STIGMA AS A BARRIER TO FORMAL TREATMENT FOR SUBSTANCE USE: A
GENDERED ANALYSIS

by

Kristi L. Stringer

Belinda Needham CHAIR
Shelia Cotton
Jalie Tucker

A THESIS

Submitted to the graduate faculty of The University of Alabama at Birmingham,
in partial fulfillment of the requirements for the degree of
Master of Arts

BIRMINGHAM, ALABAMA

2012
STIGMA AS A BARRIER TO FORMAL TREATMENT FOR SUBSTANCE USE: A GENDERED ANALYSIS

Kristi L. Stringer

DEPARTMENT OF SOCIOLOGY

ABSTRACT

It is estimated that approximately 22 million Americans are in need of treatment for substance related disorders each year; however 20 million of those in need of substance treatment fail to utilize formal treatment services. The large gap between those who need formal treatment services and those who receive such services indicates that a better understanding of factors affecting treatment utilization is needed. Researchers have shown that stigmatizing attitudes towards substance use disorders are a leading cause for treatment delay and avoidance. Furthermore, gender role theories suggest that women may experience greater stigma (double stigma or triple stigma) related to substance use than men due to their violation of female gender norms. Drawing on gender role theories, I hypothesized that women with unmet need would report more stigma related barriers to substance treatment than would men with unmet need. Furthermore, I hypothesized that mothers would report more stigma related barriers than non-mothers with unmet need.

The primary objective of this study was examine if the experience of stigma as a barrier to formal substance treatment varies by gender using a nationally representative sample of individuals with unmet need for treatment for substance use disorders. Data were pooled across eight years of the National Survey of Drug Use and Health. Results from three logistic regression models suggested that female substance users with unmet need reported more stigma related barriers than their male counterparts; however this re-
relationship was reduced to non-significance when education and race were controlled. Furthermore, mothers did not report greater stigma related barriers than non-mothers. The results suggested that higher levels of education and identifying as White were most strongly correlated with stigma as a barrier to substance treatment. Given the large gap between individuals who are in need of treatment, and those who avail themselves of such services, these results point to a need for better understanding of the ways in which social statuses affect stigma as a barrier to substance treatment.

Keywords: Gender, Alcohol, Substance Abuse, Stigma
DEDICATION

To my mother, Donna, thank you for all the encouragement, for your unconditional love and support throughout the years. I have faced numerous hurdles in my life and without your love, support, and encouragement I would not be where I am today. To my son, Anthony, thank you for your support, for helping to make life at home easier, and for providing me with motivation I needed to complete this task. You have been very patient with me and have done more than your fair share to keep the household running smoothly as I have worked toward my degrees. To my friends and colleagues, thank you for encouraging words, for listening when I was frustrated, and for forcing me to stop and smell the roses. I could not have done it without you.
ACKNOWLEDGMENTS

I would like to say thank you to Dr. Belinda Needham for her guidance and input during this process. I appreciate her willingness to be available and for always having an answer to my questions. I would also like to thank Dr. Needham for introducing me to the importance of the gender in medical care. She has opened my eyes to the ways in which gender constrains individual choices and how these constraints manifest themselves in health disparities. I would also like to thank Dr. Shelia Cotten for taking me under her wing, for being available to me throughout this process. Dr. Cotten has provided me with encouragement and guidance through times when I thought I wasn’t going to make it. Her professional demeanor, kind heart, and intellectual rigor has truly set an example of the academic researcher I hope to be one day. Finally, thank you to Dr. Jalie A. Tucker for her expertise in the field addictive behavior change. I am truly honored to have one of the nation’s leading experts in the field of formal treatment serving on my committee. I would also like to say thank you to Dr. Casey Borch and Dr. Erika Austin for their assistance in the development of this idea. I thank you all for your support, encouragement, and advise throughout this process.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>iii</td>
</tr>
<tr>
<td>DEDICATION</td>
<td>v</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>x</td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
</tr>
<tr>
<td>1. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>2. LITERATURE REVIEW</td>
<td>4</td>
</tr>
<tr>
<td>Formal Treatment</td>
<td>4</td>
</tr>
<tr>
<td>Barriers to Treatment</td>
<td>6</td>
</tr>
<tr>
<td>Person Related Barriers</td>
<td>7</td>
</tr>
<tr>
<td>Socioeconomic Related Barriers</td>
<td>8</td>
</tr>
<tr>
<td>Stigma</td>
<td>9</td>
</tr>
<tr>
<td>Health Related Stigma</td>
<td>11</td>
</tr>
<tr>
<td>Stigma of Substance Related Disorders</td>
<td>12</td>
</tr>
<tr>
<td>Gender Specific Barriers</td>
<td>14</td>
</tr>
<tr>
<td>3. THEORETICAL FRAMEWORK AND HYPOTHESIS</td>
<td>16</td>
</tr>
<tr>
<td>Double Standards, Double Deviance</td>
<td>16</td>
</tr>
</tbody>
</table>
4. METHODS .................................................................................................................. 19
   Data ............................................................................................................................. 19
   Analytic Sample Used In This Study ................................................................. 21
   Measures .................................................................................................................. 22
   Dependent Variable ............................................................................................... 22
   Independent Variables ......................................................................................... 24
   Covariates .............................................................................................................. 24
   Analytic Procedure ................................................................................................. 25
   Analytic Models ...................................................................................................... 26

5. RESULTS .................................................................................................................... 28
   Descriptive Results ................................................................................................. 28
   Bivariate Results .................................................................................................... 31
   Logistic Regression Results .................................................................................. 32

6. DISCUSSION, LIMITATIONS, AND CONCLUSION ............................................. 35
   Discussion ................................................................................................................ 35
   Limitations .............................................................................................................. 39
   Conclusions .......................................................................................................... 42

LIST OF REFERENCES ................................................................................................. 43

APPENDIX: IRB APPROVAL FORM ........................................................................ 56
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Tables</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frequency Distribution of Barriers Reported for the Entire Sample and Sub-Samples</td>
</tr>
<tr>
<td>2</td>
<td>Descriptive Statistics for All Variables in Sample, N=1,382</td>
</tr>
<tr>
<td>3</td>
<td>Descriptive Statistics For Females with Children and Females without Children</td>
</tr>
<tr>
<td>4</td>
<td>Descriptive Statistics and T-Test Results for Stigma Only and Stigma Plus Sub-Samples</td>
</tr>
<tr>
<td>5</td>
<td>Odds Ratios and 95% Confidence Intervals from Logistic Regression Coefficients Predicting Stigma as a Barrier to Substance Use Treatment (N=1,382)</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Basic Moderation Structure</td>
<td>18</td>
</tr>
</tbody>
</table>
CHAPTER ONE

INTRODUCTION

Substance related disorders are a common problem in modern society. In 2010, substance related disorders were estimated to affect 23.1 million Americans, yet community studies indicate that only 2.6 million individuals entered into formal treatment settings designed to specifically address substance related disorders\(^1\) (SAMHSA 2011). These numbers indicate a gap of 20.5 million citizens who experience a need for substance treatment services but fail to receive such services (SAMHSA 2011; Cohen et al. 2007). Furthermore, gender disparities in formal treatment utilization continue to persist with female substance users less likely to seek formal treatment than their male counterparts (Green 2006; Holmila and Raitasalo 2005; Wilsnack et al. 1991; Wilsnack and Wilsnack 1991; Wu and Ringwalt 2004). Researchers (Green 2006; Schober and Annis 1996) suggest that an understanding of gender specific treatment barriers is necessary in order to increase treatment utilization and improve outcomes for female substance users.

\(^1\)Currently there is disagreement on the appropriate terminology for alcohol and drug related problems. Addiction specialists have recently called for the retirement of such terms as “substance abuse,” and “substance misuse” which promote “blame the victim” labeling and ignore the disorder aspect of the condition (Kelly et al. 2010). For the purpose of this thesis, the term “substance use” refers to the recreational use of alcohol use, illicit drug use, and prescription drugs. “Substance related disorder” refers to problems related to alcohol use, illicit drug use, and prescription drug use.
Multiple factors have been identified as barriers to treatment including the fear of social stigma involved with formal treatment; this barrier appears to be especially acute among women with substance related problems (Copeland 1997; Kuebler and Hausser 1997). To date, there is a paucity of gender-based research concerning the extent to which stigma acts as a barrier to substance treatment using a nationally representative dataset. Furthermore, to my knowledge, this examination is the first to conduct a gender specific analysis of stigma as a barrier to substance treatment and the first to try to understand the role in which motherhood may affect the experience of stigma as a barrier to treatment.

