ABSTRACT

Title of Dissertation: EXPLORING PREDICTORS OF DRUG USE DISORDERS AND DRUG TREATMENT SERVICES IN A NATIONAL SAMPLE OF WOMEN

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Social Work

A representative sample of (n=20,447) women from the United States ages 18 years and older was used from the National Institute on Alcohol and Alcohol Abuse (NIAAA) National Epidemiologic Survey of Alcohol and Related Conditions III (NESARC-III), 2013-2015. Descriptive analyses, multiple logistic regressions and General Linear Models (GLM) were used to 1) to determine the prevalence of Drug Use Disorders (DUD) and its associated predictors in a national sample of women and 2) to explore the relationships between selected types and number of treatment services for DUDs and predisposing factors, enabling resources and need factors. Models were developed to test the extent to which multiple independent variables, independently and/or jointly were associated with selected types and number of drug treatment services. The findings of this study revealed that factors that were considered separately presented different profiles dependent upon the type of treatment services. Within specific services, significant relationships found in the analysis stratified by the type of factor remained

after considering the joint associations of all three types of factors. The study's findings have implications for further research and policy.

EXPLORING PREDICTORS OF DRUG USE DISORDERS AND DRUG TREATMENT SERVICES IN A NATIONAL SAMPLE OF WOMEN

by

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Chapter 1: Introduction

Substance Use is a significant public health problem affecting an estimated 16.6 million adults in the United States of America (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). The Diagnostic and Statistical Manual of Mental Disorders 5 (DSM 5) defines a substance use disorder as "a cluster of cognitive, behavioral and psychological symptoms indicating that the individual continues using the substance despite significant substance-related problems" (American Psychiatric Association [APA], 2013, p. 493). In 2012, there were 8292 treatment episodes of pregnant women with a primary opioid disorder in the United States of America (Angelotta, Weiss, Angelotta, & Friedman, 2016). The Centers for Disease Control and Prevention (CDC) highlighted the issue of misuse of psychotherapeutic drugs becoming more prevalent in the past 20 years that it is now described as an epidemic (Ford & Rigg, 2014). According to the 2014 National Survey on Drug Use and Health (NSDUH), 21.5 million (8.1%) of Americans age 12 or older had a substance use disorder (SAMHSA, 2014). Specifically, 1 out of 3 had an illicit drug use disorder, 4 out of 5 reported alcohol use disorder, and 1 out of 8 reported both an alcohol and an illicit drug use disorder (SAMHSA, 2014).

Reasons for problematic substance use vary with various community, family and individual-level risk factors contributing to the severity of use (Trinh, Agenor, Austin, & Jackson, 2017; Vasilenko, Evans-Polce, & Lanza, 2017). These factors can occur in any socioeconomic status or racial group but it is more complex when combined with comorbid psychological disorders, interpersonal

violence, poverty, inadequate nutrition, poor health care and stressful life experiences that may be disproportionately distributed among various populations (American Society of Addiction Medicine, 2011; National Institutes of Health [NIH], 2010). The effects of problematic drug use impacts an individual's physical and mental functioning (SAMHSA, 2013a) and include increased spread of communicable diseases, loss of productivity, reduced quality of life and abuse and neglect of children (US Department of Health and Human Services [HHS], 2016; World Health Organization [WHO], 2014).

There are a number of factors responsible for the prevalence of Substance Use and utilization of drug treatment services for women compared to men but the relationship between predictors of drug treatment utilization and previous life experiences have not been fully explored (Redman, 2010) as well as the intersection of gender, race and social support (Lee & Boeri, 2017). Hence, it is imperative that research focus on within group differences among women as it relates to utilization of professional and informal drug treatment services that can lead to gender specific interventions. Therefore, this study explored the association between selected sociodemographic characteristics (age, income, race, marital status, and geographical location), health insurance, access to health services, waiting time, extent of social support, need factors and utilization of different types of drug treatment services among a national sample of women with substance use disorders.

Statement of the Problem

An historical account of treatment utilization highlight that women are underrepresented among individuals entering treatment for alcohol abuse, dependency and other related issues (Dawson, 1996). Data collected in the 1980s showed that the male to female ratio of problematic alcohol use was 5:1 but surveys conducted in the 2000s highlight a narrowing of the gap to approximately 3:1 (Hasin, Stinson, Ogbrn, & Grant, 2007; WHO, 2014). Data collected in the past 5-7 years indicate that the number of women requiring substance use treatment is expected to increase with more individuals presenting with drug use problems. For example, between 2013-2014, 15. 8 million women ages 18 years and over, used illicit drugs with the NSDUH reporting that 5.6 million females met the diagnostic criteria for an alcohol related drug use disorder in 2014 (Center for Behavioral Health Statistics and Quality, 2015).

A significant body of literature has accumulated over a number of years that provides evidence of the growing disparity among access, engagement and adherence to drug use treatment among women in the United States, with women having lower completion rates compared to men (United Nations, 2004). Although, men and women both present with problematic substance use, research highlights that there is a large proportion of women compared to men who experience significant barriers to treatment access, engagement and adherence (Nolen-Hoeksema, 2004). SAMHSA (2011) investigated the most common reasons for not receiving treatment reported by persons 12 years and older; from the study, 41.8% of individuals reported lack of health care coverage and inability

to afford care, 30.7% reported not ready to quit using the substance, 14.6% reported fear of negative opinions by neighbors and other community members, 12.4% reported negative effects of seeking treatment on employment, 12.1% reported not knowing where to seek treatment and 9.6% reported that they could handle their use without treatment (SAMHSA, 2011). Given the multitude of barriers accompanying utilization of substance use treatment services, it is critical to find the most effective and efficient combination of treatment services.

Specifically for women, various structural and social barriers impact utilization of substance use treatment services, potentially limiting the extent to which services and support networks provide assistance (Hecksher & Hesse, 2009). The literature highlights that women with substance use problems are not homogenous and that there are important within group differences by age, ethnicity, sexual orientation, culture, religious orientation, and parental status that influence treatment utilization (Grella, 2007; Parthasarathy, Mertens, Moore, & Weisner, 2003). These studies provide evidence of the significant societal and individual determinants of treatment utilization for substance use.

Prevalence of the Problem

The prevalence of problematic drug use among the US population continues to increase with approximately over 2 million Americans being diagnosed with substance use disorders from prescription opioids and almost 500,000 from heroin (SAMHSA, 2013). However, there is a significant substance use treatment gap for those needing treatment (SAMHSA, 2002) with statistics indicating that in 2012, an estimated 23.1 million people aged 12 years or older required substance use treatment for an illicit drug or alcohol use problem (SAMHSA, 2013). However, only a small percentage of

individuals who have a substance use disorder (alcohol/drugs) actually receive treatment (Otiniano Verissimo & Grella, 2017; Stone, 2015). The NSDUH reported that in 2015 only 10.8% of individuals who met the criteria for needing SUD treatment actually received treatment at a specialty addiction treatment facility (Alderks, 2017). These statistics indicate that the number of people who require treatment is disproportionate to the number of individuals that are accessing treatment.

Addiction is a growing problem for women in the United States of America as overdoses related to mortality rates among women increased between 1999 and 2014 compared to overdose deaths in men during the same time period (Centers for Disease Control and Prevention, 2016). Data from the 2004 National Survey on Drug Use and Health (NSDUH) highlighted that 6.2 % of females over the age of 12 years old were classified with substance dependence or abuse but only 0.9% of females received treatment in that year (SAMHSA, 2005). More recent data from the 2015 NSDUH indicated that 4 % of females age 12 and older misused prescription pain relievers in the last year (SAMHSA, 2017). Within the past few years, there has been an increase in the number of SUD diagnoses yet the majority of individuals with SUDs have a low utilization of drug treatment services (NIH, 2010; SAMHSA, 2017). To highlight the scope of the problem, data from SAMHSA (2017) indicate that out of 18.2 million people that required substance use treatment, only 5.7 % had a perceived need for treatment compared to 94.3% who felt that they did not require treatment. The study of drug treatment utilization provides a multi dimensional approach regarding factors that affect women's use of informal and professional drug treatment services.

The increasing rates of drug use disorders and low treatment utilization among women are alarming given that research shows that those who engage in substance use experience greater negative consequences such as high risk behaviors, co-occurring mental health issues, family conflict, contact with legal system, and health related issues (Hecksher & Hesse, 2009).

Purpose of the Study

Findings from research highlight the need to understand the unique factors and treatment considerations for different racial/ethnic groups of women with substance use problems (Nolen-Hoeksema, 2004). Based on research studies conducted over the past few years, significant findings conclude that there is increased knowledge on the biological, social, past experiences, and demographic factors that affect the diagnosis of an SUD in women but limited information exists on the direct influences of each specific aspect relating to treatment utilization and help seeking behaviors among different groups of women (US Department of Health and Human Services, 2017).

Examining the factors associated with drug treatment services utilization cannot be accomplished without examining the theoretical, multi-dimensional approach that takes into account the personal, interpersonal and structural factors that impact utilization. This study examined population characteristics (predisposing, enabling, need) to determine which factors predicted utilization of professional and informal substance use treatment services among women as it is important to determine how to best meet the needs of women of all racial/ethnic groups to ensure successful health and mental health outcomes.

Additionally, the majority of studies about substance use utilize predominantly male clinic based samples (Brady, Back, & Greenfield, 2009) and what is known about addiction and recovery is dominated by research using men (Mulvey et al., 2004) with few research studies focusing on gender differences in treatment seeking (Walter-Moss & Mc Caul, 2006). The gender differences in substance use have brought increased attention to the biology of substance abuse, epidemiology of substance use disorders, etiologic considerations and psychiatric comorbidity (Brady & Randall, 1999). Therefore, it is imperative to examine the predictors of utilizing selected types of drug treatment services that may explain the multiple treatment attempts. As a result the following questions will be addressed:

Research Question 1: What is the 12-month prevalence and predictors of DUDs among the women in the sample?

Research Question 2: What are the predisposing factors (age, race, marital status, education, geographical location and income) associated with selected types and number of drug treatment services?

Research Question 3: What are the enabling resources (health insurance, access to health services, waiting time, extent of social support) and selected types and number of drug treatment services?

Research Question 4: What are the need factors associated with selected types and number of drug treatment services?

Research Question 5: What is the joint association between the selected predisposing factors, enabling resources and need factors with selected types and number of drug treatment services?

Significance of the Study to Social Work

A study determining the factors of multiple treatment attempts for substance use treatment is important for several reasons. A strength of this study is its exclusive focus on women as historically the majority of participants included in addiction research have been men. This study is significant because women who use alcohol and other substances face a multitude of challenges to accessing and adhering to substance use treatment. The goals of this present research are to determine the prevalence of Drug Use Disorders (DUDs) and their associated predictors in a national sample of women and (2) to explore the relationships between selected types and number of drug treatment services for DUDs and predisposing factors, enabling resources and need factors.

It is hoped that this research will contribute to the body of literature on the factors that are responsible for drug treatment services utilization, thereby determining women's mental health needs, access to treatment and the development of culturally relevant interventions that lead to positive health outcomes for all women. Additional attention is required for future research to address the unique needs of women as very little is known about why there are gender and racial/ethnic differences in drug use treatment services utilization.

One of the objectives of this research was to address gaps in the literature on women's perception of treatment needs, extent of social support and external barriers associated with their utilization of selected types and number of drug treatment services, therefore estimates from this study will help social workers and policymakers understand the nature of the problem and provide solutions.

From a policy perspective, the Council on Social Work Education (2016) highlights in their policy agenda that "Within social worker's role as clinicians, advocates, policymakers and community leaders, there is the capacity to promote culturally relevant approaches to underserved women with problematic substance use. Federal policy should strive to meet the full needs of the individual. Meeting the full needs of individuals suffering from addiction is vital. This includes prevention, diagnosis, access to care, medication management, treatment, therapy, and support services that are culturally relevant to the individual. Such a holistic approach supersedes a pure medical course of treatment. CSWE believes that addressing the full needs of the individual is critical to recovery" (p. 2). Therefore, it is critical that social workers advocate for policy changes to remove structural barriers that affect treatment utilization for substance use.

Similarly, the National Association of Social Workers highlight that "Social work researchers are uniquely positioned to strengthen the evidence base by taking a closer look at these treatments and their applicability across communities and populations. In cases in which interventions do not exist that meet the needs of marginalized communities or populations, social work researchers again have the tools to develop or tailor and test new or adapted interventions" (Wells, Kristman-Valente, Peavy, & Jackson, 2013, p. 2). Therefore, it is hoped that social workers continue to focus their work in communities where health utilization is low and to inform policymakers on the demographic characteristics of the groups of women with low drug treatment service utilization so that these women can be engaged in services

Definition of Terms

The following definitions are presented to provide an understanding of the terms and phrases used contextually and operationally in this study:

Substance Use Disorder: Defined in the DSM 5 as a "maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances" (American Psychiatric Association, 2000).

Drug Treatment Services Utilization: In the literature, "utilization can be understood by a model composing of predisposing, enabling and need components" (Andersen, 1995). These factors are associated with the utilization of health services for drug use disorders. In this study, the two categories of drug treatment services are Professional Drug Treatment Services and Informal Drug Treatment Services.

Professional Drug Treatment Services: Professional Drug Treatment services in the literature can be defined as having attended a detoxification program, any other inpatient/residential drug treatment program, or any other outpatient drug treatment program in the past 12 months (Avalos & Mulia, 2012). In this study, professional drug treatment services. is conceptualized as visiting a private professional and visiting an outpatient clinic.

