVia
- ☐ Risperdal
- ☐ Seroquel
- ☐ Suboxone
- ☐ Subutex
- ☐ Topamax
- ☐ Vivitrol
- ☐ Wellbutrin
- ☐ Xanax
- ☐ Zoloft
- ☐ Zyprexa
- ☐ None of the Above

Page 14 - Question 38 - Open Ended - One Line [Mandatory]

What state do you currently live in?

Page 14 - Question 39 - Choice - One Answer (Bullets) [Mandatory]

What is your gender?

- ○ Male
- ○ Female

Page 14 - Question 40 - Choice - One Answer (Bullets) [Mandatory]

What is your ethnicity?

- ○ Asian
- ○ American Indian or Alaskan Native
- ○ Black/African American

- ○ Hispanic or Latino
- ○ White/Caucasian
- ○ Other, please specify

Page 14 - Question 41 - Open Ended - One Line [Mandatory]

What is your current household income per year?

Page 14 - Question 42 - Choice - One Answer (Bullets) [Mandatory]

What is the highest level of education you have completed?

- ○ Less than high school
- ○ High school/GED
- ○ Some college
- ○ 2-year college degree (Associates)
- ○ 4-year college degree (BA, BS)
- ○ Graduate education

Thank You Page

Screen Out Page

Over Quota Page

Survey Closed Page

(Standard - Zoomerang branding)