The purpose of this study is to add to the existing body of knowledge regarding the potential role of gender in the relationship between treatment utilization and stigma as a barrier to substance treatment. This investigation involves the use of data from the National Survey of Drug Use and Health, pooled across eight years, 2003-2010.

This study has the following specific aims: 1) to investigate the role of stigma as a barrier to treatment among males and females with unmet need for substance use treatment; and 2) to understand the role of gender in moderating the relationship between unmet need and stigma as a treatment barrier. Chapter two will include a review of previous research relevant to treatment utilization among substance users including socioeconomic barriers, internal/person related barriers, and stigma related barriers to formal substance treatment. Chapter three will introduce the concepts of “double” and “triple” deviance, informed by gender theory, which will provide the theoretical underpinnings for the current investigation. Chapter four details the analytic methods used to address the specific aims of this study and chapter five presents the results of the current investigation. The final chapter concludes with a discussion of the current
findings in relation to the hypotheses as well as a discussion concerning the limitations
and future directions in the area of stigma as a barrier to substance treatment.
CHAPTER TWO

LITERATURE REVIEW

With an estimated 23 million Americans reporting problematic use of alcohol, prescription medications, and illicit drugs, substance related disorders and treatment for these disorders is a prominent health care concern in the United States (SAMHSA 2011). Substance use has been directly linked to more than 60 different medical conditions including neurological disorders, cirrhosis of the liver, hepatitis C, HIV/AIDS, and cardiovascular disorders (Mignon et al. 2009; Rehm 2011; Room, Babor, and Rehm 2005). Meta-analyses have revealed that, compared with those who report no substance use, individuals with substance related disorders are at an increased risk for almost every type of cancer, including cancers of the breast, liver, mouth, and esophagus (Room et al. 2005). Previous researchers (Green 2006; Raven et al. 2010; Schober and Annis 1996) propose that understanding the factors that affect treatment utilization is necessary given the effect substance related disorders have on a person’s physical and psychological well-being.

FORMAL TREATMENT

Recovery from substance related disorders generally occurs as a result of natural recovery, self-help group participation, and/or formal treatment in substance or alcohol
focused treatment facilities. Formal treatment refers to comprehensive inpatient, hospital-based programs, short- and long-term residential programs, and outpatient programs. These programs offer services specifically aimed at treatment of substance related problems including physical detoxification, counseling, psychiatric services, psychological services, social services and often follow-up care for persons with substance related disorders (Faupel, Horowitz, and Weaver 2010; Magura 2007; Mignon et al. 2009). Formal treatment typically focuses on the recognition and acceptance of substance use as a biological, social, and psychological disease and stresses the need for life-long abstinence and the participation in a lifelong recovery program (Magura 2007).

The research literature is replete with examples of specialized treatment for substance related disorders as effective means for reducing and eliminating substance use. Formal treatment has been positively associated with outcomes such as significant reductions in substance use, improved personal health, and reduced social and legal consequences related to substance use (Grella et al. 2010; McLellan et al. 2000; Miller, Walters, and Bennett 2001; Storbjörk and Ullman 2012). In a meta-analysis of 78 studies, which compared individuals with little to no treatment to individuals who had received formal treatment, researchers documented an overall positive effect for individuals who had received substance use treatment (Prendergast et al. 2002). Despite the proven effectiveness of formal treatment services, only 25% of individuals with substance related problems avail themselves of such services (Cohen et al. 2007; Grella et al. 2009; Wang et al. 2005).

Health services researchers have identified multiple factors correlated with substance treatment utilization and avoidance of treatment services. Grella et al. (2009)
recently examined the perceptions of unmet need for substance related problems using data drawn from the National Epidemiologic Survey on Alcohol and Related Conditions. Results indicated that only 14% of individuals needing treatment for substance related disorders received the treatment that they needed. While no gender differences were discovered between those who did and did not receive treatment, a substantial difference was found in regards to race. Non-whites were significantly more likely to report needing substance treatment and not receiving treatment than Whites (Weisner et al. 2002). Similarly, individuals with low levels of education were more likely to experience an unmet need than those with at least some college education. Furthermore, Grella et al. (2009) found that older individuals were more likely to report an unmet need for substance treatment than younger individuals. These results run counter to previous findings indicating that individuals between the ages of 35 and 54 are the most likely population to seek formal treatment (Weisner et al. 2002; Wu and Ringwalt 2004). Finally, consistent with previous research (George and Tucker 1996; Saunders, Zygowicz, and D'Angelo 2006; Tucker 1995), severity of substance related problems, number of functional impairments and greater social pressure were identified by Grella et al. (2009) as being positively associated with treatment seeking behavior.

BARRIERS TO TREATMENT

Though recovery from substance related disorders without the receipt of formal treatment is well documented, it remains that many individuals, particularly those with more serious problems, might benefit from formal treatment services (Tucker et al. 2009). Despite the demonstrated effectiveness of substance use treatment programs,
researchers have reported that fewer than 25% of individuals with substance related disorders enter into formal treatment (Compton et al. 2007; Heslin et al. 2011; Mojtabai, Olfson, and Mechanic 2002; Tucker and Simpson 2011; Wang et al. 2005). Various forms of treatment are available, however for individuals to benefit from their services they must choose to seek out such treatment. Researchers have recently argued that eliminating barriers to substance treatment should remain a priority in research endeavors (Tucker and Simpson 2011).

*Person Related Barriers*

Barriers to treatment are defined as factors that prevent individuals from seeking formal treatment for substance related problems (Ojeda and Bergstresser 2008; Peterson et al. 2010; Saunders et al. 2006). Barriers to formal substance use treatment fall into three general categories: person related barriers, socioeconomic barriers, and social stigma. According to the research literature, person related barriers are the most commonly cited barriers to substance use treatment (Saunders et al. 2006). Person related barriers include recognition of one’s own problem and attitudes towards seeking help. While the reasons that individuals perceive a need for treatment are unknown, researchers have suggested that the quantity and frequency of use, as well as previous attempts at rehabilitation, are positively correlated with an individual’s perceived need for treatment (Zule and Desmond 2000). In reporting their reasons for treatment avoidance or delay, substance users most commonly indicate that they do not see their substance use as severe enough to warrant treatment or because they feel as if they can handle the problem
on their own (Brener and Von Hippel 2008; Cohen et al. 2007; Cunningham et al. 1993; Kuebler and Hausser 1997; Saunders et al. 2006; Siegal et al. 2002). Researchers have also reported perceived effectiveness of treatment services and negative attitudes toward hospitals and treatment services as determinants of treatment utilization (Appel et al. 2004).

Socioeconomic Related Barriers

Socioeconomic related barriers associated with unmet need for treatment include lack of health insurance or under-insurance, the inability to pay for services, and lack of transportation (Cohen, Feinn, Arias, and Kranzler 2007; Dave and Mukerjee 2011; Marsh, Cao, Guerrero, and Shin 2009; Wells, Sherbourne, Sturm, Young, and Audrey Burnam 2002; Wu and Ringwalt 2005). Despite equivocal results regarding the extent to which cost serves as a treatment barrier, insurance status has consistently been shown to affect treatment utilization (Wells et al. 2002; Wu and Ringwalt 2005). Wu and Ringwalt (2005) examined the National Survey of Drug Use and Health to examine the correlation between the utilization of substance use treatment and lack of health insurance coverage. The results indicated that, of those who lacked insurance, 11% met the criteria for alcohol dependence and 21% met the criteria for illicit drug dependence. Separate studies have examined the utilization of substance use treatment services by type of insurance plan. For example, Wells et al. (2002) reiterated that the likelihood of treatment utilization was directly related to a person’s insurance plan. The authors concluded that the likelihood of receiving treatment was highest for individuals who were covered under Medicaid and
lowest for individuals who were uninsured or covered by Medicare insurance. Further, individuals who were covered under fully managed healthcare plans, rather than partially managed plans, were the most likely group to receive treatment (Wells et al. 2002).