Informal Drug Treatment Services: Informal Drug Treatment Services is defined as the joining or forming of other individuals who have problems with substances (Avalos & Mulia, 2012). In this study, peer support group/12 Step meetings is defined as an informal treatment service.

Predisposing Factors: Predisposing factors are "individual characteristics which exist prior to the onset of specific episodes of illness, people with certain of these

characteristics are more likely to use health services even though the characteristics are not directly responsible for health service use" (Andersen, 1995). Predisposing factors will be operationalized in the study as age, race, marital status, education, income and geographical location.

Enabling Resources: Enabling resources are defined as "the logistical aspects of obtaining care that includes personal/family, community characteristics, genetic conditions and psychological characteristics" (Andersen, 1995). Enabling factors will be operationalized in this study as health insurance, knowledge of accessing health services, waiting time and extent of social support.

Need Factors: Need factors will be operationalized as perceived. Perceived is defined as "how people view their own general health and functional state as well as how they experience symptoms of illness, pain and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek help" (Andersen, 1995).

This chapter provided an introductory overview of drug treatment utilization among women along with the statement of the problem, prevalence of the problem, purpose of the study, research questions that guided the study, significance to social work and definition of terms. Chapter 2 provides a literature review on drug treatment service utilization and the associated factors related to use of different types of drug treatment services. The Andersen Behavioral Model of Health Services Utilization (1995) and Ecological Systems Theory (1979) are also discussed.

Chapter 2: Literature Review

This chapter presents a review of the current knowledge base about treatment services utilization for substance use, and the theory and conceptual framework that guided the study. It includes a summary of the predisposing, enabling and need factors that affect utilization of professional and informal drug treatment services.

A review of the literature highlight that women pursuing recovery face unique challenges and have needs that are distinct from men's (Howard, 2016). Thompson, Goodman, and Kwate (2016) found that no empirical study has examined the relationship between racial discrimination, racial socialization and behaviors that influence substance use with little attention focused on understanding the intersection of gender, race and ethnicity with respect to service disparities in drug treatment services utilization (Manuel, 2017).

Research is lacking in the gender differences on misuse of substances. The scant information that is available shows that women in contrast to men remain an underserved population in regards to treatment of co-occurring disorders. Women presenting for treatment may report comorbid health conditions, which is important for providers to consider the overlap of health conditions and alcohol problems (Bold, Epstein, & McGrady, 2017). Women experience different interpersonal issues from men which include depression, poor coping skills and low self-esteem due to instances of Military Sexual Trauma (MST), childhood abuse and Intimate Partner Violence (Hien et al., 2004). Moreover, there are gender specific risk factors such as interpersonal trauma and domestic violence that require women to receive culturally competent interventions to

address their symptoms of PTSD and development of substance use problems as a result on the non-treatment of the mental health disorder (Hien et al., 2004).

Types of Drug Treatment Services

There are several types of drug use treatment services. Some of the most widely accepted approaches include residential treatment, outpatient treatment, peer support groups/12 Step meetings and case management services. Of the four million individuals who received treatment in 2013, 2.3 million participated in peer support groups (e.g., Alcoholics Anonymous/ Narcotics Anonymous), 1.8 million received outpatient treatment at a substance use treatment facility, and one million received residential treatment at a residential substance use treatment facility (SAMHSA, 2014). Additionally, 1.2 million individuals received outpatient treatment at a mental health center, 1 million at an inpatient hospital, 770,000 at a private physician's office, 603,000 at an emergency room, and 263,000 in a prison or jail (SAMHSA, 2014).

Although, each of these treatment services have demonstrated success, a combination of treatment services may be utilized by the individual based on different factors associated with accessing a specific type of treatment service.

Professional Drug Treatment Services

Outpatient substance use treatment programs are similar to residential or inpatient programs in a variety of ways. These include differences in the structure, organization, materials, therapeutic approach, length of program, eligibility requirements and criteria for completion. However, most outpatient programs consists of individual therapy and group counseling sessions, medication management, and psychoeducation programs (Center for Substance Abuse Treatment, 2006) but the distinguishing difference is that

outpatient does not require overnight stays thereby allowing the clients to have the freedom to meet other obligations such as work, family and education (Gifford, 2011). Outpatient programs are designed to match the client's needs to increase adherence to treatment. The National Institute on Drug Abuse (2012) noted that "matching treatment settings, interventions and services to each individual's particular problems and needs is critical to his or her ultimate success in returning to productive functioning in the family, workplace and society" (p. 3).

Informal Drug Treatment Services

Many sociodemographic variables have been examined including age, gender, ethnicity, psychiatric and addiction severity and social support as predictors of utilizing 12 step groups (Weiss et al., 2006). Information about disparities in utilization of peer support groups such as Alcoholics Anonymous is scant in the literature despite 12 Step meetings being the most widely used intervention for substance use problems (Avalos & Mulia, 2012). Alcoholics Anonymous (AA) offers a readily and freely available source of care with more individuals seeking AA if professional substance use treatment services are unavailable or are of short duration (Gossop, Stewart, & Marsden, 2007). Evidence exists in the literature on the efficacy of 12 step peer recovery programs with Alcohol Use Disorders but few studies examined the effectiveness with Substance Use Disorders (SUDs) (Hoeppner, Stout, & Pagano, 2012).

There are many treatment options for individuals who seek treatment with statistics from SAMHSA in 2014 highlight that of the 4 million individuals who received treatment in 2013, 2.3 million participated in peer support groups/ 12 Step meetings and 1.8 million received outpatient treatment at a specialty addiction treatment clinic

(SAMHSA, 2014). However, some women with substance use problems do not engage with professional and informal treatment services which makes addressing barriers to care a health care priority (Grant, Grant, Goldstein, & Saha, 2015). Perception of not needing treatment or resistance to the process of treatment is also a significant contributing factor to treatment of substance use (Center for Substance Use Treatment, 2004). Additional barriers include lack of transportation, social stigma, denial, fear of losing children and primary care physicians not referring women to substance use treatment clinics (Small Curran, & Booth, 2010). Women with substance use disorders face critical barriers to quality health care such as legal consequences in States where pregnant women are penalized and these sanctions are barriers to seeking health care and have the potential for women to continue to engage in substance use (Substance Use and Mental Health Administration, 2018).

Evidenced Based Treatment Models

Scant research is available that highlights specific therapeutic approaches for women outside of trauma-informed services. In recent years, more attention has been given to effective women's treatment programming across systems with considerable emphasis on integrated care and the identification of specific treatment issues and needs for women (SAMHSA, 2009). Parthasarathy, Mertens, Moore, & Weisner (2003) in their study of a randomized control trial of assigning patients to an integrated care model where primary health care is provided along with substance abuse treatment, and an Independent Care model where medical care is provided in the primary care clinics, found that it is beneficial to refer patients with substance use related medical conditions to a provider trained in addiction medicine.

An example of one of the key integrated treatment models applicable to women and addictions is the Seeking Safety (SS) program. SS is a short-term cognitive behavioral treatment that has been applied as a successful treatment modality in treating and addressing co occurring disorders in women (Jones, Hopson, Warner, Hardiman, & James, 2015). The Seeking Safety (SS) program has been used in clients with complex trauma and in various populations. Based on the above experiences, it is imperative that women who are diagnosed with co-occurring disorders receive the appropriate support and therapeutic interventions that specifically treat with substance use and dependence. The SS program became an evidenced based model due to pilot studies and randomization on the following groups: incarcerated women, outpatient women and men, men and women veterans and women in community mental health settings.

Another critical area is the provision of Trauma Informed Care (TIC) and Trauma Informed Services (TIS) to the population of women who are seeking treatment. Having a treatment approach that is allows for the assessment of trauma, PTSD and co-occurring trauma related disorders and symptoms allows for both preventative and rehabilitative care for those affected (Huckshorn & Lebel, 2013). Therefore, it is critical to utilize a gender specific treatment approach to address the societal and economic context of many substance abusing women's lives and the specific manifestations and comorbidities of substance use in women (Jones, 2010).

There are additional models for treatment of co-occurring disorders but do not have sufficient outcome studies to assess its impact (Najavits, 2004). These include: Addiction and Trauma Recovery integration Model, Helping Women Recover: A program for

handling addiction, Trauma Adaptive Recovery Group Education and Therapy, for treating addiction and Trauma-Relevant Relapse Prevention Training (Najavits, 2004).

Theoretical Framework

Various theories can be used to help explain the predictors of drug use treatment utilization among women including, intersectionality theory, social bonding theory, theory of motivation, symbolic interaction and life course theory. However, Bronfenbrenner's Ecological System's Theory (1979) provides a systematic overview of the individual, community and societal level factors in a woman's life that would influence treatment utilization. Using a systems approach is an appropriate framework for understanding women's treatment needs and the impact of substance use on their relationships (SAMHSA, 2009).

Bronfenbrenner's Ecological Systems Theory (1979)

Bronfennbrenner's theoretical framework consists of five constructs such as the microsystem, mesosystem, exosystem and macrosystem that serves as a key foundation for identifying the various individual, community and systemic factors among this population and how these factors impact treatment services utilization. Ecological systems theory is the ideal for understanding these factors and it has become one of the major theories in understanding treatment seeking behaviors. Women have unique biopsychosocial factors that are paramount requiring treatment and recovery programs to have gender specific interventions.

Five constructs of the ecological system. Bronfenbrenner (1979) explained that the ecological system as a nested arrangement of structures each contained in the next

that must be examined as an interdependent whole to fully understand the forces surrounding a developing individual.

Micro system. Relevant to the micro system which Bronfenbrenner (1979) defines as a complex set of relations between the developing person and their immediate setting containing the person such as the home, workplace and school. Bronfenbrenner further explains that the individual has roles to play in each environment and these activities constitute the elements of a setting (Bronfenbrenner, 1979). Specific categories of women such as women who live in rural areas, women with disabilities, lesbian women, professional women, women in helping professions and adolescent girls are among the groups of women most vulnerable to substance use (Najavits, 2002).

Meso system. The meso system links different systems together (micro system and the macrosystem) to highlight the influence of each system on the individual's life. The exosystem affects the individual in less direct ways such as media and transportation. This is part of the individual's life in context but they do not have control over this specific type of environment. The mesosystem, represents the interrelationships between her immediate relationships and systems; e.g. the interaction Creating the Context between her family and school, the potential influence or conflict between her substance using peer group and her family (SAMHSA, 2009).

Exosystem. The exosystem represents factors that do not involve active participation by the individual but events that occur affect the individual. (Bronfenbrenner, 1979). The exosystem represents larger systems that directly influence the woman but where the woman has no direct active role; e.g., county funding for

treatment or State and Federal laws pertaining to sentencing or child protective services (SAMHSA, 2009).

Macro system. There are a number of factors responsible for low income or at risk populations utilizing available support services due to place and race (Allard, Tolman, & Rosen, 2003). The macrosystem represents an individual's wider life in context. These include ideologies, cultural norms, the legal system, education and health care. The individual also does not have control over these factors but it helps to shape their behavior and their experiences.

Chronosystem. The chronosystem represents the influence on the person's development over time in which the person lives and thrives, these may include patterns of social interactions. Systemic and socially constructed treatment and recovery barriers impact women's motivation to enter and successfully complete treatment and recovery programs (Taylor, 2010). Among these barriers to treatment services access are lack of or reduced childcare services and lack of community/financial support (Small, Curran, & Booth, 2010).

On a structural level, some individuals believe that persons with SUDs need to punished rather that receive support which results in lower support for public health oriented drug control policies such as funding for SUD treatment and harm reduction services (Kulesza, 2015).

Conceptual Framework

There is a significant body of literature on theoretical frameworks explaining an individual's health service utilization. This chapter will introduce the Andersen Behavioral Model of Health Services Utilization (1995) as the conceptual framework that

guided the study. The theory assumes to be the most effective in understanding the factors associated with treatment seeking behaviors among women, and the role of the family along with the current treatment services available.

The ABMHSU has evolved many times from the original model in the 1960s based on changes in needs and policies since the original model was developed. The initial model highlighted that people's health service utilization is directly related to their predisposition to use services, factors that will enable or impede use and their need for care (Andersen, 1995). The choice of the Andersen Behavioral Model of Health Services Utilization (1995) was made as this model allows for the discovery of multifaceted challenges persons with substance use problems experience while navigating systems of care (Andersen, 1995). The revisions and expansions of the original model to include explains that health services utilization is influenced by three main factors which include (a) predisposing factors that include factors that exist before the onset of any illness such as socio demographic characteristics, (b) enabling resources that include the logistical aspects of obtaining care such as personal/family resources (health insurance, access to health services, waiting time and extent of social relationships) and (c) perceived health status (Yang & Hwang, 2016). An adapted version of the ABMHSU model was used in this study as it addresses the micro, mezzo and macro factors that affect treatment utilization among women. The ABMHSU provides an examination of factors that either motivate or act as barriers to substance use treatment utilization among women. An image of the study's conceptual model can be seen in Figure 1.

Andersen Behavioral Model of Health Services Utilization (1995)

The original model was developed in the late 1960s to understand how families use health services, to measure equitable access to health care and to assist in the development of policies to promote equitable access (Andersen, 1995). As most studies in the 1960s, the original model focused on the family as the unit of analysis because the medical care an individual received was a function of socio demographic characteristics. The original model did not adequately explain the interactions between consumers and the service providers when people access and receive services. Andersen's work shifted from the family to include the individual as a unit of analysis because of the difficulty in developing measures at the family level as it relates to accessing care (Andersen, 1995). The model was then revised in the 1970s to include the role of health care institutions, resources and policies on health services utilization (Andersen, 1995). Through the period 1980 to the 1990s, the Behavioral Model was revised to include health services utilization based on type of health condition or health status of the individual (Andersen, 1995). The final model developed in 1995 highlighted how individual characteristics and the interaction with the individual and their community and wider environment impacts treatment utilization which fits into the overall aim of this study.