**Stigma**

The research literature on substance use treatment is replete with studies in which individuals with unmet need reported concerns about stigma, privacy, and the label of “alcoholic” or “addict” as primary contributors to treatment avoidance and delay (Cohen et al. 2007; George and Tucker 1996; Jakobsson, Hensing, and Spak 2008; Keyes et al. 2010; Marlatt et al. 1997; Olmsted et al. 2011; Semple, Grant, and Patterson 2005; Tucker, Vuchinich, and Rippens 2004; White, Evans, and Lamb 2009). In a study funded by the World Health Organization, Room and colleagues (2001) reported that substance use ranks near the top of the list of medical conditions in terms of the degree of social disapproval and stigma. Fear of discrimination and rejection based on these types of negative perceptions has been identified in multiple studies as a significant barrier to treatment (Link and Phelan 2006; Saunders et al. 2006; Schober and Annis 1996; White, Evans et al. 2009; Wu et al. 2011). In addition to reducing help seeking behaviors, some researchers contend that social stigma contributes to relapse among individuals who have completed treatment (Schober and Annis 1996).

In 2004, Saunders et al. used a quasi-experimental design comparing individuals who reported needing formal treatment but not making an effort to seek such treatment to those who did make an effort to seek treatment in an effort to better understand barriers to
treatment utilization. Study participants were asked to rate on a scale of zero (not at all) to four (a great deal) the extent to which specific barriers influenced their decisions to seek or avoid formal treatment. Specifically, participants were given a list of person related barriers and treatment related barriers which could impede one’s decision to engage in treatment seeking behaviors. Saunders defined person related barriers as cognitive and emotional factors that affected treatment seeking and treatment related barriers as aspects of the treatment program, such as availability and cost which could affect one’s decision to seek treatment. Both individuals who reported seeking treatment as well as those who did not, strongly endorsed feelings of shame or embarrassment and fear of public perceptions as prevalent barriers to treatment seeking. Both groups highly endorsed the following stigma related barriers: “Feeling embarrassed that you had a drinking problem,” “Feeling embarrassed you needed professional help,” “Worrying that you would be looked down upon by others if you sought professional help.” While this study was unique in that it compared individuals who had received treatment to individuals who reported a need for treatment but did not seek such treatment, the unique effect of social stigma was not examined. In the analysis phase, the above mentioned stigma related barriers were lumped in with other person related barriers, such as a desire to handle the problem on one’s own and not having the motivation for treatment (Saunders et al. 2004).
HEALTH RELATED STIGMA

Goffman’s (1963) seminal work on stigma inspired a flurry of interest in research on stigma and its consequences. Goffman described stigma as “an attribute that is deeply discrediting” which reduces its bearer “from a whole and usual person to a tainted, discounted one” (Goffman 1963: 3). Many of the ideas in Goffman’s work have been expanded upon in an attempt to provide a more complete conceptualization of stigma and to develop measurement tools to advance an understanding of the impact stigma has on the lives of individuals. Jones et al. (1984) provided one such expansion by defining stigma as a ‘mark’ that deviates from social norms and is associated with negative attributes, stereotypes, or undesirable characteristics. According to Jones et al. (1984), stigma encompasses the following six dimensions: 1) the extent to which a stigmatizing mark can be hidden; 2) the usual outcome associated with the mark; 3) the degree to which the mark or attribute strains personal relationships; 4) the degree to which the mark is aesthetically displeasing; 5) the degree to which the bearer is personally responsible for the mark; and, 6) the threat the attribute poses to others.

Over the past 25 years, researchers have seen an influx of studies related to mental health stigma. In 2003, the President’s New Freedom Report on Mental Health identified combating mental health stigma as its number one priority (Hogan 2003). In general, health related stigma refers to the status loss and discrimination triggered by negative attitudes and stereotypes about individuals based on a medical diagnosis or health related condition (Link and Phelan 2001). Researchers within the field of medical sociology have identified multiple ways in which health related stigma contributes to
adverse health outcomes, including employment discrimination, social isolation, denial of health care services, receipt of substandard care, and delayed treatment seeking (Link et al. 1989; Link, Mirotznik, and Cullen 1991; Link et al. 2001; Reidpath et al. 2005; Scambler 2004; Sirey et al. 2001; Struening et al. 2001).

One of the especially vicious, and detrimental, consequences of health related stigma is the feeling of perceived stigma and internalized stigma which is experienced by the members of the stigmatized group (Boyd Ritsher, Otilingam, and Grajales 2003). Perceived stigma refers to beliefs held by members of a stigmatized group concerning the prevalence of stigmatizing attitudes held by the wider population (Link et al. 1989). Internalized stigma refers to feelings of self-devaluation, status loss, shame, and self-hatred (Luoma et al. 2007). According to the experts, feelings of social devaluation and status loss directly affect an individual’s level of distress which can contribute to the following: low levels of self esteem (Corrigan, Larson, and Rusch 2009; Link 1987; Link et al. 1987; Link et al. 2001), decrease in self efficacy (Perlick et al. 2001), increased levels of psychological stress (Wright, Gronfein, and Owens 2000), non-adherence to treatment recommendations (Sirey et al. 2001), and treatment avoidance or delay (Keyes et al. 2010; Link 1987; Link et al. 1987; Link et al. 2001; Reidpath et al. 2005; Semple et al. 2005).

Stigma of Substance Related Disorders

Experts agree that substance users, even those with sustained recovery, face various forms of stigma (Corrigan, Watson, and Miller 2006; Hagerty and Golden 2008;
Link et al. 2004; Martin, Pescosolido, and Tuch 2000). Substance related disorders are among the most highly stigmatized psychiatric disorders and are associated with more social devaluation than any other psychiatric condition (Corrigan, Watson, and Miller 2006; Hagerty and Golden 2008; Martin, Pescosolido, and Tuch 2000). As noted by Jones et al. (1984), the perceived etiology of a condition contributes to the extent to which it elicits stigmatizing attitudes. Despite medicalization of substance use, less than 15% of the U.S. population views substance related problems as medical conditions (Martin et al. 2000). Considering that substance use involves a behavioral component, individuals with substance related problems are especially vulnerable to stigmatization; the idea that substance related problems are rooted in bad choices remains widely accepted (Baumohl et al. 2003). While most mental health conditions can be attributed to such factors as chemical imbalances, stressful circumstances, or genetics, substance related disorders are the only conditions in which individual attributions (i.e., moral decay and bad character) are widely identified as the underlying causes (Martin et al. 2000).

Researchers have documented that individuals with substance related problems are stereotyped as dangerous, immoral, and blameworthy (Cunningham et al. 1993; Link and Cullen 1986; Link et al. 1999; Phalan et al. 2000). Further, the association of substance use with negative attributes is not limited to the lay population. In a survey of mental health professionals, caregivers also assigned high levels of blame to individuals who reported substance related disorders (Kloss and Lisman 2003). Medical professionals consistently report viewing individuals with substance related disorders as a very unrewarding and difficult population to work with (McLaughlin and Long 1996).
Individuals in need of substance use treatment frequently report experiences with perceived and internalized stigma, as well as feelings of social isolation and instances of self-devaluation (Keyes et al. 2010; Luoma et al. 2007; Semple et al. 2005). Concerns about privacy and stigma are also commonly reported among those who consciously forgo formal treatment (Cohen et al. 2007; Cunningham et al. 1993; Jakobsson et al. 2008; King and Tucker 2000; Marlatt et al. 1997; Semple et al. 2005; Tucker and Gladsjo 1993; Tucker and Simpson 2011; Tucker et al. 2004). Researchers have documented that concerns about privacy and stigma often lead individuals to engage in selective disclosure, treatment avoidance, and treatment delay in order to avoid diagnostic labeling (Keyes et al. 2010; Semple et al. 2005).

GENDER SPECIFIC BARRIERS

Despite the fact that women comprise approximately one third of the population who are affected by substance related problems, the majority of individuals who seek treatment are men (Gruzca 2008; Dawson 1996). Gender is a significant factor in help seeking, with women being less likely to utilize formal treatment services than men (Cohen et al. 2007; Dawson 1996; Greenfield et al. 2010; Kaskutas, Weisner, and Caetano 1997; Mojtabai et al. 2002; Schmidt, Tam, and Larson 2007; Schober and Annis 1996). In national samples, it is estimated that men with substance related disorders are 50% more likely to seek formal treatment than women. Further, these findings hold true even after controlling for problem severity (Cohen et al. 2007; Dawson 1996; Schmidt, Tam, and Larson 2007). Finally, researchers have demonstrated that treatment, once
entered, is just as effective for women as it is for men and that females are just as likely
to complete treatment as their male counterparts (Brady and Ashley 2005; Green et al. 2004).

To understand gender disparities in substance use treatment utilization among
men and women, several researchers have argued that the above mentioned barriers affect
women and men differentially with women more likely to face additional gender-specific
barriers (Brady and Ashley 2005; Green 2006). Women with substance related problems
consistently have lower incomes, lower levels of education, and fewer economic
resources than men (Brady and Randall 1999; Brady and Ashley 2005; Copeland 1997;
Wechsberg et al. 2007). Additionally, women are more likely to have familial
responsibilities, such as child care, that interfere with regular treatment (Brady and
Randall 1999; Brady and Ashley 2005; Copeland 1997). Finally, researchers have
speculated that stigma and the fear of labeling is a stronger deterrent for women than for
men (Brady and Ashley 2005; Green 2006); however, a thorough search of the literature
has uncovered no empirical evidence to validate such claims. Previous research has
indicated that stigma as a barrier to treatment does exist among the female population
(Greenfield 2007; Copeland 1997; Finkelstein 1994), but an analysis which compares
men and women in respect to stigma as a barrier has yet to be conducted. This analysis
addresses this gap in research, conducting empirical research to examine if women truly
do experience greater stigma related barriers than men.
CHAPTER THREE
THEORETICAL FRAMEWORK AND HYPOTHESES

DOUBLE STANDARDS, DOUBLE DEVIANCE

The substance use and treatment experiences of male and female substance users are qualitatively different (Mignon et al. 2009). Some researchers argue that the single most important psychosocial factor that distinguishes female from male addicts is the experience of stigma due to the double standard of intoxication (Covington 2000; Mignon et al. 2009). In this context, “double standard” refers to prohibiting specific behaviors for women but condoning, excusing, or rationalizing the same behaviors for men (Thomas 1959). The double standard has been most widely studied in research on sexual behaviors (Gentry 1998; Thomas 1959; Young, Penhollow, and Bailey 2010), but the phenomenon has also been identified in areas such as parenting (Deutsch and Saxon 1998) and substance use (Erickson and Murray 1989; Linnemann 2009).

While all substance use is considered deviant behavior, regardless of gender, the literature on gender roles suggests that substance using women are perceived as especially deviant due to their lack of adherence to socially constructed normative roles (Anderson 2010; Copeland 1997; Nolen-Hoeksema 2004). According to traditional gender roles, women are not expected to engage in substance use to the same extent as men (Anderson 2010). Women who engage in substance use are likely to be perceived as
masculine or as sexually available (Anderson 2010; Parks and Scheidt 2000). Researchers of the gender role perspective place attitudes towards substance use among women within the framework of women’s normative roles as submissive, chaste, nurturing caregivers (Erickson et al. 2000; Fagan 1994). This care-giving role is an essential aspect of the female gender norm. Women who do not live up to socially acceptable standards of behavior are subjected to negative sanctions for their transgressions (Boyd 2004; Schur 1983). Within the gender role perspective, concerns about female substance use stem from the perception that an intoxicated woman is unable to fulfill her primary gender role. Therefore, women with substance use related problems are seen as “doubly deviant” (Heidensohn 2002; Worrall 2002), having transgressed against social codes of behavior and having violated traditional expectations of the roles of wife, mother and family nurturer (Fagan 1994).

In the research literature, there is some speculation that women who avoid formal treatment are more likely than men to report perceived stigma as a barrier to substance use treatment (Mignon et al. 2009). To date, a gender specific examination of stigma as a barrier to substance use treatment among individuals with unmet need is absent from the literature. My first hypothesis is aimed at addressing this gap in the literature:

Hypothesis 1: Women with unmet need will report greater stigma-related barriers than men with unmet need.
Women with children face additional pressures to live up to normative gender role expectations. Whereas non-mothers are seen as double deviant due to the violation of gender role expectations, mothers are triple deviant, violating the norm of moderation, gender role expectations, and the expectations associated with their actual social position as mothers. Mothers who do not meet socially acceptable standards must constantly live in fear that the label of unfit mother will be applied to them (Boyd 2004; Linnemann 2009; Mignon et al. 2009). The label of unfit mother, once applied, can carry serious consequences for women, including criminal charges and forfeiture of their parental rights (Boyd 2004; Linnemann 2009). For women with children, the fear of being labeled as an unfit mother may magnify the amount of stigma they feel, thereby increasing its potency as a barrier to treatment. Taking into account the negative label of unfit mother, I predict the following relationship:

Hypothesis 2: Women with unmet need who are mothers will be more likely to report stigma as a barrier to substance use treatment than non-mothers with unmet need.

Figure 1: Basic Moderation Structure
CHAPTER FOUR
METHODS

DATA

Data for this study were drawn from the public use file of the 2003-2010 National Survey of Drug Use and Health (U.S. Department of Health and Human Services 2004-2011). The NSDUH is funded and compiled by the United States Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Office of Applied Studies (Wechsberg et al. 2007). The NSDUH is conducted on an annual basis to provide national data on the incidence and prevalence of drug, alcohol, and tobacco use by persons 12 years and older within the United States. The NSDUH target population includes residents of households, shelters, dormitories, and civilians residing on military bases and covers topics such as illicit drug use, alcohol use, substance abuse treatment history, and perceived need for treatment (SAMHSA 2010).

The NSDUH survey employs a 50 state sampling design with an independent, multistage area probability sample for each of the 50 states and the District of Columbia. The first stage of selection begins with the construction of a sample frame for each census tract in the population. The second stage of sampling consists of dividing the census tracts into smaller segments. After segments are selected, the third stage of selection consists of selecting households within each segment. Finally, individuals are
selected within households based on the age group composition of the household residents (SAMSHA 2010).

The NSDUH is conducted using face to face interview techniques at the respondent’s home. Prior to 1999, the NSDUH was conducted using paper-and-pencil interviewing. At that time, the survey consisted of a questionnaire booklet completed by an interviewer and a set of individual answer sheets completed by a respondent. All sensitive questions, including those related to substance use and treatment, appeared on the answer sheets which allowed the respondent some privacy in answering sensitive questions. Less sensitive questions were asked aloud by the interviewer and recorded in the questionnaire booklet. Since 1999, interviewers have adopted the use of hand held computers to assist with data collection and interviews. To ensure confidentiality, questions concerning substance use and mental health are completed as a computer assisted interview (CAI) in which information is obtained through computer audio interviewing technology. Less sensitive questions are completed through an in-person CAI in which interviewers verbally ask questions and record respondents’ answers using the handheld computer (SAMHSA 2010). The methodological changes began in 1999 and were fully implemented by 2002. While these changes have ultimately made the survey more accurate, data collected prior to 2002 cannot be accurately compared to the data collected before these changes were implemented. To address this limitation, only data collected after full implementation of methodological changes were used for analysis in this study.

The NSDUH is the most comprehensive and representative data set measuring substance use and treatment in the United States (Mignon et al. 2009), making it an ideal
data set for the current analysis. Previous researchers have successfully used NSDUH data to examine correlates of treatment utilization including: (a) treatment utilization and barriers among prescription opiate users (Wu et al. 2011), (b) perceived need for treatment for alcohol use disorders (Edlund, Booth, and Feldman 2009), (c) insurance status and treatment access (Becker et al. 2008), and (d) the relationship between type of insurance coverage and treatment utilization among substance users (Bouchery et al. 2011). Most closely related to this research, Wu and Ringwalt (2004) examined alcohol dependence and utilization of treatment services among women. Based on an exhaustive review of the literature, an examination of stigma as a barrier to substance use treatment has not been attempted.