Major Components of the ABMHSU

Predisposing factors. Predisposing factors are individual characteristics that existed before the onset of illness (Andersen, 1995). These factors include demographic characteristics such as age and gender represent the biological imperatives that increase the likelihood of people utilizing health services. Predisposing factors also includes social structure factors such as race, marital status, income and education that determine the

status of the person in the community, the individual's ability to respond to the environment and how healthy or unhealthy the community is likely to be (Andersen, 1995).

Enabling resources. Enabling resources are characteristics that contribute or act as barriers to the use of health services. These include health insurance benefits that cover needed services, availability of health services, waiting time and social relationships. Enabling resources are also factors that negatively impact a consumer's access to or utilization of health services (Kirby, 2008).

Need factors. Need refers to how people perceive their health status and if their health situation warrants treatment. Perceived need is conceptualized in the ABMHSU as how people view their own general health and functional state and if they judge their problems to be of sufficient important and magnitude to seek professional help. According to Andersen (1995) perceived need is not a measure of pathology but is largely tied to social structure. The biological component of need is measured by evaluated need which is also a social component but is determined by a health professional. Perceived need helps to better understand care seeking and adherence while evaluated is more related to the kind and amount of treatment that will be provided after a patient has presented to a medical care provider (Andersen, 1995). This study did not focus on evaluated need as evaluated is closely associated with the kind and amount of treatment that will be provided after a patient has presented to a medical care provider (Andersen, 1995).

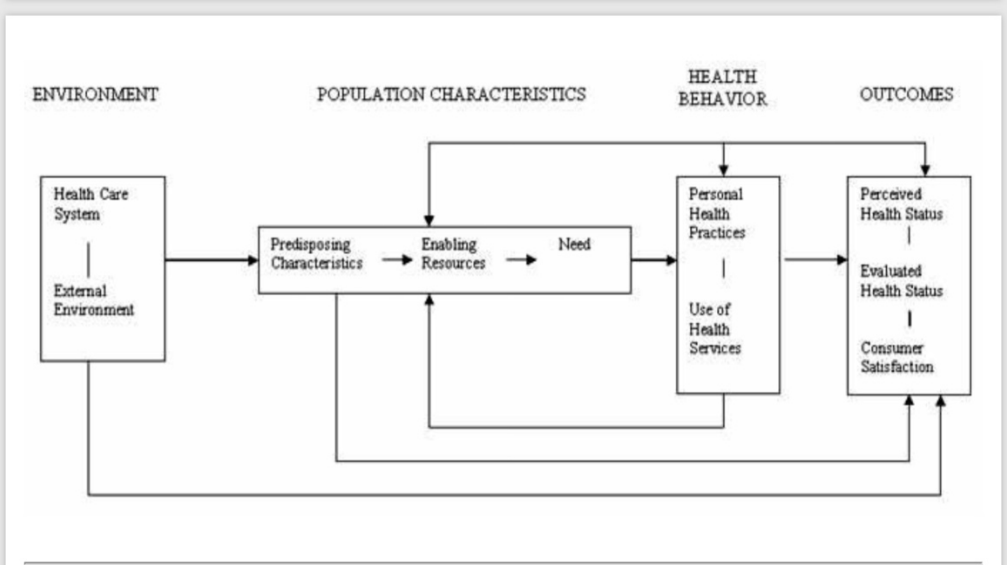

Figure 1: Andersen Behavioral Model of Health Services Utilization (1995)

Modified Conceptual Model

A modified version of the ABMHSU will be used as the conceptual framework for this study of factors that predict drug treatment services utilization among women. Figure 2 contains the elements of the ABMHSU model that are relevant to this study. This study's predisposing factors include age, race, marital status, education, income and geographical location. Enabling resources include whether the health insurance covered treatment, accessing health services, waiting time and extent of social relationships. The need factors are one's perception that they need actual treatment for their drug use disorder.

Modified Conceptual Model

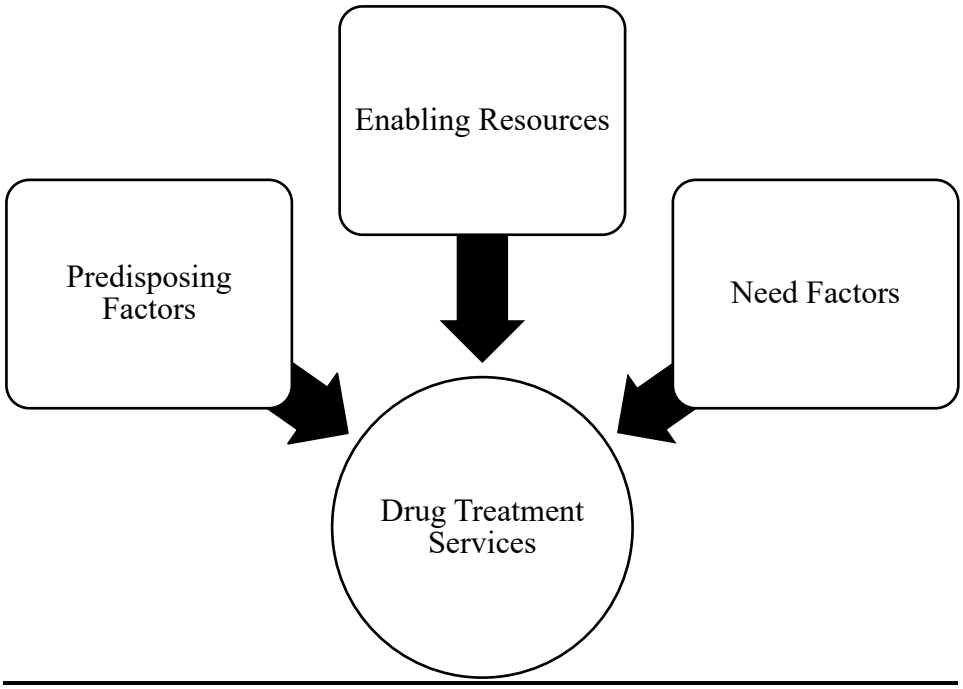

Figure 2: Modified Conceptual Model

Predisposing Factors

Based on the ABMHSU, predisposing factors such as age, race, marital status, education, income, geographical location and income influence utilization of drug treatment services. This section summarized the literature on predisposing factors and their relationship to drug treatment services.

Studies examine how race/ethnicity is associated with substance use treatment utilization. Data from the National Treatment Improvement Evaluation Study (NTIES) conducted between 1992-1997 showed that gender was a significant indicator of treatment substance use treatment utilization especially for the Latino subgroup of participants (Guerrero, Marsh, Cao, Shin, & Andrews, 2014). Regarding race, there is a

significant gap between treatment utilization among racial and ethnic minorities compared to whites (Wells, Klap, Koike, & Sherbourne, 2001). Gender and race/ethnicity are important demographic characteristics associated with an SUD but significant barriers exist to accessing treatment (Blakely & Bowers, 2014).

Research studies highlight that African Americans are less likely to utilize preventative care services than White Americans and these differences contribute to racial health disparities with less being known about the culturally relevant factors among marginalized groups that influence the utilization of health care services (Pullen, Perry, & Oser, 2014). Despite these factors, little attention has been paid to understanding the intersection of gender, race and ethnicity with respect to service disparities in drug treatment services utilization (Manuel, 2017).

Researchers found that Black and Hispanic women compared to White women had lower service utilization before the Affordable Care Act (Zamore, Mulia, Borges, & Greenfield, 2009). Studies highlight that Latina women are a population with special needs yet limited information exists on understanding the structural barriers that limit this populations use of treatment and scant information on how they navigate access to health care (SAMHSA, 2013).

Due to gaps in income between women and women, with women typically earning less than men leads to greater problems in accessing health services (Humphreys & Frank, 2014). Low income women residing in urban settings are less likely than women in suburban areas to receive specialized psychiatric and substance dependence outpatient services (Allard, Tolman, & Rosen, 2003). In their study of low-income drug

using women, Mulia (2002) found that institutional rules and informal provider practices are a barrier to women's use of health and social services (Mulia, 2011).

With less geographical access to treatment options rural drug users report more negative views toward available substance use care including lower perceived affordability, effectiveness acceptability and need than drug users in urban communities (Borders, Booth, Stewart, Cheney, & Curran, 2015). Rural substance users are less likely than their urban counterparts to use formal substance use treatment (Curran, Ounpraseuth, & Small, 2011) with researchers reporting that rural drug users utilize drug treatment at lower rates (24% in the past three years) than urban drug users with a rate of 37% in the past year (Curran et al., 2011).

Enabling Resources

Enabling factors include whether or not the individual's health insurance covers needed services, knowledge about accessing health services, waiting time, and extent of social relationships. Women experience a myriad of factors that influence non treatment seeking behaviors. This section summarizes the literature on enabling variables and their relationship to treatment utilization.

Health Insurance

Inequities in having insurance contribute to disparities in drug use disorder treatment with the literature recommending that further research is necessary to investigate disparities within systems where lack of insurance is not a barrier to care (Satre, Campbell, Gordon, & Weisner, 2010). More recent studies indicate that perceived treatment need is closely associated with having health insurance compared to those who did not feel a need for treatment and those who did not have health insurance (Borders &

Wen, 2018; Ali, Teich, & Mutter, 2015). However, the expansion of insurance under the Patient Protection and Affordable Care Act (ACA) is expected to increase the number of behavioral health services utilization but not specially substance use treatment (Ali, Teich, & Mutter, 2015). Substance use treatment although needed is not often sought by women and women without Medicaid or private insurance do not enter treatment and they feel that their interests are not taken into consideration are therefore not motivated to enter treatment (Hines, 2011).

Access to Health Services

The literature reports that non systematic treatment barriers such as lack of knowledge of treatment options and undesirability of some options stems from doubts about the treatment model being offered or the perception of attending the treatment sessions (Hammarlund, Crapanzano, Mulligan, & Ward, 2018). Individuals lack of knowledge about places to seek help and the location of treatment providers are barriers to treatment (Blakely & Bowers, 2014; Ali, Teich, & Mutter, 2015). The APA's 2014 survey of treatment programs found that only 44% of substance use treatment programs provided special programs for adult women and 20% offered programs for pregnant or postpartum women (APA, 2015). An estimated 1.2 million persons felt they needed treatment but did not get it, 441,000 persons reported that they made an effort but were unable to get treatment, and 792,000 persons reported making no effort to get treatment. These estimates underscore the importance of increasing prevention efforts and improving access to treatment for substance abuse and co-occurring disorders (NIH, 2010).

Extent of Social Support

Extent of Social support has many definitions in the literature, these can include the types of help exchanged in a network such as emotional (being there or listening) or informational recommendations. Women are more likely to face discrimination and stereotyping for alcohol or substance misuse (Substance Abuse and Mental Health Administration, 2015) with less support from their social relationships to seek treatment. There are several factors influencing entrance and exit factors for this group of women in substance use treatment (Blakey & Bowers, 2014). The barriers that exist before entrance to treatment are the same challenges that interfere with relapse (Substance Abuse and Mental Health Administration, 2015). Women also experience less support from family regarding seeking substance use treatment which acts as a barrier to seeking professional services. However, connecting clients with families and an extended network could increase addiction treatment use (Adorno et al., 2013). However, individuals with friends who abused substances and those who enabled substance use were seen as providing important social support and acted as positive involvement with women (Brown, Tracy, Minkyoung, Park, & Min, 2015). Women who use substances are often surrounded by a personal network of individuals who also who substances and those persons may be limited in the support they provide for the person seeking sobriety (Tracy, Munson, Peterson, & Floersch, 2010).

Verissimo, Grella, Amaro, and Gee (2014) studied a sample of 6294 Latinos and found that discrimination was a significant factor in seeking treatment to address their needs. Given the negative impact of substance use on mothers and their children and

parenting, there are unique barriers to treatment that may accompany substance users such as stigma and judgment (Stone, 2015).

Using data from the 2003-2010 National Survey of Drug Use and Health, Stringer & Baker (2018) found that women are more likely to report stigma as a barrier to seeking treatment compared to men with married women reporting the highest level of stigma (Stringer & Baker, 2018). These factors highlight the external barriers and interpersonal factors that affect utilizing treatment.

Need Factors

Need factors indicate how an individual's perception of the problem and their health status influences their utilization of treatment.

Perceived Need

There is a significantly higher level of women using substances compared to men regardless of type of substance used (Chen & Jacobson, 2012). In the 1980s, research indicated that women were less likely than men to recognize drinking as a problem (Mendelson & Mello, 1998). Social stigma is a barrier to treatment utilization as Stringer & Baker (2018) found that women with unmet need for substance use treatment had 44% odds of reporting perceived stigma as a reason that they did not seek treatment in the previous year. In a sample of 29 Black women who received treatment for substance use in an urban Northeastern city, bias and stigma, mistrust of providers and perceptions of illness and wellness were reported as barriers when optimism, strength, relationship with children were significant motivators to recovery (VanDeMark, 2007).