Analytic Sample Used In This Study

Data utilized for this study include records pooled across the eight-year time period of 2003-2010. The response rate for these years ranged from 88.8% to 91% with a mean response rate of 90%. For the purpose of this research, the target population included individuals over the age of 18 with unmet need for substance use treatment. The sample was created using the following procedures. For each year, I limited the sample to individuals over the age of 18. Next, data were pooled across the eight year time frame to create one data set containing data from all individuals over the age of 18 (n=1,205,522). Furthermore, I limited the sample to individuals with unmet need for substance use treatment. Treatment defined by the NSDUH includes any facility in which an individual can receive specialty treatment for substance use. Specifically, the NSDUH defines treatment as services received at hospitals (in-patient), rehabilitation centers (in-patient or out-patient), or a mental health center. To be identified as having unmet need
for treatment, an individual must have reported feeling a need for substance use treatment in the past year and reported not making an effort to receive formal treatment (n=1,652). This is consistent with previous findings indicating that the majority of substance users do not feel the need for formal treatment. Seventy-seven individuals did not answer questions regarding their education and 35 failed to report their income. Finally, 172 individuals did not provide a response to the question used to construct the dependent variable.

MEASURES

Dependent Variable

The dependent variable, stigma as a barrier to substance use treatment, was constructed using responses to the following question: “Which of these statements explain why you did not seek the treatment you needed for your use of [substance]?” Respondents were given 14 options from which they could choose one or more reasons for not receiving treatment. Based on previous research (Brown et al. 2010; Eisenberg et al. 2009) a combination of the following three options were used to create the dependent variable for this study: 1) you didn't want others to find out that you needed treatment; 2) you were concerned that getting treatment or counseling might cause your neighbors or community to have a negative opinion of you; 3) you were concerned that getting treatment or counseling might have a negative effect on your job. An affirmative response to one or more of these items will be coded as a report of stigma as a barrier to formal treatment (stigma =1, no stigma=0).
Table 1: Frequency Distribution of Barriers Reported for the Entire Sample and Sub-Samples

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total Sample (n=1,382)</th>
<th>Stigma Plus (n=224)</th>
<th>Stigma Only (n=99)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Proportion</td>
<td>Frequency</td>
</tr>
<tr>
<td><strong>Stigma Related Barriers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment might cause your neighbors or community to have a negative opinion of you</td>
<td>221</td>
<td>0.16</td>
<td>144</td>
</tr>
<tr>
<td>Treatment might have a negative effect on your job</td>
<td>160</td>
<td>0.12</td>
<td>115</td>
</tr>
<tr>
<td>Didn't want others to find out you needed treatment</td>
<td>126</td>
<td>0.09</td>
<td>85</td>
</tr>
<tr>
<td><strong>All Other Barriers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Socioeconomic Barriers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment not covered on health care</td>
<td>75</td>
<td>0.05</td>
<td>19</td>
</tr>
<tr>
<td>Couldn't afford treatment/ no health care coverage</td>
<td>443</td>
<td>0.32</td>
<td>79</td>
</tr>
<tr>
<td>No transportation/ too far away</td>
<td>86</td>
<td>0.06</td>
<td>21</td>
</tr>
<tr>
<td><strong>Person Related Barriers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not ready to stop using</td>
<td>594</td>
<td>0.43</td>
<td>142</td>
</tr>
<tr>
<td>You didn't think you needed treatment at the time</td>
<td>138</td>
<td>0.10</td>
<td>30</td>
</tr>
<tr>
<td>You thought you could handle the problem without treatment or didn't think treatment would help</td>
<td>210</td>
<td>0.15</td>
<td>72</td>
</tr>
<tr>
<td><strong>Miscellaneous Barriers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didn't know where to get treatment</td>
<td>222</td>
<td>0.16</td>
<td>86</td>
</tr>
<tr>
<td>No openings in the programs</td>
<td>25</td>
<td>0.02</td>
<td>5</td>
</tr>
<tr>
<td>You didn't have time</td>
<td>80</td>
<td>0.06</td>
<td>35</td>
</tr>
<tr>
<td>Treatment not found for type wanted</td>
<td>70</td>
<td>0.05</td>
<td>23</td>
</tr>
<tr>
<td>Some other reason</td>
<td>161</td>
<td>0.12</td>
<td>41</td>
</tr>
</tbody>
</table>
Table 1 presents the frequency distribution of all barriers reported for the entire sample as well as the frequency of all barriers reported among both sub-groups in the sample: 1) those who reported only stigma as a barrier (referred to from here on out as the Stigma Only sub-group) and those who reported stigma in addition to other barriers (referred to from here on out as the Stigma Plus sub-group).

**Independent Variables**

The independent variables include gender, parenting status, and motherhood. Gender is the primary independent variable of interest and is based on self report. Females are coded as 1, and males as 0. Parenting status is determined through the questionnaire item which asks the participants to identify the number of children living in the households under the age of 18. Parenthood is defined as having one or more children in the household under the age of 18. An individual who is considered to be a parent is coded as 1; individuals reporting no children in the household are considered to be non-parents and coded as 0. Finally, to test for the effects of motherhood on the experience of stigma as a barrier to substance use treatment, an interaction between gender and parenthood was created. Mothers are coded as 1; non-mothers are coded as 0.

**Covariates**

To accurately test the association of gender and motherhood with stigma as a barrier to substance use treatment, other variables that may be related to stigma are included as controls. Previous researchers have noted that racial and ethnic minorities tend to report higher rates of stigma as a barrier to treatment utilization (Brown et al.
2010; Smith, et al.2010); therefore, race is controlled for in this analysis with White coded as 0 and non-white as 1. Since age has also been shown to have a significant effect on stigma as a barrier to substance use treatment, with older individuals perceiving greater stigma than younger individuals (Keyes et al. 2010); age is controlled for in this analysis using the following coding scheme: (1 = 18-20 years old, 2 = 21-25 years old, 3 = 26-34 years old, 4 = 35 or older). Age is treated as an ordinal variable. Finally, both education and income (Keyes et al. 2010) have been identified as associated with stigma in relation to substance use treatment utilization. To control for education, an ordinal variable is coded at the following three educational levels: less than a high school diploma, completion of a high school diploma/ GED, and at least some college or completion of a college degree.

ANALYTIC PROCEDURE

For this analysis, logistic regression is employed. This statistical method was chosen to account for the binary nature of the dependent variable, stigma as a barrier to substance use treatment. The term “logistic” regression analysis refers to the use of the logit transformation that is applied to the dependent variable. A logit is the natural log of the odds of the dependent variable equaling an observed value. After the dependent variable is transformed into a logit variable, logistic regression analysis uses maximum likelihood estimation (MLE) to achieve estimates of coefficients. MLE seeks to identify estimates of model coefficients that are most likely to generate the pattern of observations found in the data and the smallest possible deviance between the observed and predicted
values. With MLE, multiple iterations are employed until the increase in the log likelihood function has been maximized (Pampel 2000).

Logistic regression has less stringent requirements than ordinary least squares (OLS) regression, which makes it useful for analyzing dichotomous variables. OLS regression consists of true values and requires that the dependent variable meets the assumptions of normality and homoskedasticity, whereas with a dichotomous outcome variable both of these assumptions are violated. The logistic curve is preferable for modeling binary dependent variables because it comes closer to hugging the y=0 and y=1 points on the y axis. Further, the logistic function is bounded by 0 and 1, whereas OLS regression may predict values above 1 and below 0. Because of these bounds in the logistic curve, it is imperative that the dependent variable be coded as 0 and 1 which represent failure and success, respectively. For this analysis, 0 indicates that stigma was not reported as the reason for not seeking substance use treatment while 1 indicates that stigma was reported as the reason for not seeking substance use treatment.

Analytic Models

Using SPSS software (ver. 16), this study employs regression techniques. In the first model, stigma (stigma=1) is regressed on gender (female=1) to determine if a significant relationship exists between the independent variable and the dependent variable:

\[
Stigma = \alpha + \beta_1 \text{Gender} + \epsilon.
\]
In the second, stigma (stigma=1) is regressed on gender (female=1). Covariates are included to determine if a relationship exists between the independent and dependent variable after controlling for these factors:

\[ Stigma = \alpha + \beta_1 \text{Gender} + \text{Covariates} + \varepsilon. \]

Significance in the independent variable in models one and two will provide support for hypothesis one which states that women with unmet need report greater stigma-related barriers than men.

In the third model, stigma (stigma=1) is regressed on gender (female =1), parenting status (parent =1), and the interaction term, motherhood (mothers=1), along with all statistically significant covariates:

\[ Stigma = \alpha + \beta_1 \text{Gender} + \beta_2 \text{Parenting Status} + \beta_3 \text{Motherhood} + \text{Controls} + \varepsilon. \]

Significant results for the interaction term of motherhood will support hypothesis two, which states that motherhood moderates the relationship between gender and stigma as a barrier to substance use treatment.
CHAPTER FIVE

RESULTS

DESCRIPTIVE RESULTS

Table 2 contains descriptive statistics for the final analytic sample (n= 1,382). Approximately 42% of individuals with unmet need were female and 40% of all individuals in the analytic sample were parents. Furthermore, 20% of all individuals in the sample were mothers (female*parent), and 80% were non-mothers which includes both women without children and men. The sample was mainly comprised of individuals who self identified as White (61%) and individuals reporting incomes below $20,000 per year. Educational attainment was distributed fairly equal across the analytic sample with 30% reporting having less than a high school education and 35% reporting a high school education and 30% reporting at least some college education. Finally, the majority of individuals reporting an unmet need for treatment fell within the 21-25 age group. Furthermore, 8% were between the ages of 18 and 20, 9% were between the ages of 36 and 34, and 6% were over the age of 35.

Table 2 also contains frequency distribution for stigma related barriers. As shown, 323 individuals reported stigma related barriers as their reason for not seeking the treatment they needed. Individuals were able to choose more than one barrier to treatment and some reported more than one stigma related barrier. A total of 543 related barriers were endorsed by respondents. Of those reporting stigma, 151 reported concern over the
effect treatment could have on their job, 106 reported they did not want others to find out they needed treatment, and 196 reported being concerned that seeking treatment would cause their neighbors or community to have a negative opinion of them.

Table 2: Descriptive Statistics for All Variables in Sample, N=1,382

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stigma</td>
<td>323</td>
<td>0.33</td>
</tr>
<tr>
<td>Concern treatment might have a negative effect on job</td>
<td>151</td>
<td>0.11</td>
</tr>
<tr>
<td>Didn't want others to find out</td>
<td>106</td>
<td>0.08</td>
</tr>
<tr>
<td>Concern that treatment might cause neighbors or community to have a negative opinion</td>
<td>196</td>
<td>0.14</td>
</tr>
</tbody>
</table>

**Independent Variables**

- **Gender**
  - Female: 586 (0.42)
  - Male: 796 (0.58)

- **Parenting status**
  - Parent: 559 (0.40)
  - Non-Parent: 823 (0.60)

- **Motherhood**
  - Mother: 270 (0.20)
  - Non-Mother: 1,112 (0.80)

**Covariates**

- **Race**
  - White: 842 (0.61)
  - Other: 540 (0.39)

- **Education**
  - Less Than HS: 415 (0.30)
  - H.S/GED: 483 (0.35)
  - Some College: 484 (0.35)

- **Age Categories**
  - 18-20: 294 (0.21)
  - 21-25: 548 (0.40)
  - 26-34: 220 (0.16)
  - 35+: 320 (0.23)

- **Income**
  - Under $20,000: 1008 (0.73)
  - Over $20,000: 374 (0.27)
Table 3 presents descriptive statistics for mothers (female*parent) and non-mothers in the sample. Among females in the analytic sample, 46% (n=270) were mothers (female*parent), and 54% (n=316) were non-mothers. Among mothers, 63% self identified as Non-white and 81% reported incomes below $20,000 per year. Educational attainment was distributed fairly equal across mothers within the sample with 31% reporting having less than a high school education and 36% reporting a high school education and 32% reporting at least some college education. Finally, the majority (13%) of mothers reporting an unmet need for treatment fell within the 21-25 age group. Furthermore, 8% were between the ages of 18 and 20, 9% were between the ages of 36 and 34, and 6% were over the age of 35.
Among women who did not report children under the age of 18 in the household, 29% self identified as Non-white and 72% reported incomes below $20,000 per year. Educational attainment was distributed fairly equal across mothers within the sample with 21% reporting having less than a high school education and 31% reporting a high school education and 48% reporting at least some college education. Finally, the majority (42%) of mothers reporting an unmet need for treatment fell within the 21-25 age group. Furthermore, 30% were between the ages of 18 and 20, 9% were between the ages of 36 and 34, and 20% were over the age of 35.

BIVARIATE RESULTS

Because individuals were allowed to choose more than one barrier to formal treatment, precaution was taken to ensure that the Stigma Only sub-group was not statistically different than the Stigma Plus sub-group. Descriptive statistics for the sub-groups as well as results from the independent-samples t-test can be found in Table 4. The independent-samples t-test compares individuals who reported only stigma related variables as barriers to treatment (Stigma Only, n=99) with individuals who reported stigma in addition to other barriers (Stigma Plus, n=224). As shown, the only statistically significant differences between the two groups were related to race and education. Results indicated that there were no statistically significant differences between the two groups with regards to the independent variables of interest; therefore, multivariate models were run in which the Stigma Only and Stigma Plus categories were combined in the regression models.
Table 4: Descriptive Statistics and T-Test Results for Stigma Only and Stigma Plus Sub-Samples

<table>
<thead>
<tr>
<th>Variables</th>
<th>Stigma Only (n=99)</th>
<th>Stigma Plus (n=224)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Proportion</td>
<td>Frequency</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>46</td>
<td>0.46</td>
<td>112</td>
</tr>
<tr>
<td>Male</td>
<td>53</td>
<td>0.54</td>
<td>112</td>
</tr>
<tr>
<td>Parenting status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents</td>
<td>41</td>
<td>0.41</td>
<td>93</td>
</tr>
<tr>
<td>Non-Parents</td>
<td>58</td>
<td>0.59</td>
<td>131</td>
</tr>
<tr>
<td>Motherhood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers</td>
<td>22</td>
<td>0.22</td>
<td>53</td>
</tr>
<tr>
<td>Non-Mothers</td>
<td>77</td>
<td>0.78</td>
<td>171</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>62</td>
<td>0.63</td>
<td>167</td>
</tr>
<tr>
<td>Other</td>
<td>37</td>
<td>0.37</td>
<td>57</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Than HS</td>
<td>25</td>
<td>0.25</td>
<td>37</td>
</tr>
<tr>
<td>H.S/GED</td>
<td>33</td>
<td>0.33</td>
<td>66</td>
</tr>
<tr>
<td>Some College</td>
<td>41</td>
<td>0.41</td>
<td>121</td>
</tr>
<tr>
<td>Age Categories</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-20</td>
<td>22</td>
<td>0.22</td>
<td>44</td>
</tr>
<tr>
<td>21-25</td>
<td>36</td>
<td>0.36</td>
<td>97</td>
</tr>
<tr>
<td>26-34</td>
<td>24</td>
<td>0.24</td>
<td>36</td>
</tr>
<tr>
<td>35+</td>
<td>17</td>
<td>0.17</td>
<td>47</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $20,000</td>
<td>64</td>
<td>0.65</td>
<td>152</td>
</tr>
<tr>
<td>Over $20,000</td>
<td>35</td>
<td>0.35</td>
<td>72</td>
</tr>
</tbody>
</table>

*p≤ .05  **p≤ .01  ***p≤ .001

LOGISTIC REGRESSION RESULTS

Odds ratios and 95% confidence intervals for all three logistic regression models predicting stigma as a barrier to formal treatment can be seen in Table 5, with tests of model fit presented at the bottom of the table. To test hypothesis 1, that women with unmet need will report greater stigma related barriers than men, Model 1 examined the relationship between gender and stigma as a barrier to formal treatment. Model 1 indicated that females were 41% more likely than their male counterparts to report stigma
as a barrier to formal treatment. The model as a whole explained approximately 1% (Pseudo R squared) of the variation in reported stigma.