Women are more likely to enter treatment because of personal perception of need or loss of control over their lives or increasing family pressures to enter treatment (Green,

Polen, Lynch, & Bennett, 2002). However, it is estimated that between 25% to 82% of dependent substance users can stop using substances without professional treatment services (Scherer, Trenz, Harrell, Mauro, & Latimer, 2013). There are women specific motivators that are which include worry about the amount and/ or increase in drinking, concern about functional drinking, concern about negative interactions or embarrassing behaviors while intoxicated and concerns about loss of control (Grosso et al., 2013).

Cultural factors also shape how Hispanic women recognize substance use as a problem as they are less likely to be confronted about their drug use (Kail & Elberth, 2002) with some family members preferring to break off contact to avoid conflict (Mahan, 1996).

Perceived need for treatment is an essential first step in the treatment seeking process and has been shown to be strongly associated with treatment utilization (Borders & Wen, 2018).

Perceived Health Status

Perceived Health Status has been reported in the literature as self-reported health (SRH) and is based on the respondent perception of their health status. Population based surveys use the SRH to measure the health status of multi ethnic respondents. The question “What is your general health” has been studied by Kandula et al., (2007) and is significantly associated with clinical indicators of health.

Chapter 3: Methods

The purpose of this study was two-fold: (1) to determine the prevalence of Drug Use Disorders (DUD) and its associated predictors in a national sample of women and (2) to explore the relationships between selected types and number of treatment services for DUDs and predisposing factors, enabling resources and need factors. The chapter is organized as follows; the research questions and their associated hypotheses are presented first; these are followed by a discussion of the research design, data source, study sample, instrumentation, independent variables, dependent variables and data analysis.

Research Questions and Hypotheses

Research Question 1: What is the prevalence and predictors of DUDs among the women in the sample?

H_{01}: There are no significant associations between DUDs and selected predictors (age, race, marital status, education, geographical location and income).

H_1: There are significant associations between DUDs and selected predictors (age, race, marital status, education, geographical location and income).

Research Question 2: What are the predisposing factors (age, race, marital status, education, geographical location and income) associated with selected types and number of drug treatment services?

H_{02}: There is no significant association between predisposing factors and selected types and number of drug treatment services.

H_2: There is a significant association between predisposing factors and selected types and number of drug treatment services.

Research Question 3: What are the enabling resources (health insurance, access to health services, waiting time, extent of social support) and selected types and number of drug treatment services?

H_{03}: There is no significant association between the enabling resources and selected types and number of drug treatment services.

H_3: There is a significant association between enabling resources and selected types and number of drug treatment services.

Research Question 4: What are the need factors (perceived) associated with selected types and number of drug treatment services?

H_{04}: There is no significant association between need factors selected types and number of drug treatment services.

H_4: There is a significant association between need factors and selected types and number of drug treatment services.

Research Question 5: What is the joint association between the selected predisposing factors, enabling resources and need factors with selected types and number of drug treatment services?

H_{06}: There is no significant association between the selected predisposing factors, enabling resources and need factors with selected types and number of drug treatment services.

H_7: There is a significant association between the selected predisposing factors, enabling resources and need factors with selected types and number of drug treatment services.

Research Design

This research study was both explanatory and descriptive in design. One of the primary features in explanatory research is that it explains the interrelationships between phenomena, for example variation in an indicator or variable may be associated with a change in a related phenomenon. For this study, data from a nationally representative sample of women representing the population of 122,200,138 women in the United States from April 2012-June 2013 was analyzed.

The rationale for using nationally representative secondary data is that it allows for the researcher to validate the results for the US population as a whole. Also, by using data that is already collected and processed allows for the researcher to focus on framing the questions and conducting the analyses (Salkind, 2010). Since one of the objectives of this research was to address gaps in the literature on women's perception of treatment needs, structural barriers and extent of social support associated with their utilization of selected types and number of drug treatment services, estimates from this study will help social workers and policymakers understand the nature of the problem. Measures used in this study are organized under the following categories/rubrics: predisposing factors, enabling resources and need factors that were associated with women's use of selected drug treatment services and overall number of drug treatment services in the past 12 months

Data Source

The data for this study comes from the National Institute on Alcohol and Alcohol Abuse (NIAAA) National Epidemiologic Survey of Alcohol and Related Conditions III (NESARC-III), which is the most recent year for which the NESARC is available for

limited public use. The NESARC-III is the fourth national survey conducted by the NIAAA. It consists of a nationally representative sample of 36, 309 adults aged 18 or older residing in private households and college dormitories across the United States. Previous NIAAA national surveys included the 1988 Alcohol Supplement of the National Household Interview Survey (fielded by the National Center for Health Statistics), the 1991-1992 National Longitudinal Alcohol Epidemiologic Survey, the 2001-2002 Wave 1 NESARC, and the 2004-2005 Wave 2 NESARC.

The NESARC- III used a complex survey design to yield population-representative estimates of United States adults ages 18 and older. Black, Hispanic and American Indian/Asian adults were sampled at a higher rate than the remainder of the population to ensure reliable estimates of those groups. Veterans of the United States Armed Forces were included but persons on active duty in the military were excluded because they are not offered protection under Certificates of Confidentiality (National Institute on Alcohol Abuse and Alcoholism, 2015).

The total NESARC-III response rate was 60.1%, comparable to the majority of national surveys currently conducted in the U.S. (Centers for Disease Control and Prevention, 2013; Substance Abuse and Mental Health Administration, 2013). The target sample size was determined by results of prior NESARC survey test-retest designs as optimal for obtaining sufficient power (80%) for effect sizes (prevalences) greater than about 3%.

Instrumentation

The semi structured diagnostic interview used to collect information from the respondents was the NIAAA Alcohol Use Disorder and Associated Disabilities Interview

Schedule (AUDADIS-5) (National Institute on Alcohol Abuse and Alcoholism, 2015). Each respondent in the NESARC-III was asked questions about their background and lifestyle, age, education, drinking practices, drug/medicine use, mood, anxiety, behavior, personality and medical conditions (Grant, Grant, Goldstein, & Saha, 2015). Measures of the study included view of the current health care system, knowledge about accessing health services, health insurance coverage, and other measures of socio- economic status.

The Alcohol Use Disorder and Associated Disabilities Interview 5 (AUDADIS-5)

The Alcohol Use Disorder and Associated Disabilities Interview Schedule 5 (AUDADIS-5) was designed to measure Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) criteria for Alcohol Use Disorders (AUD), and Drug Use Disorders (DUD) (Grant, Grant, Goldstein, & Saha, 2015). The AUDADIS is a fully structured interview designed to assess alcohol, drug and mental disorders according DSM criteria in the general population (Grant, Dawson, & Hasin, 2001). The AUDADIS provides detailed measurement of alcohol and drug use disorders, other psychiatric disorders, and many risk factors (Grant, Dawson, & Hasin, 2001). Given the changes in diagnostic criteria from the DSM-IV to DSM 5, the reliability of AUDADIS-5 diagnoses and corresponding dimensional scales could not be inferred from DSM-IV measures. While many sections of the DSM-5 were not finalized until 2012, the criteria for the disorders assessed in the NESARC-III were essentially in final form in 2011, and hence were incorporated into the AUDADIS-5, allowing for the test of these finalized diagnoses.

The history of medicine and drug use asked participants if they had ever engaged in medicine or drug use in the past 12 months. Twelve month diagnoses of DUDs were based on amphetamine, cannabis, club drug, cocaine, hallucinogen, heroin, non-heroin

opioid, sedative/tranquilizer and solvent/inhalant use disorders (Grant, Saha, Ruan, & Goldstein, 2016). A DUD diagnosis in the past 12 months was coded in the dataset as 0="no" and 1="yes" (National Institute on Alcohol Abuse and Alcoholism, 2015). These results reflect the aggregation of drug specific use disorders into a diagnoses of any 12 month DUD.

Past-year DUD diagnoses demonstrated fair to good test–retest reliability over a mean interval of 2.86 weeks (range: 1–10 weeks), whereas dimensional substance-specific criteria scales showed fair to excellent reliability (Grant et al, 2015). Test-retest reliabilities for the AUDADIS-5 for alcohol and drug use disorders (kappa = 0.66–0.91) and associated consumption measures (kappa = 0.68–0.97) were good to excellent (Grant, Grant, Goldstein, & Saha, 2015) while reliability coefficients for the disorders and measures were extremely similar in substance abuse (Hasin et al., 1997) and primary care settings (Canino et al., 1999).

Independent Variables

The independent variables are categorized using the framework of the Andersen Behavioral Model of Health Services Utilization (1995) that proposes that health services utilization is determined by predisposing factors, enabling resources such as insurance and need factors such as perceived need and perceived health status (Andersen, 1995). Table 1 provides a list of the independent variables that were used in this study.

Predisposing Factors

Predisposing factors are defined as "conditions that existed before the onset of illness" (Andersen, 1995). Predisposing factors analyzed in this study were age, income,

race, education, marital status and geographical location. The predisposing factors were used to describe the overall sample and as predictor variables in the multivariate analyses.

Enabling Resources

Enabling factors are characteristics that contribute or act as barriers to health services utilization (Andersen, 1995). Enabling resources used in the study were health insurance, access to health services, waiting time, and social support. Enabling resources were used as predictor variables in the multivariate analyses.

Need Factors

Need factors are defined as "how people view their own general health and functional state as well as how they experience symptoms of illness, pain and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek help" (Andersen, 1995).The perceived need item is also referred to as the individual perception of the respondent's own health status. As shown in Table 1, examples of the questions included under this rubric are "What is your general health?"; "thought the problem would get better by itself"; and "thought it was something I should be strong enough to handle alone" (National Institute on Alcohol Abuse and Alcoholism, 2015).

Dependent Variables

Drug Use Disorder

The first dependent variable was prevalence of Drug Use Disorder diagnoses in the past 12 months. Drug induced disorders were defined for respondents who met the criteria for any DUD. According to the DSM 5 criteria, Drug induced Disorders were defined as episodes that began after drug intoxification / and or withdrawal but were

either (1) not associated with a period of at least one month of abstinence or (2) did not present for more than one month after the cessation of drug intoxification or withdrawal. All items in the scale were dichotomously recoded (0="No" and 1="Yes.").

Drug Treatment Services

For this study, having treatment for DUDs was measured by whether or not the respondent went to a professional and/or an informal drug treatment service (Peer Support Group). Professional Drug Treatment Services included a) private professional, physician, psychiatrist, social worker or any other professional and b) Outpatient clinic, outreach program, day/partial patient program. Informal Drug Treatment services/ Peer Support Group included 12 Step Meetings (Alcoholics Anonymous, Cocaine Anonymous, Narcotics Anonymous or other 12 Step meeting). The reason for not including other services such as emergency room services, drug/alcohol detoxification ward or social service agencies is because comprehensive substance use treatment is not available at those organizations and treatment at these organizations would differ from private professional, outpatient clinics and 12 Step meetings.

Respondents provided 'yes' or 'no' responses to: (1) Went to a private professional in the past 12 months (2) Went to an outpatient clinic in the past 12 months (3) Went to a 12 Step meeting in the past 12 months. Two overall indicators of having treatment services were also examined- no treatment services vs. having more than one treatment service and overall number of treatment services had for DUDs. A description of the dependent variables is shown in Table 2.

Derivation of Analytic Sample

The NESARC-III survey included N=36,309 adults. Of the adults, 20, 447 were identified as females (Women). Given this study's interest in DUD treatment services for women, the sample size varied by the specific type of analyses. For example, the full sample of 20, 447 women was considered for determining the prevalence of Drug Use Disorders; 6,344 and 524 of the women were considered for those who had DUDs and indicated (yes, no) to having selected drug treatment services within a 12 month period, respectively.

Figure 3 graphically depicts the exclusion processes to derive the analytic samples used in the study.

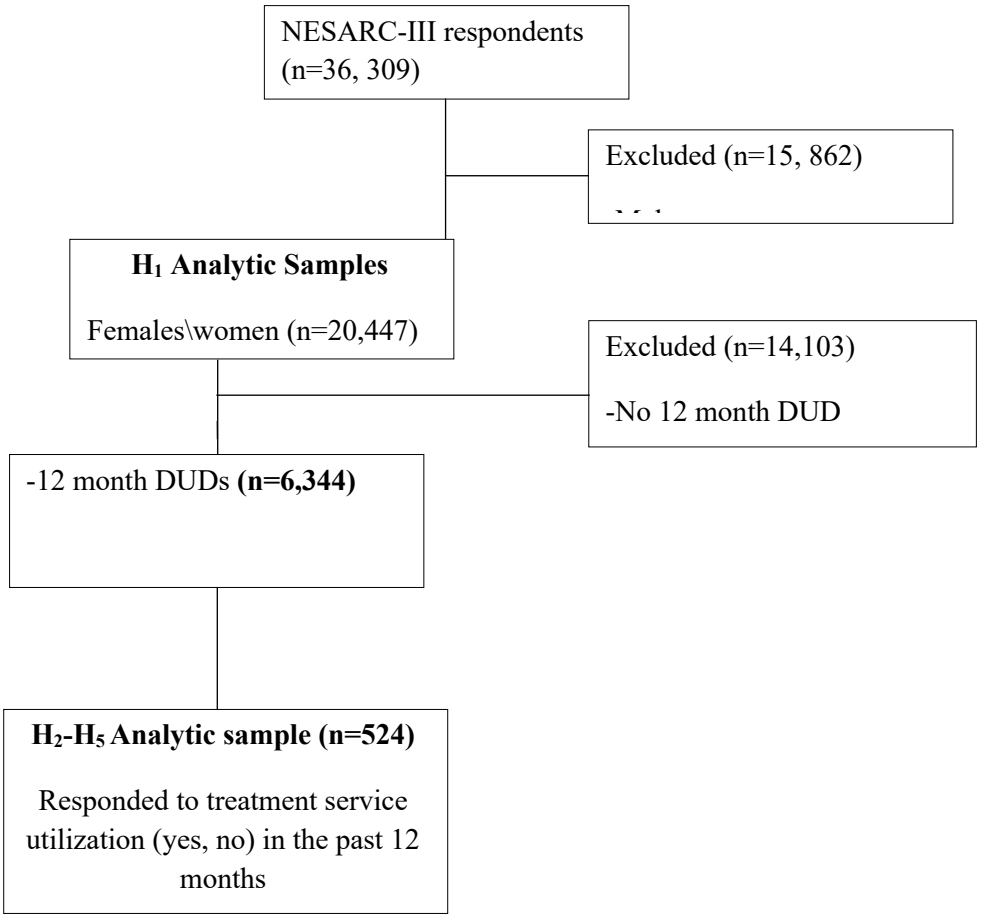

Figure 3: Derivation of Analytic Sample

Independent Variables

Table 1 displays the variable names, corresponding survey questions, type of independent variables and the level of measurement for each variable examined in the study. Table 2 displays the type of dependent variables and corresponding survey questions for each variable examined in the study.