### Table 5: Odds Ratios and 95% Confidence Intervals from Logistic Regression Coefficients Predicting Stigma as a Barrier to Substance Use Treatment (N=1,382)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds Ratios</td>
<td>95% CI</td>
<td>Odds Ratios</td>
<td>95% CI</td>
<td>Odds Ratios</td>
<td>95% CI</td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (1)</td>
<td>1.41** (.128)</td>
<td>1.10-1.80</td>
<td>1.28† (.133)</td>
<td>0.99-1.66</td>
<td>1.18 (0.175)</td>
<td>0.84-1.67</td>
</tr>
<tr>
<td>Parenting status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent (1)</td>
<td>1.18 (.189)</td>
<td></td>
<td>1.13 (.268)</td>
<td></td>
<td>1.13</td>
<td>0.67-1.90</td>
</tr>
<tr>
<td>Motherhood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother (1)</td>
<td>1.13 (.268)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $20,000 (1)</td>
<td>.753† (.155)</td>
<td>0.56-1.02</td>
<td>.753 (.155)</td>
<td>0.56-1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White (1)</td>
<td>1.54** (.141)</td>
<td>1.17-2.03</td>
<td>1.58** (.142)</td>
<td>1.19-2.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (Ord.)</td>
<td>1.60*** (.087)</td>
<td>1.35-1.90</td>
<td>1.64*** (.088)</td>
<td>1.38-1.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (Ord.)</td>
<td>.911 (.066)</td>
<td>0.80-1.04</td>
<td>.90 (.067)</td>
<td>0.79-1.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goodness of Fit Statistics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo R Square</td>
<td>0.01</td>
<td></td>
<td>.07</td>
<td></td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Model $\chi^2$</td>
<td>7.27**</td>
<td></td>
<td>63.36***</td>
<td></td>
<td>66.34***</td>
<td></td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>1</td>
<td></td>
<td>5</td>
<td></td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

†p < .10; *p < .05; **p < .01; ***p < .001.

Note: Standard errors in parenthesis

The control variables of income, race and age were added to Model 2. As shown in Table 5, Model 2 provided a better fit ($\chi^2=63.36***$), explaining 7% (Pseudo R squared) of variation in reporting stigma as a barrier to formal treatment. The effect of gender on the prediction of stigma was reduced, from the .05 level to the .10 level, by the inclusion of covariates into the model. As shown in Table 5, only two covariates made a statistically significant contribution to the model. The strongest predictor of reporting stigma was education, with an odds ratio of 1.60. This finding indicated that as
respondents’ level of education increased, so too did their likelihood of reporting stigma as a barrier to formal treatment. Further, for every additional level of education the odds of reporting stigma as a barrier to formal treatment increased by 60%. Finally, race showed a statistically significant positive relationship with stigma as a barrier to formal treatment with Whites being 1.5 times more likely than Non-whites to report stigma as a barrier to treatment.

Finally, Model 3 addressed hypothesis 2, that mothers will report more stigma related barriers than non-mothers. The full model included all independent variables (gender, parenting status, and motherhood) in addition to all covariates. The full model explained 7% of variation in reported stigma (Pseudo R squared). As shown in Table 5, education and race remained the strongest predictors and no correlations were found among any of the independent variables and stigma as a barrier to formal treatment. Once again, the Chi-square statistic ($\chi^2=66.34***$) indicated that the inclusion of motherhood into the model did increase its predictive power; however neither gender nor motherhood showed significance in model 3.
CHAPTER SIX
DISCUSSION, LIMITATIONS, AND CONCLUSION

DISCUSSION

In the 1980s, Link and colleagues developed a “modified” labeling theory to provide an explanation for the way in which stigma reduces the life chances of individuals with mental illnesses (Link 1982; Link 1987; Link et al. 1989). According to Link and colleagues, individuals internalize societal conceptions of mental illness through socialization. At a very young age, individuals develop an internalized view of the world including conceptions of what it means to be a person with a stigmatized medical condition, such as substance related disorders. The idea that persons with mental illnesses are generally devalued is a significant element in these cultural conceptions. Through socialization individuals develop ideas about whether most people will reject or devalue persons labeled as mentally ill. Culturally induced stereotypes about mental illness are of little consequence until an individual develops a mental illness, at which point they become personally relevant (Link 1982; Link 1987; Link et al. 1989).

Based on modified labeling theory, a person does not have to directly or personally experience stigma, discrimination, or social exclusion to suffer negative health consequences as a result of a stigmatized identity; rather, internalized stigma results from the expectation and fear of social rejection which stems from this internalization of societal expectations (Link et al. 1989; Link et al. 1997). The internalized stigma an individual experiences from realizing that negative stereotypes are personally relevant is
enough to have a negative effect on one’s self-esteem, self-efficacy, and subjective quality of life. As stated in modified labeling theory, secrecy, treatment avoidance, and treatment delay are defensive mechanisms employed as a result of the expectation of discrimination and social rejection. According to this theory, individuals with substance related disorders may avoid formal treatment to avoid the diagnostic label which solidifies their status as a member of a stigmatized population (Link 1982; Link 1987; Link et al. 1989).

Based on the tenets of modified labeling theory, and the fact that women face stricter social norms concerning substance use (Anderson 2010; Copeland 1997; Nolen-Hoeksema 2004), this paper tested the hypothesis that female substance users would report more stigma related barriers to formal treatment than male substance users. Female substance users may suffer from a double standard of intoxication due to the violation of both norms that define appropriate use of intoxicating substances, as well as traditional gender role expectations. This double deviance was suspected to increase the strength of the internalized stigma experienced by female substance users and manifest itself in stigma acting as a stronger barrier to treatment for women then for men. While it was argued that women in general experience a double stigmatization due to role expectations, it was further hypothesized that mothers experience a triple stigmatization. Where women in general are seen as doubly deviant due to their possible role as mother, mothers are seen as triple deviants because they are violating the expectations of a role they currently occupy. The goal of this analysis was to examine the effect of female gender on stigma as a barrier to substance treatment and the extent to which this effect of was moderated by motherhood.
As outlined previously, there were two primary hypotheses tested within the analysis: 1) females with unmet need will report more stigma related barriers than their male counterparts, and 2) mothers will report greater stigma related barriers than non-mothers. Model 1 provides support for hypothesis one, that females with unmet need report more stigma related barrier than do men. When gender is the only predictor in the model, results indicate that women do feel doubly deviant, being more concerned about stigma related barriers than their male counterparts. However when covariates are added to the model, this effect diminishes. Furthermore, while parenting status was slightly correlated with stigma as a barrier to substance treatment, adding the experience of motherhood to the model showed no effect. Therefore, the results lent some support to the first hypothesis and no support for hypothesis two.

The first hypothesis is best supported by model 1 which simply compares males and females. This model, considering gender alone, highlighted a significant relationship between gender and the experience of stigma as a barrier to substance treatment. This suggests that female substance users do perceive stigma as a barrier more than their male counterparts. These findings provide support for the experience of double deviance among female users; however, subsequent models produced unexpected and informative findings. While gender remains correlated with stigma as a barrier to treatment in Model 2, the effect of gender is clearly outweighed by race and educational attainment. What is interesting about these findings is that there appears to be a strong positive relationship between stigma as a barrier to substance treatment and race and education. These findings suggest that individuals with higher social statuses (Whites and those with higher levels of education) are significantly more likely to report stigma as a barrier to substance
treatment. One way to interpret these findings is that individuals with higher social status may be more concerned about possible status loss through treatment seeking than those with lower status. Consequently, treatment avoidance based on stigma related barriers may vary based on the amount of social status a person feels he or she has to lose (Ojeda and Bergstresser 2008). My findings suggest that this is an important aspect of treatment utilization and the experience of stigma which deserves further study. While significant for these populations, as indicated above, stigma was not significant for mothers when controlling for these other factors.