Table 1*:* Independent Variables

Independent Variable Name and Label	Survey Questions	ABMHSU* Category	Level of Measurement
	Predisposing Factors		
Age (NAGE)	How old are you as of today?	Predisposing	Interval
Race (NETHRACERR)	What is your race? 1. White 2. Black 3. American Indian/Asian 4. Hispanic	Predisposing	Nominal
Education (NEDUCRR)	What is the highest level of school completed? 1. No formal schooling 2. Completed High School 3. Bachelor's Degree 4. Master's Degree or higher	Predisposing	Nominal
Marital status (NMARITAL)	What is your marital status? 1. Married/Widowed 2. Living with someone as if married 3. Divorced 4. Separated	Predisposing	Nominal
Geographical location (NREGION)	Geographical location 1. Northeast 2. Midwest 3. South 4. West	Predisposing	Nominal
Income (N1Q18BR)	Total Personal (coded) Income in the last 12 months	Predisposing	Interval

Table 1 (Continued)

Independent Variable Name and Label	Survey Questions	ABMHSU* Category	Level of Measurement
	Enabling Resources		
Health insurance (N3DQ4D1)	wanted to go but health insurance didn't cover 0=No, 1 =yes	Enabling	Nominal
Access to health services (N3DQ4D3)	didn't know any place to go for help 0=No, 1 =yes	Enabling	Nominal
Waiting time (N3DQ4D20)	had to wait too long to get into a program 0=No, 1 =yes	Enabling	Nominal
Extent of social support (N3DQ4D25)	family helped me to stop using medicines/drugs 0=No, 1 =yes	Enabling	Nominal
Extent of social support (N3DQ4D9)	afraid of what boss, friends, families or others would think 0=No, 1 =yes	Enabling	Nominal
	Need Factors		
Perceived (N3DQ4D7)	thought the problem would get better by itself 0=No, 1 =yes	Need	Nominal
Perceived (N3DQ4D10)	thought should be strong enough to handle alone 0=No, 1 =yes	Need	Nominal
Perceived (N3DQ4D22)	didn't think drug problem was serious enough 0=No, 1 =yes	Need	Nominal

Table 1 (Continued)

Independent Variable Name and Label	**Survey Questions**	**ABMHSU* Category**	**Level of Measurement**
Perceived *(N3DQ4D21)*	wanted to keep using drugs 0=No, 1 =yes	Need	Nominal
Perceived Health Status (N1Q25R)	What is your general health? 1. Excellent 2. Very Good 3. Good 4. Fair 5. Poor	Need	Nominal

*Andersen Behavioral Model of Health Services Utilization (1995) (ABMHSU)

Table 2: Dependent Variables

Dependent Variable Label and Name	Operational Definition
Drug use disorder (NDRUGUSER)	A DUD diagnosis in the past 12 months was coded 0= "no" and 1= "yes"
Drug treatment service	
1. Private professional *(N3DQ2B13)*	"Went to a private physician, psychiatrist, psychologist, social worker or any other professional in the last 12 months?" Responses were coded 0= "no" and 1= "yes"
2. Outpatient clinic *(N3DQ2B5)*	"Went to an outpatient clinic including outreach programs, day or partial patient program in the last 12 months?" Responses were coded 0= "no" and 1= "yes"
3. 12-step meeting *(N3DQ2B1)*	"Went to a Narcotics or Cocaine Anonymous, Alcoholics Anonymous or any 12-Step meeting in the last 12 months?" Responses were coded 0= "no" and 1= "yes"
Drug treatment services vs. no drug treatment service (Treatment01)	Had 0 drug treatment services or 1 or more drug treatment service in the last 12 months
Total number of drug treatment services (TREATSUM)	Sum of different types of drug treatment services

Data Analysis

Descriptive analyses, multiple logistic regressions and General Linear Models (GLM) were used to examine the associations among the variables (Table 3). Descriptive statistics were calculated using frequencies and percents, or means and standard deviations. This study also included the evaluation of a joint model as predictors of overall drug treatment services utilization.

The complex survey module in the Statistical Package for Social Sciences version 25 was used for all analyses. This module adjusts for the NESARC-III complex survey design and weighting adjustments for inverse of the probability of selection in the sample, over sampling of minority groups, nonresponse, and the population size. The degrees of freedom in the statistical analyses are a function of the number of Primary Sampling Units (PSU) and the number of strata. A p-value of 0.05 or less was considered statistically significant. All of the percentages are weighted.

Table 3 displays the statistical methods used to examine the associations among the variables in the study.

Table 3: Statistical Methods

Dependent Variables	Independent Variables	Statistical Method
Drug use disorder (NDRUGUSER)	Predisposing factors (age, race, marital status, education, geographical location, income)	Descriptive Statistics and Multiple Logistic Regression by Type of Model Predisposing factors (model 1)
Selected types of drug treatment services A. Private professional B. Outpatient clinic C. 12-step meeting/Peer support group	Predisposing factors (age, race/ethnicity, marital status, education, income, geographical location) Enabling resources (health insurance, access to health services, waiting time, extent of social support) Need factors (perceived health status)	Multiple Logistic Regression by Type of Model Predisposing factors (model 1) Enabling resources (model 2) Need factors (model 3)
No treatment service vs. one or more treatment services (Treatment01)	Predisposing Enabling resources Need factors	Multiple Logistic Regression by Type of Model Predisposing factors (model 1) Enabling resources (model 2) Need factors (model 3)
Total number of drug treatment services (TREATSUM)	Predisposing Enabling resources Need factors	General Linear Model by Type of Model Predisposing factors (model 1) Enabling resources (model 2) Need factors (model 3)

Chapter 4: Results

This chapter presents the analyses of data collected on 20, 447 women representing 122,200,138 women in the United States of America from April 2012-June 2013 in the NESARC-III survey. As stated previously, the purpose of this study was two-fold: (1) to determine the prevalence of Drug Use Disorders (DUDs) and their associated predictors in a national sample of women and (2) to explore the relationships between selected types and number of drug treatment services for DUDs and predisposing factors, enabling resources and need (perceived) factors. The predisposing factors were age, income, education, race, marital status and geographical location. The enabling resources were health insurance, access to health services, waiting time and extent of social support and need factors were perceived need and perceived health status. Selected types of professional and informal (Peer Support) drug treatment services included: 1) treatment from a private professional-private physician, psychiatrist, psychologist, social worker or other professional 2) treatment from an Outpatient Clinic-outreach programs, day or partial patient treatment clinic and 3) treatment in a 12 Step Meeting (Peer Support)-Alcoholics Anonymous, Narcotics Anonymous or Cocaine Anonymous or other 12 Step Meeting. Two overall indicators of having drug treatment services were (1) No treatment services or one or more treatment services in the past 12 months; and (2) total number of different types of treatment services.

This chapter is organized in sections as follows: Section I presents the characteristics of women diagnosed with a DUD and the predictors of DUDs by predisposing factors. Next, Section II presents the characteristics of the women who had

no drug treatment services or had drug treatment services in the last 12 months along with a description of the number of drug treatment services the women utilized. Section III presents the multivariate analyses by the selected type of drug treatment services organized by predisposing factors, enabling resources and need factors. Section IV presents the overall measures of drug treatment services and Section V presents the joint association between the significant predisposing, enabling and need factors with selected types and number of drug treatment services.

The sample size varied by the specific type of analyses in each section. For example, the full sample of 20, 447 women was considered for determining the prevalence of Drug Use Disorders; 6,344 and 524 of the women were considered for those who had DUDs and indicated (yes, no) to having selected drug treatment services within a 12-month period, respectively.

Section I

Sample Characteristics of Women with DUDs

Of the 20, 447 women in the sample, 31% (n=6,344) of the women were diagnosed with a DUD. White women represented 73.9% (n=3,858) of the sample who had DUDs; Black women were 11.3% (n=1321); American Indian/Asian were 4.9% (n=261) and Hispanic women were 9.9% (n=904). The characteristics of these women are reported in Table 4.

The mean age of women who were diagnosed with a DUD was 42.38 (SD =0.287) and the mean total personal income (coded) was 6.80 (SD= 0.086). With regards to education, 9.8% (n=718) did not have formal schooling or less than high school education ; 44.6% (n=2,790) completed high school; 29.1% (n=1,649) had a bachelor's

degree and 16.5% (n=855) had a master's degree or higher. Over 48% (n=2,443) were married or widowed; 9.5% (n=532) lived with someone as if married; 14.5% (n=1154) were divorced; 4.2% (n=358) were separated; and 23.2% (n=1857) were never married. Over 20% (n=984) of the women lived in the Northeast; 22% (n=1409) lived in the Midwest; 33% (n=2237) lived in the South and 24.7% (n=1714) lived in the West.

Table 4: Sample Characteristics of Women with Drug Use Disorders

Predisposing Factors	**Mean**	**SD**	
Age	42.38	6.80	
Income	0.287	0.086	
	Unweighted Count (n)	**Population (in 1,000s) N**	**%**
Education			
No formal schooling/less than high school education	718	3650	9.8
Completed high school	2790	16549	44.6
Bachelor's degree	1649	10785	29.1
Master's degree or higher	855	6121	16.5
Race			
White	3858	28,819	73.9
Black	1321	4,408	11.3
American Indian/Asian	261	1924	4.9
Hispanic	904	3,863	9.9

Table 4 (Continued)

Predisposing Factors	Unweighted Count (n)	Population (in 1,000s) N	%
Marital status			
Married/widowed	2443	18948	48.6
Living with someone as if married	532	3712	9.5
Divorced	1154	5643	14.5
Separated	358	1653	4.2
Never married	1857	9057	23.2
Geographical location			
Northeast	984	7945	20.4
Midwest	1409	8569	22.0
South	2237	12863	33.0
West	1714	9637	24.7

Predictors of Drug Use Disorders among the Sample of Women

The probability of being diagnosed with a DUD was modeled as a function of the predisposing factors-- age, income, education, race, marital status and geographical location. The results of the multiple logistic regression analysis are reported in Table 5. The DUD diagnosis significantly decreased with age (OR=0.973; CI [0.970, 0.976]). Income was also significantly associated with a diagnosis of a DUD (OR=1.025; CI [1.013, 1.037]). With regards to education, women who had a Master's Degree or higher were 1.265 times more likely than women with no formal education/less than high school education to be diagnosed with a DUD (95% CI [1.066, 1.501]). Regarding race, Black

women were significantly less likely than white women to be diagnosed with a DUD (OR=0.649; CI[0.559, 0.753]). Similarly, American Indian/Asian and Hispanic women were significantly less likely than White women to be diagnosed with a DUD (OR=0.367, CI [0.300, 0.449]) (OR=0.375, 95% CI [0.327, 0.430]), respectively. Regarding marital status, women who were living with someone as if married were 2.019 times more likely than married/widowed women to be diagnosed with a DUD (95% CI [1.677, 2.432]). Divorced women (OR=1.707; 95% CI [1.501, 1.942] and Separated women (OR=1.731, 95% CI [1.406, 2.132]) were more likely to be diagnosed with a DUD compared to women who were married/widowed. Regarding geographical location, women who lived in the Midwest were significantly less likely to be diagnosed with a DUD compared to women who live in the Northeast (OR=0.800, 95% CI[0.671, 0.954]). Women who lived in the South were also significantly less likely to be diagnosed with a DUD compared to women in the Northeast (OR=0.707; CI [0.606, 0.823]).