One way to interpret the lack of significant results in relation to motherhood is to understand the motivational role motherhood may play in the initiation of substance treatment. Motherhood may, in fact, lead to the experience of triple stigmatization but not increase the effect this stigmatization has on treatment utilization. The current study would seem to support findings in previous research which indicates that fetal or child well-being is a strong motivator for treatment seeking among women who are pregnant or who have children and that most mothers ultimately enter into substance treatment for this reason (Jessup 2003; Clark 2001). In general, the socioeconomic, personal, and stigma related barriers are outweighed by a concern for the welfare of the child.

Furthermore, previous research indicates that, some pregnant women and new mothers are afraid that their substance use will be discovered and they will lose parental rights (Jessup et al. 2003) Treatment, then, is seen as a way to retain their socially acceptable roles as mothers (Jessup et al. 2003). In cases where substance use has been discovered, women enter into court ordered treatment even if they do not feel they need or desire substance treatment, in order to regain custody of their children and return to
their socially accepted roles as mothers (Clark 2001; Jessup et al. 2003). In fact, the move towards gender specific treatment facilities that allow women to retain custody of their children has been shown to enhance treatment retention (Greenfield et al. 2007).

That mothers may be motivated to seek treatment services does not negate the existence of a triple stigma for this population. Instead, the lack of significant findings in this study may only be an artifact of the impact that motherhood has in motivating women to seek substance treatment; the desire to keep one’s children, or to become a better parent, may simply outweigh the effects of social stigma. Furthermore, the small number of mothers in my sample could be due to the fact that mothers are more likely to seek treatment than non-mothers because of this strong motivation. In order to truly investigate the existence of a triple stigma, a sample which includes both individuals who did and did not receive treatment would be necessary. Furthermore, research concerning public attitudes towards mothers who are substance users, compared to attitudes toward non-mothers would be necessary to clearly substantiate the existence of a triple stigma. These are both research questions I plan to address in future studies.

LIMITATIONS

The majority of this study’s limitations stem from its restrictions in sample selection. Due to the nature of the NSDUH survey design only individuals who reported needing treatment and not making an effort to receive such treatment were asked questions concerning barriers to treatment. Expanding the sample to include individuals who ultimately did seek treatment could better assess the extent to which stigma affects
decisions on the type of treatment one chooses and its effects on treatment delay behaviors. Furthermore, questions concerning motivating factors behind treatment seeking could better disentangle the relationship between motherhood, stigma and treatment utilization.

A wide variety of self-help organizations designed to address problems of substance use are available to individuals in addition to formal treatment options. Participation in such organizations serves as an affordable alternative as well as a valuable addition to formal treatment services. Self-help organizations are based on a mutual help model and stress the importance of total abstinence from substance use. Documented benefits of self-help organizations include enhanced self-efficacy, increased social support, reduced depression and a greater likelihood of abstinence both at one year and five year follow-ups (Weisner et al. 2003; Hubbard et al. 2003). Individuals who participate in self-help organizations have been shown to suffer from greater levels of functional impairment, higher levels of problem severity, more problems in their personal relationships, and lower incomes than natural remitters (Tucker 1995; Tucker et al. 2004; Kessler et al. 1997; Duffy et al. 2006).

To date, the most widely available and thoroughly researched self-help organization is the 12-step program of Alcoholics Anonymous (Humphreys et al. 2004). Participation in Alcoholics Anonymous and related 12-step groups is highly correlated with the use of formal treatment services, with as many as 75% of individuals who receive formal treatment also reporting participation in self-help groups (Cohen et al. 2007). This overlap is not surprising considering that many formal treatment facilities incorporate 12-step recovery into their treatment models and direct clients to 12-step
groups for post treatment care (Magura 2007). Due to the construction of the questionnaire, the present study was not able to tease out individuals who relied on self-help organizations rather than formal substance treatment and thus was unable to examine the extent to which the stigma related barriers informed their treatment decision.

Furthermore, researchers have demonstrated that participation in formal treatment or mutual help groups is not necessarily required for recovery (Stall and Bernacki 1986; Klingemann et al. 2001; King and Tucker 2000; Tucker 2001; Poel 2006; Dawson 1996). New lines of inquiry in the research literature include natural recovery and remission from substance related disorders without the use of formal treatment services (see Carballo et al. 2007 and Sobell, Ellingstad, and Sobell 2000 for a review). Investigators have reported between 66-75% of problem drinkers resolve problem use without formalized substance use treatment (Klingemann et al. 2001; Sobell et al. 1996).

According to the experts, individuals who remit without formal treatment are more likely to have problems of lesser severity, be in good health, and believe that they can handle the problem on their own (Kuebler, Hausser, and Gervasoni 2000; Cunningham et al. 1993; Dawson 1996; Sobell et al. 1996). Individuals who abstain without formal treatment are more likely to believe that they can solve the problem on their own, that their drinking is not serious enough to warrant formal treatment, or to believe that treatment may be ineffective, and have supportive social networks (King and Tucker 2000). This analysis only included individuals who reported feeling a need for formal treatment, and therefore, did not include individuals who preferred to attempt remission on their own. Modified labeling theory would suggest that concerns about stigma and discrimination are strong among recovering substance users who decide to
forgo self-help groups and formal treatment options (Link et al. 87; Link 1987; Link et al. 1989; Link and Phelan 2001, 2006). Future research should examine the extent to which concerns over stigma affect the decision to attempt natural recovery.

CONCLUSIONS

Although effective treatment for substance related disorders are widely available, adults with need for their services underutilize them (SAMHSA 2011; Cohen et al. 2007). Understanding barriers to treatment utilization is necessary in developing accessible treatment opportunities. Any examination of treatment utilization and the mechanisms motivating treatment avoidance and delay must begin with an acknowledgement that substance use and treatment is a complex social problem. Decisions to seek treatment are influenced by a variety of factors including social stigma, economic status, clinical settings, familial relationships, and personal dispositions. The extent to which these factors individually inform the decision to seek, avoid, or delay treatment is not easily untangled. While much research has added to the understanding of treatment seeking behaviors, the reasons why these behaviors vary by gender are not completely understood. Future researchers should continue to examine the effect social stigma has on treatment utilization and develop intervention strategies targeted at reducing health related stigma overall.
REFERENCES


Brady, Thomas M. and Olivia Silber Ashley. 2005. "Women in Substance Abuse Treatment: Results From the Alcohol and Drug Services Study (ADSS)." Substance Abuse and Mental Health Services Administration, Office of Applied Studies, Rockville, MD.


(SAMHSA), Substance Abuse and Mental Health Services Administration. 2010. "National Survey On Drug Use and Health: Codebook." Rockville, MD: Substance Abuse and Mental Health Services Administration.

(SAMHSA)Substance Abuse and Mental Health Services Administration. 2011 "Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings NSDUH Series H-41, HHS Publication No. (SMA)." Rockville, MD: Substance Abuse and Mental Health Services Administration.


APPENDIX

IRB Approval Form
Form 4: IRB Approval Form
Identification and Certification of Research
Projects Involving Human Subjects

UAB's Institutional Review Boards for Human Use (IRBs) have an approved Federalwide Assurance with the Office for Human Research Protections (OHRP). The Assurance number is FWX0005990 and it expires on August 29, 2016. The UAB IRBs are also in compliance with 21 CFR Parts 50 and 56.

Principal Investigator: STRINGER, KRISTI
Co-Investigator(s):
Protocol Number: E111130004
Protocol Title: Drug and Alcohol Treatment Utilization: A Gender Focused Analysis of Stigma as a Treatment Barrier

The above project was reviewed on 1/29/11. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services. This project qualifies as an exemption as defined in 45CFR46.101; paragraph 44.

This project received EXEMPT review.
IRB Approval Date: 1/29/11
Date IRB Approval Issued: 1/29/11

Nashleigh Davis, M.A.
Vice Chair of the Institutional Review Board for Human Use (IRB)

Investigators please note:
IRB approval is given for one year unless otherwise noted. For projects subject to annual review research activities may not continue past the one year anniversary of the IRB approval date.

Any modifications to the study methodology, protocol and/or consent form must be submitted for review and approval to the IRB prior to implementation.

Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.

470 Administration Building
701 20th Street South
205-934-3789
Fax 205-934-1501
info@uab.edu

The University of
Alabama at Birmingham
Mailbox Address:
A9-400
1500 3RD AVE S
BIRMINGHAM, AL 35294-0104