Table 5: Multiple Logistic Regression Analysis of DUDs by Predisposing Factors

Predisposing Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p- value
Age	0.973	0.970	0.976	**<.001**
Income	1.025	1.013	1.037	**<.001**
Education (no formal schooling/less than high school)*				
Completed high school	1.086	0.966	1.222	0.166
Bachelor's degree	1.111	0.971	1.272	0.125
Master's degree or higher	1.265	1.066	1.501	**0.008**
Race (White)*				
Black	0.649	0.559	0.753	**<.001**
American Indian/Asian	0.367	0.300	0.449	**<.001**
Hispanic	0.375	0.327	0.430	**<.001**
Marital status (married and widowed)*				
Living with someone as if married	2.019	1.677	2.432	**<.001**
Divorced	1.707	1.501	1.942	**<.001**
Separated	1.731	1.406	2.132	**<.001**
Never married	1.076	0.940	1.232	0.285
Geographical location (Northeast)*				
Midwest	0.800	0.671	0.954	**0.014**
South	0.707	0.606	0.823	**<.001**
West	1.048	0.905	1.214	0.527

*Note: * indicates Reference Category*

Section II:

Characteristics of the Women Who Had No Drug Treatment Services or Had One or More Drug Treatment Services in the Last 12 Months

Predisposing Factors

The predisposing characteristics of the women who did not have drug treatment services or had drug treatment services in the past 12 months are reported in Table 6. Of the 6,344 women with DUDs, 8.3% (n=524) of the women did not have drug treatment services or had one or more services in the last 12 months. The mean age of the women was 40.63 years (SD =0.67) and the mean total personal (coded) income was 5.68 (SD= 0.20). White women represented 74.6% (n=321) of the sample; Black women were 11.4% (n=110); American Indian/Asian were 4.3% (n=15) and Hispanic women were 9.8% (n=78). With regards to education, 17.3% (n=100) did not have any formal schooling or less than high school education; 51.3% (n=232) completed high school; 23.2% (n=103) had a bachelor's degree and 8.1% (n=35) had a master's degree or higher. Of the women, 35.8% (n=158) were married or widowed; 11.2 % (n=46) lived with someone as if married; 21.3% (n=117) were divorced; 6.2% (n=46) were separated; and 25.5% (n=157) were never married. Over 19% (n=79) of the women lived in the Northeast; 21.1% (n=119) lived in the Midwest; 32.1% (n=175) lived in the South and 27.7% (n=151) lived in the West.

Table 6: Characteristics of Women Who Had No Drug Treatment Services or More Than One Drug Treatment Service in the Past 12 Months by Predisposing Factors

Predisposing Factors	Mean	Std. Dev.	
Age	40.63	5.68	
Income	0.672	0.197	
	Unweighted Count (N)	**Population (in 1000s) N**	**%**
Race			
White	321	2,166	74.6
Black	110	331	11.4
Hispanic	78	283	9.8
American Indian/Asian	15	124	4.3
Education			
No formal schooling/less than high school	100	445	17.3
Completed high school	232	1320	51.3
Bachelor's degree	103	596	23.2
Master's degree or higher	35	208	8.1
Marital Status			
Married/widowed	158	1039	35.8
Living with someone as if married	46	324	11.2
Divorced	117	620	21.3
Separated	46	179	6.2
Never married	157	741	25.5

Table 6 (Continued)

Predisposing Factors	Unweighted Count (N)	Population (in 1000s) N	%
Geographical location			
Northeast	79	556	19.2
Midwest	119	63	21.1
South	175	931	32.1
West	151	8,037	27.7

Enabling Resources

The description of the enabling resources are presented in Table 7. Over 17% (n=64) of the women reported that they wanted to go for drug treatment services but their health insurance did not cover while 10.7% (n=47) reported that they did not know any place to go for help. Almost 6% (n=29) reported that they did not have any treatment because it took too long to get into a drug treatment service. Approximately 22% (n= 84) of the women reported that they were afraid of what family, friends or boss would think if they had treatment.

Table 7: Description of the Women Who Had No Drug Treatment Services or More Than One Drug Treatment Service by Enabling Resources+

Enabling Resources	Unweighted Count (N)	Population (in 1000s) N	%
Wanted to go but health Insurance did not cover			
Yes	64	419	17.2
No	358	2,015	82.8
Didn't know any place to go for help			
Yes	47	260	10.7
No	375	2175	89.3
Had to wait too long to get into a program			
Yes	29	142	5.9
No	393	2292	94.1
Family/friends helped to stop using medicines/drugs			
Yes	33	176	7.3
No	389	2258	92.7
Afraid of what family friends, boss, would think			
Yes	84	525	21.6
No	338	1909	78.4

+ *Subtotals may not add to total because of missing values*

Need Factors

The description of the perceived need and perceived health status are presented in Table 8. Over 37 % (n=156) of the women thought that the problem would get better by itself. Over 23% perceived that the problem was not serious enough to have a drug treatment service and 31% (n=135) wanted to keep using medicines or drugs. Regarding perceived health, 8.9% (n=42) rated their health as excellent, 24.6% (n=127) as very good, 33.5% (n=169) as good, 23.2% (n=128) and 9.9% (n=58) as poor.

Table 8: Description of the Women Who Had No Drug Treatment Services or Had More Than One Drug Treatment Service in the Past 12 Months by Perceived Need and Perceived Health Status

Need Factors	Unweighted Count (N)	Population (in 1000s) (N)	%
Thought problem would get better by itself			
Yes	156	920	37.8
No	266	1515	62.2
Strong enough to handle alone			
Yes	178	946	38.8
No	244	1489	61.2
Didn't think problem was serious enough			
Yes	101	568	23.3
No	321	1866	76.7
Perceived health status			
Excellent	42	258	8.9
Very good	127	713	24.6
Good	169	972	33.5
Fair	128	673	23.2
Poor	58	287	9.9
Wanted to keep using medicine or drugs			
Yes	135	754	31.0
No	287	1680	69.0

[+] *Subtotals may not add to total because of missing values*

Scope of Drug Treatment Services among Women with DUDs in the Past 12 Months

The mean number of services was 0.96 (SD=1.6; R= (0, 9)). Table 9 shows that 56.2% (n=297) did not have any drug treatment service and 43.8% (n=227) had 1 or more drug treatment services in the past 12 months.

Table 9: Number of Drug Treatment Services

Dependent Variable	Unweighted (N)	Population (in 1000s) N	%
No treatment service	297	1631	56.2
1 or more treatment service	227	1273	43.8
Total	524	2904	100

The sum of drug treatment services for the women who had one or more services in the last 12 months are described in Table 10. The mean number of services for these women was 2.09 (SD=0.10). Over 50% (n=110) of the women had one service and 24% (n=55) had two services. The percent for women who had three services was 13.3% (n=26). The percents for four or more services ranged from 0.5% to 4.2%.

Table 10: Total Number of Drug Treatment Services among Women Who Had One or More Services the Past 12 Months

Total Number of Services	Unweighted (N)	Population (in 1000s) N	%
1	110	640	50.3
2	55	305	24.0
3	26	168	13.3
4	8	39	3.1
5	8	27	2.1
6	11	53	4.2
7	4	24	1.9
8	4	7	0.6
9	1	6	0.5

Table 11 describes the specific type of drug treatment services. Of the 524 women who had did not have any treatments or more than one treatment in the last 12 months, over 20% (n=103) of the women went to a private professional for treatment while 79.2% (n=421) did not go to that provider. Regarding treatment at an outpatient clinic, 10.5% (n=62) had treatment in the clinic while 89.5% (n=460) did not. For treatment in a 12 Step Meeting, 23.9% (n=131) had treatment while 76.1% (n=393) did not have that type of drug treatment service. Eight percent or less sought treatment from the other services.

Table 11: Specific Drug Treatment Services

Drug Treatment Service	Unweighted (N)	Population (in 1000s) N	%
Private physician, psychiatrist, psychologist, social worker or any other professional			
Yes	103	604	20.8
No	421	2300	79.2
(Narcotics, Cocaine, Alcoholics Anonymous or any 12-step meeting)			
Yes	131	695	23.9
No	393	2210	76.1
Outpatient clinic, outreach programs, day/partial patient program			
Yes	62	303	10.5
No	460	2598	89.5
Crisis Center			
Yes	9	2876	1.0
No	515	29	99
Employee Assistance Program			
Yes	0	0	0
No	524	2905	100
Clergyman, priest, rabbi, or other religious counselor			
Yes	20	102	3.5
No	504	2803	96.5

Table 11 (Continued)

Drug Treatment Service	Unweighted (N)	Population (in 1000s) N	%
Family services			
Yes	34	182	6.3
No	489	2722	93.7
Drug or alcohol detoxification ward/clinic			
Yes	32	149	5.1
No	492	2756	94.9
In-patient ward, psychiatric/general hospital/community mental health program			
Yes	30	142	4.9
No	494	2763	95.1
Drug or alcohol rehabilitation program			
Yes	45	231	8.0
No	478	2666	92.0
Methadone Maintenance Program			
Yes	18	117	4.0
No	505	2787	96.0
Emergency Room			
Yes	16	76	2.6
No	508	2829	97.4
Halfway house/therapeutic community			
Yes	5	29	1.0
No	519	2876	99.0

Section III:

Selected Drug Treatment Service Models Organized by Predisposing Factors, Enabling Resources, and Need Factors

The probability that a woman would go to a private professional, outpatient clinic and Peer Support Group for drug treatment was modeled as a function of the predisposing factors, enabling resources and need factors.

Private Professional and Predisposing, Enabling Resources, and Need Factors

Predisposing factors. As reported in Table 12, the results of the multiple logistic regression show that there was a significant association between race, marital status and geographical location and having treatment from a private professional. Black women were significantly less likely than white women to have treatment from a private professional (OR=0.353; 95% CI [0.135, 0.927]. Women who were separated were 3.333 times (95% CI [1.138, 9.762]) more likely than married/widowed women to seek treatment from a private professional. Never married women were 2.111 times (95% [CI 1.102, 4.042]) more likely than married and widowed women to have treatment from a private professional. Southern women were significantly less likely than women in the Northeast to have treatment from a private professional (OR=0.362; 95% CI [0.483, 2.685]).

Enabling resources. As shown in Table 13, women wanted to go to treatment but their health insurance did not cover were 2.351 times (95% CI [1.181, 4.678] more likely to have treatment from a private professional. None of the other enabling resources significantly predicted drug treatment service from a private professional.

Need factors. Table 14 shows that women who rated their health as very good were 2.554 times (95% CI [1.001, 6.520]) more likely than women who rated their health as excellent to have treatment from a private professional. Women who rated their health as fair were 3.570 times (95% CI [1.404, 9.073] more likely than women who rated their health as excellent to have treatment from a private professional. Women who rated their health as poor were 4.541 times (95% CI [1.344, 15.345]) more likely to have treatment compared to women who rated their health as excellent. None of the other need variables significantly predicted treatment from a private professional.

Table 12: Multiple Logistic Regression Analysis of Drug Treatment from a Private Professional by Predisposing Factors

Predisposing Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Age	0.994	0.968	1.020	0.624
Income	0.972	0.914	1.035	0.376
Education (No formal schooling/Less than high school)*				
Completed high school	1.585	0.662	3.793	0.297
Bachelor's degree	1.401	0.546	3.594	0.478
Master's degree or higher	1.060	0.305	3.683	0.926
Race (White)*				
Black	0.353	0.135	0.927	**0.035**
American Indian/Asian	2.983	0.478	18.619	0.238
Hispanic	1.577	0.769	3.232	0.210
Marital status (married/ widowed)*				
Living with someone as if married	1.786	0.564	5.654	0.319
Divorced	2.011	0.832	4.860	0.119
Separated	3.333	1.138	9.762	**0.029**
Never married	2.111	1.102	4.042	**0.025**
Geographical location (Northeast)*				
Midwest	1.125	0.483	2.625	0.782
South	0.362	0.170	0.768	**0.009**
West	0.420	0.170	1.040	0.061

Note: * indicates Reference Category

Table 13: Multiple Logistic Regression Analysis of Drug Treatment from a Private Professional by Enabling Resources

Enabling Resources	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Wanted to go but health insurance did not cover	2.351	1.181	4.678	**0.016**
Didn't know any place to go for help	1.215	0.468	3.151	0.682
Had to wait too long to get into a program	1.764	0.524	5.938	0.351
Family/friends helped to stop using medicines/ drugs	2.932	0.820	10.483	0.096
Afraid of what family friends, boss, family would think	0.739	0.411	1.330	0.305

Note: * indicates Reference Category

Table 14: Multiple Logistic Regression Analyses for Drug Treatment from a Private Professional by Need Factors

Need Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Thought problem would get better by itself	0.813	0.383	1.727	0.592
Strong enough to handle alone	0.808	0.449	1.457	0.488
Didn't think problem was serious enough	2.047	0.974	4.301	0.057
Perceived health status				
(Excellent*)				
Very good	2.554	1.001	6.520	**0.050**
Good	2.128	0.833	5.435	0.111
Fair	3.570	1.404	9.073	**0.008**
Poor	4.541	1.344	15.345	**0.016**
Wanted to keep using medicine or drugs	1.653	0.857	3.188	0.131

Note: * indicates Reference Category

Outpatient Clinic and Predisposing, Enabling Resources, and Need Factors

The results of the multiple logistic regression show that none of the predisposing or enabling resources significantly predicted having drug treatment from an outpatient clinic (Tables 15 and 16). On the other hand, with respect to the need factors, Table 17, shows that women who wanted to keep using medicine or drugs were 4.025 times (95%

CI [1.698, 9.541]) more likely to have treatment from an outpatient clinic than their counterparts.

Table 15: Multiple Logistic Regression Analysis of Drug Treatment at an Outpatient Clinic by Predisposing Factors

Predisposing Variables	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Age	0.990	0.960	1.020	0.499
Income	0.932	0.856	1.015	0.103
Education (No formal schooling/less than high school)*				
Completed high school	0.580	0.221	1.523	0.265
Bachelor's degree	0.779	0.194	3.132	0.722
Master's degree or higher	0.669	0.150	2.993	0.595
Race (White)*				
Black	1.232	0.485	3.132	0.657
American Indian/Asian	0.925	0.140	6.103	0.935
Hispanic	1.927	0.849	4.373	0.115
Marital status (married/ widowed)*				
Living with someone as if married	1.790	0.363	8.830	0.470
Divorced	1.589	0.487	5.184	0.438
Separated	2.430	0.660	8.949	0.179
Never married	2.118	0.916	4.899	0.079

Table 15 (Continued)

Predisposing Variables	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Geographical location (Northeast)*				
Midwest	0.558	0.187	1.667	0.292
South	0.396	0.136	1.151	0.088
West	0.497	0.168	1.470	0.203

Note: * indicates Reference Category

Table 16: Multiple Logistic Regression Analysis of Drug Treatment at an Outpatient Clinic by Enabling Resources

Enabling Resources	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Wanted to go but health insurance did not cover	1.511	0.670	3.408	0.312
Didn't know any place to go for help	1.919	0.429	8.574	0.385
Had to wait too long to get into a program	1.364	0.365	5.095	0.637
Family/friends helped to stop using medicines/drugs	1.868	0.317	11.012	0.481
Afraid of what family friends, boss, family would think	1.214	0.633	2.329	0.551

Note: * indicates Reference Category

Table 17: Multiple Logistic Regression Analysis of Drug Treatment at an Outpatient Clinic by Need Factors

Need Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Thought problem would get better by itself	2.365	0.863	6.477	0.092
Strong enough to handle alone	0.623	0.219	1.775	0.367
Didn't think problem was serious enough	0.612	0.285	1.314	0.202
Perceived health status (excellent)*				
Very good	0.478	0.055	4.166	0.530
Good	1.165	0.170	7.980	0.909
Fair	1.691	0.224	12.775	0.628
Poor	1.283	0.199	8.275	0.834
Wanted to keep using medicine or drugs	4.025	1.698	9.541	**0.002**

Note: * indicates Reference Category

Peer Support Group and Predisposing Factors, Enabling Resources and Need Factors

Predisposing factors. The results of the multiple logistic regression (Table 18) showed that women with a higher income were significantly less likely to have treatment in a peer support group (OR=0.941; 95% CI [0.887, 0.998]). Women who were never married were 2.479 times (95% CI [1.333, 4.611]) more likely to have treatment

compared to women who were married or widowed. None of the other predisposing variables significantly predicted treatment in a peer support group.

Enabling resources. As shown in Table 19, women who wanted to go but their health insurance didn't cover were almost twice as likely as their counterparts to have treatment in a peer support group (OR= 1.944 (95% CI [1.130, 3.344]. None of the other enabling variables significantly predicted drug treatment in a peer support group.

Need factors. As shown in Table 20, women who wanted to keep using medicine or drugs were 1.792 times (95% CI [1.096, 2.931]) more likely to have treatment in a peer support group. None of the other need variables significantly predicted drug treatment in a peer support group.

Table 18: Multiple Logistic Regression Analysis of Drug Treatment in a Peer Support Group by Predisposing Factors

Predisposing Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Age	0.997	0.973	1.021	0.793
Income	0.941	0.887	0.998	**0.044**
Education (No formal schooling/less than high school)*				
Completed high school	0.680	0.333	1.392	0.287
Bachelor's degree	0.841	0.347	2.038	0.698
Master's degree or higher	1.019	0.340	3.049	0.973
Race (White)*				
Black	0.855	0.441	1.656	0.638
American Indian/Asian	0.533	0.073	3.682	0.528
Hispanic	0.539	0.243	1.194	0.126
Marital Status (married/ widowed)*				
Living with someone as if married	1.005	0.310	3.255	0.994
Divorced	1.921	0.773	4.770	0.157
Separated	1.439	0.593	3.489	0.416
Never Married	2.479	1.333	4.611	**0.005**
Geographical location (Northeast)*				
Midwest	0.687	0.264	1.792	0.438
South	0.954	0.422	2.157	0.909
West	1.802	0.717	4.529	0.207

*Note: * indicates Reference Category*

Table 19: Multiple Logistic Regression Analysis of Drug Treatment in a Peer Support Group by Enabling Resources

Enabling Resources	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Wanted to go but health insurance did not cover	1.944	1.130	3.344	**0.017**
Didn't know any place to go for help	1.393	0.525	3.693	0.497
Had to wait too long to get into a program	0.573	0.233	1.409	0.219
Friends/family helped to stop using medicines/drugs	0.414	0.086	2.007	0.267
Was afraid of what family, friends, boss would think	0.624	0.352	1.106	0.104

Table 20: Multiple Logistic Regression Analysis of Drug Treatment in a Peer Support Group by Need Factors

Need Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Thought problem would get better by itself	1.311	0.729	2.357	0.358
Strong enough to handle alone	0.672	0.373	1.210	0.180
Didn't think problem was serious enough	0.950	0.550	1.640	0.850
Perceived health status (excellent)*				
Very good	0.901	0.282	2.880	0.858
Good	0.618	0.151	2.526	0.494
Fair	0.822	0.240	2.815	0.750
Poor	0.504	0.117	2.177	0.351
Wanted to keep using medicine or drugs	1.792	1.096	2.931	**0.021**

*Note: * indicates Reference Category*

Section IV:

Predictors of Overall Utilization of Drug Treatment Services

The probability of having drug treatment services vs no drug treatment services was modeled as a function of the predisposing factors, enabling resources and need factors.

One or More Drug Treatment Services vs. No Drug Treatment Services and Predisposing Factors, Enabling Resources, and Need Factors

Predisposing factors. As shown in Table 21, women who were divorced were 2.16 times more likely to have one or more drug treatment services than women who

were married/widowed (95% CI [1.030, 4.530]). Women who were separated were 3.766 times ([95% CI [1.387, 10.223]) more likely than women who were married/widowed to have one or more drug treatment services. Lastly, women who were never married were significantly more likely (OR= 2.028; CI [1.182, 3.482]) than women who were married/widowed.

Table 21: Drug Treatment Services vs. No Drug Treatment Service by Predisposing Factors

Predisposing Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p value
Age	0.998	0.966	1.011	0.302
Income	0.959	0.907	1.014	0.136
Education (No formal schooling/less than high school)*				
Completed high school	1.051	0.521	2.120	0.888
Bachelor's degree	1.088	0.464	2.548	0.844
Master's degree or higher	0.875	0.361	2.121	0.764
Race (White)*				
Black	0.583	0.332	1.024	0.060
American Indian/Asian	1.755	0.439	7.011	0.421
Hispanic	0.768	0.367	1.609	0.480

Table 21 (Continued)

Predisposing Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p value
Marital status (married/ widowed)*				
Living with someone as if married	1.295	0.523	3.209	0.571
Divorced	2.160	1.030	4.530	**0.042**
Separated	3.766	1.387	10.223	**0.010**
Never married	2.028	1.182	3.482	**0.011**
Geographical location (Northeast)*				
Midwest	0.895	0.410	1.953	0.778
South	0.657	0.333	1.296	0.222
West	0.840	0.349	2.026	0.695

*Note: * indicates Reference Category*

Enabling resources. As shown in Table 22, women who "wanted to go but their health insurance didn't cover" were 4.866 times (95% CI [2.110, 11.225]) more likely to have one or more drug treatment service than their counterparts. Women whose "family/friends helped them to stop using drugs" were 3.386 times (95% CI [0.993, 11.542]) more likely to have drug treatment than their counterparts. None of the need factors significantly predicted one or more drug treatments (Table 23).

Table 22: Drug Treatment Services vs. No Drug Treatment Services by Enabling Resources

Enabling Resources	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Wanted to go but health insurance did not cover	4.866	2.110	11.225	**<.001**
Didn't know any place to go for help	1.150	0.413	3.203	0.785
Had to wait too long to get into a program	0.735	0.282	1.913	0.520
Friends/family helped to stop using medicines/drugs	3.386	0.993	11.542	**0.045**
Was afraid of what family, friends, boss would think	0.661	0.376	1.162	0.146

Table 23: Drug Treatment Services vs. No Drug Treatment Services by Need Factors

Need Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Thought problem would get better by itself	1.039	0.518	2.080	0.913
Strong enough to handle alone	0.687	0.360	1.310	0.248
Didn't think problem was serious enough	1.284	0.638	2.584	0.476
Perceived health status (excellent)*				
Very good	1.468	0.504	4.272	0.473
Good	0.609	0.180	2.062	0.417
Fair	1.099	0.347	3.476	0.870
Poor	2.251	0.542	9.351	0.257
Wanted to keep using medicine or drugs	1.341	0.692	2.597	0.377

*Note: * indicates Reference Category*

Total Number of Drug Treatment Services and Predisposing, Enabling Resources, and Need Factors

Predisposing factors. Based on the Complex General linear model analysis (Table 24), higher income women had significantly fewer treatment services (b= -.043, SE= .015, p=0.006) than their counterparts. Divorced women (b=.450, SE=.185), women

who were separated (b=.589, SE=.279) and women who were never married (b=.659, SE=.176) had significantly more treatment services than women who were married or widowed (p values <0.04).

Enabling resources. As shown in Table 25, women who "wanted to go but health insurance didn't cover" had more drug treatment services (b=0.881, SE= 0.160, p<.001). Women who did not know any place to go for help had more drug treatment services than their counterparts (b=1.161, SE=0.442, p =0.012).

Need factors. As shown in Table 26, women who "wanted to keep using medicines or drugs" had more treatment services (b=0.775, SE=0.298, p=0.013) than their counterparts. None of the other need variables significantly predicted the total number of drug treatment services.

Table 24: Total Number of Drug Treatment services by Predisposing Factors

Predisposing Factors	b	SE	p-value
Age	-0.011	0.006	0.069
Income	-0.043	0.015	**0.006**
Education (No formal schooling/less than high school)*			
Completed high school	-0.319	0.230	0.170
Bachelor's degree	-0.269	0.279	0.337
Master's degree or higher	-0.069	0.338	0.838
Race (White)*			
Black	-0.188	0.166	0.262
American Indian/Asian	-0.045	0.462	0.963
Hispanic	-0.106	0.221	0.633
Marital status (married/ widowed)*			
Living with someone as if married	0.274	0.257	0.289
Divorced	0.450	0.185	**0.018**
Separated	0.589	0.279	**0.038**
Never married	0.659	0.176	**<.001**
Geographical location (Northeast)*			
Midwest	-0.088	0.219	0.690
South	-0.181	0.196	0.359
West	0.044	0.236	0.851

*Note: * indicates Reference Category*

Table 25: Total Number of Drug Treatment Services by Enabling Resources

Enabling Resources	b	SE	p-value
Wanted to go but health insurance didn't cover	0.881	0.160	<.001
Didn't know any place to go for help	1.161	0.442	**0.012**
Had to wait too long to get into a program	-0.125	0.336	0.711
Friends/family helped to stop using medicines/drugs	0.569	0.325	0.087
Was afraid of what family, friends, boss would think	-0.267	0.186	0.159

Table 26: Total Number of Drug Treatment Services by Need Factors

Need Factors	b	SE	p-value
Thought problem would get better by itself	0.198	0.236	0.406
Strong enough to handle alone	-0.364	0.244	0.144
Didn't think problem was serious enough	-0.360	0.308	0.249
Perceived health status (excellent)*			
Very good	-0.120	0.313	0.703
Good	0.004	0.360	0.990
Fair	0.637	0.358	0.082
Poor	0.188	0.497	0.706
Wanted to keep using medicine or drugs	0.775	0.298	**0.013**

*Note: * indicates Reference Category*

Summary of Multivariate Analyses

Tables 27-29 presents the summary of selected types of drug treatment services and significant predisposing, enabling and need factors.

Predisposing factors. Of the predisposing factors, drug treatment service from a private professional was significantly associated with race, marital status and geographical location. Drug treatment service from a peer support group was significantly associated with income and marital status. One or more drug treatment services was significantly associated with marital status and lastly, total number of drug

treatment services was significantly associated with income and marital status. None of the predisposing factors were significantly associated with drug treatment service from an outpatient clinic. These results are presented in Table 27.

Table 27: Summary of Selected Types of Drug Treatment Services and Significant Predisposing Factors

Type of Drug Treatment Service	Predisposing Factors					
	Age	*Income*	*Education*	*Race*	*Marital status*	*Geographical location*
Private professional				x	x	x
Outpatient clinic						
Peer support group		x			x	
One or more vs. no drug treatment service					x	
Total number of drug treatment services		x			x	

*Note: "*x*" indicates a significant association*

Enabling resources. Of the enabling resources, drug treatment service from a private professional was significantly associated with "wanted to go but health insurance didn't cover." Drug treatment service in a peer support group was significantly associated with "wanted to go but health insurance didn't cover." One or more drug treatment services was significantly associated with "wanted to go but health insurance didn't cover" and "family/friends helped me to stop using drugs." Total number of drug treatment services was significantly associated with "wanted to go but health insurance didn't cover" and "didn't know any place to go for help." None of the enabling resources

were significantly associated with drug treatment service from an outpatient clinic. These results are presented in Table 28.

Table 28: Summary of Selected Types of Drug Treatment Services and Significant Enabling Resources

Type of Drug Treatment Service	Enabling Resources				
	Wanted to go but health insurance didn't cover	*Didn't know any place to go for help*	*Took too long to get into a program*	*Family friends helped to stop using medicines/drugs*	*Afraid of what family friends would think*
Private professional	x				
Outpatient clinic					
Peer support group	x				
One or more vs. no drug treatment service	x			x	
Total number of drug treatment services	x	x			

Note: "x" indicates a significant association

Need factors. Of the need factors, drug treatment service from a private professional was significantly associated with perceived health status. Drug treatment service from an outpatient clinic was significantly associated with "wanted to keep using medicines/drugs." Drug treatment service in a peer support group was significantly associated with "wanted to keep using medicines/drugs." Total number of drug treatment

services was significantly associated with "wanted to keep using medicines/drugs." None of the need factors were significantly associated with having one or more drug treatment services. These results are presented in Table 29.

Table 29: Summary of Selected Types of Drug Treatment Services and Significant Need Factors

Type of Drug Treatment Service	**Need Factors**				
	Thought problem would get better by itself	*Strong enough to handle alone*	*Didn't think problem was not serious enough*	*Perceived health status*	*Wanted to keep using medicines/ drugs*
Private professional				x	
Outpatient clinic					x
Peer support group					x
One or more vs. none types of treatment service					
Total number of drug treatment services					x

Note: "x" indicates a significant association

Section V:

Joint Association between the Significant Predisposing, Enabling, and Need Factors with Selected Types and Number of Drug Treatments

Logistic Regression Models or General linear model were used to explore the joint associations among the significant predisposing, enabling, and need variables and the types of drug treatment services explored in sections III and IV. A joint logistic regression model was not appropriate for outpatient clinic because "wanted to keep using medicine or drugs" was the only significant variable identified in section III.

Joint Associations for Private Professional

As shown in Table 30, the results of the joint logistic regression model show that the following variables: race, marital status, geographical location and "wanted to go but health insurance didn't cover" remained significant predictors of private professional services.

Black women were significantly less likely than white women to have drug treatment from a private professional (OR= 0.200; 95% CI [0.061, 0.654]). Women who were separated were 6.522 times (95% CI [2.959; 14.141]) more likely than married/widowed women to seek treatment from a private professional. Never married women were 4.148 times (95% [CI 2.010, 8.558]) more likely than married and widowed women to have treatment from a private professional. Southern women were significantly less likely than women in the Northeast to have treatment from a private professional (OR=0.285; 95% CI [0.115, 0.704). Women wanted to go but their health insurance did not cover were 2.066 times (95% CI [1.020; 4.182] more likely to have treatment from a private professional.

Joint Associations for Peer Support Group

The predisposing- marital status and income; enabling- "wanted to go but health insurance didn't cover" and need factors- "wanted to keep using medicines or drugs" found in section III were attenuated for Peer Support Group (Table 31).

Joint Associations for One or More Drug Treatment Services

As shown in Table 32, the results of the joint logistic regression model show that marital status and "wanted to go but health insurance didn't cover" remained significant predictors of one or more drug treatment services.

Women who were divorced were 3.67 times more likely to have one or more drug treatment services, than women who were married/widowed (95% CI [1.368, 9.855]); Women who were separated were 4.467 times ([95% CI [1.610, 12.394]) more likely than women who were married/widowed to have one or more drug treatment services; women who were never married were significantly more likely (OR= 3.651; CI [1.393, 9.567] than women who were married or widowed; women who "wanted to go but their health insurance didn't cover," were 4.020 times (95% CI [1.786, 9.052] more likely to have one or more drug treatment service than their counterparts.

Joint Associations for Total Number of Drug Treatment Services

Table 33 presents the results of the Complex General Linear Model for the total number of drug treatment services. The following variables remained significant predictors of the total number of drug treatment services: Marital Status-Divorced (p=0.006), Never married (p=0.002), "wanted to go but health insurance didn't cover" (p <.001) and "didn't know any place to go for help" (p=0.009).

Table 30: Multiple Logistic Regression of Significant Predisposing, Enabling, and Need Factors and Private Professional

Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Predisposing				
Race (White)*				
Black	0.200	0.061	0.654	**0.009**
Hispanic	0.570	0.186	1.747	0.317
American Indian/Asian	--	--	--	--
Marital Status (married/widowed)*				
Living with someone as if married	0.961	0.181	5.113	0.962
Divorced	2.336	0.802	6.809	0.117
Separated	6.522	3.008	14.141	**0.000**
Never married	4.148	2.010	8.558	**0.000**
Geographical location (Northeast)*				
Midwest	0.419	0.165	1.068	0.068
South	0.285	0.115	0.704	**0.008**
West	0.258	0.103	0.651	**0.005**
Enabling Resources				
Wanted to go but health insurance didn't cover	2.066	1.020	4.182	**0.044**
Need Factors				
Health Status (excellent)*				
Very good	1.475	0.463	4.700	0.502
Good	1.664	0.511	5.414	0.388
Fair	3.159	0.929	10.740	0.065
Poor	3.462	0.883	13.568	0.074

*Note: *Indicates Reference Category*

-- number of cases too small for analysis

Table 31: Multiple Logistic Regression of Significant Predisposing, Enabling and Need Factors and Peer Support Group

Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Predisposing				
Income	0.962	0.884	1.048	0.368
Marital Status (married/widowed)*				
Living with someone as if married	0.473	0.082	2.735	0.395
Divorced	2.446	0.922	6.490	0.071
Separated	0.466	0.134	1.614	0.222
Never married	1.892	0.859	4.169	0.111
Enabling Resources				
Wanted to go but health insurance didn't cover	1.564	0.890	2.747	0.117
Need Factors				
Wanted to keep using medicines or drugs	1.445	0.780	2.679	0.235

*Note: * indicates Reference Category*

Table 32: Multiple Logistic Regression of Significant Predisposing, Enabling, and Need Factors and One or More Treatment Services

Factors	Odds Ratio	Lower 95% CI	Upper 95% CI	p-value
Predisposing				
Marital status (married/widowed)*				
Living with someone as if married	1.283	.324	5.083	0.717
Divorced	3.672	1.368	9.855	**0.011**
Separated	4.467	1.610	12.394	**0.005**
Never married	3.651	1.393	9.567	**0.010**
Enabling Resources				
Wanted to go but health insurance didn't cover	4.020	1.786	9.052	**<.001**
Friends/family helped me to stop using medicines/ drugs	1.881	.503	7.039	0.340

*Note: * indicates Reference Category*

Table 33: Complex General Linear Model of Significant Predisposing, Enabling, and Need Factors and Total Number of Drug Treatment Services

Factors	Estimate	SE	p-value
	Predisposing		
Marital Status (married /widowed)*			
Married/Widowed			
Living with someone as married	0.141	0.349	0.688
Divorced	0.891	0.306	**0.006**
Separated	0.531	0.316	0.099
Never Married	1.003	0.307	**0.002**
Income	-0.033	0.023	0.165
	Enabling Resources		
Wanted to go but health insurance wouldn't cover	0.658	0.176	**<.001**
Didn't know any place to go for help	1.026	0.375	**0.009**
	Need Factors		
Wanted to keep using medicine or drugs	0.005	0.251	0.984

*Note: * indicates Reference Category*

Summary of Multivariate Analyses for the Joint Associations

As shown in Table 34, drug treatment service from a private professional remained significantly associated with race, marital status, geographical location and "wanted to go but health insurance didn't cover." None of the variables remained significantly associated with drug treatment service in a peer support group. One or more

drug treatment services was significantly associated with marital status and "wanted to go but health insurance didn't cover." Total number of drug treatment services was significantly associated with marital status, "wanted to go but health insurance didn't cover," and "didn't know any place to go for help."

Table 34: Summary of Multivariate Analyses for the Joint Associations

Variable	Private Professional	Outpatient Clinic*	Peer Support Group	One or More Drug Treatment Services	Total Number of Drug Treatment Services
Race	x				
Marital status	x			x	x
Geographical location	x				
Wanted to go but health insurance didn't cover	x			x	x
Didn't know any place to go for help					x
Perceived health status					

*Note: *Only one variable was significant in Section III logistic regression mode*

Chapter 5: Summary and Discussion

The purpose of this study was two-fold: (1) to determine the prevalence of Drug Use Disorders (DUDs) and their associated predictors in a national sample of women and (2) to explore the relationships between selected types and number of drug treatment services for DUDs and predisposing factors, enabling resources and need (perceived) factors. This chapter is organized as follows: first a discussion of the significant findings related to the research questions are presented. Next, the study's strengths and limitations are presented. Lastly, the implications, directions for future research and the conclusions are discussed.

Summary of Findings

Research Question 1: What is the 12-month prevalence and predictors of DUDs among the women in the sample? Of the 20, 447 women in the sample, 31% (n=6,344) of the women were diagnosed with a DUD. The DUD diagnosis significantly decreased with age with income levels also being significantly associated with a diagnosis of a DUD. Other significant factors that predicted DUD diagnoses were age, income, education, marital status, geographical location. Several predisposing factors were significantly associated with a drug use disorder; these include age, education and race. Regarding race, Black women were significantly less likely than white women to be diagnosed with a DUD. Similar researchers found that Black and Hispanic women compared to White women had lower service utilization and therefore lack of service engagement reduces the likelihood of receiving a drug use disorder diagnosis (Zamore, Mulia, Borges, & Greenfield, 2009). Black women with mental health or substance use

issues are less likely than white women to seek mental health or substance use services (Borum, 2012).

Research Question 2: What are the predisposing factors (age, race, marital status, education, geographical location and income) associated with selected types and number of drug treatment services? Significant multivariate associations varied by the type of drug treatment service and overall utilization of drug treatment services. Multivariate analyses supported the research hypothesis that, marital status and geographical location were significant predictors of treatment from a private professional. Marital status was significant across private professional, peer support group, having one or more treatment services and total number of treatment services. Race and geographical location significantly associated with drug treatment service from a private professional. Income was significantly associated with drug treatment service from a peer support group and total number of drug treatment services.

Research Question 3: What are the enabling resources (health insurance, access to health services, waiting time, extent of social support) and selected types and number of drug treatment services? The third research question considered "the logistical aspects of obtaining care that includes personal/family, community characteristics, genetic conditions and psychological characteristics" (Andersen, 1995). These factors may negatively impact a consumer's access to or utilization of health services (Kirby, 2008). Interestingly, of the enabling resources, "wanted to go but health insurance didn't cover" was significant across private professional, peer support group, one or more treatment services and total number of treatment services. This may be that the barriers to treatment utilization in the NESARC-III lacks validity. Due to the fact that several data sources are

available that employed a similar instrument, the cross validation of this measure across several data sets could be a feasible topic for future studies. Health insurance being a barrier for utilizing the service but being significantly associated with seeking treatment can be attributed to the woman covering the cost of the treatment out of pocket.

Utilizing, one or more drug treatment services was significantly associated with "family/friends helped me to stop using drugs" and total number of drug treatment services was significantly associated with "didn't know any place to go for help," which explains the multiple treatment attempts experienced by women as research indicates that there are many determinants that influence whether or not women use professional and/or informal treatment services (Brady & Ashley, 2005).

Research Question 4: What are the need factors (perceived) associated with selected types and number of drug treatment services? Perceived health status was significantly associated with seeking treatment from a private professional. Wanting to keep using medicines or drugs were significantly associated with drug treatment from an outpatient clinic and peer support group and total number of drug treatment services. It could be assumed that the woman received treatment from the clinic but was not ready to abstain from the substance as can be explained by the Stages of Change Model (Prochaska & DiClemente, 1983).

Research Question 5: What is the joint association between the selected predisposing factors, enabling resources and need factors with selected types and number of drug treatment services? The fifth research question considered whether these associations found in questions 2 through 4 would remain when the joint effects of predisposing factors, enabling resources; need factors were taken into account. Results

showed that significant relationships found between both drug treatment service and private professional and the following factors: marital status, race, geographical location remained significant. Marital status and health insurance were significant predictors total number of drug treatment services. White, black and Hispanic women were equally likely to have drug treatment from a private professional.

Overall, the results of this study show that "wanted to go but health insurance didn't cover," "not knowing where to go for help" and "family and friends helped me to stop using medicines/drugs" are characteristics that increased the likelihood of using professional and informal drug treatment services and overall utilization of different treatment services. These findings are inconsistent with previous studies that indicate that psychological, social and structural barriers impact women's utilization of drug use treatment which accounts for low drug treatment utilization in the United States (Curran, Ounpraseuth, & Small, 2011; Taylor, 2010; Stone, 2015). Therefore, it was expected that the above factors would reduce the likelihood of having drug treatment services.

Limitations

The current research study has several limitations. The study's limitations are largely due to its reliance on secondary data. This is a cross sectional study and predisposing, enabling and need factors and causality of health services cannot be established. The literature highlights that women with substance use problems are not homogenous and that there are important within group differences by age, ethnicity, sexual orientation, culture, religious orientation, and parental status that influence treatment utilization (Grella, 2007; Parthasarathy, Mertens, Moore, & Weisner, 2003). However, this study could not examine within group differences as the respondent pool

for DUD disorder diagnoses was small in size and some variables could not be included in the analysis.

These results reflect the aggregation of drug specific use disorders into diagnoses of any 12 month DUD whereas sociodemographic characteristics, patterns of treatment and help seeking may differ by drug. Therefore, epidemiology of DUDs associated with several specific drugs is needed (Grant, Saha, Ruan, & Goldstein, 2016). Also, most of the analyses in this study were based on self-report and as such it is difficult to determine how accurately the perception data reflects the actual quality of drug treatment services in the United States.

Implications of the Study for Social Work Practice and Policy

Misuse of psychotherapeutic drugs is a significant behavioral and public health problem (Angelotta et al., 2016) with previous research having shown that inequalities in having insurance contribute to disparities in Substance Use Disorders treatment with the literature recommending that further research is necessary to investigate disparities within systems where lack of insurance is not a barrier to care (Satre, Campbell, Gordon, & Weisner, 2010).

The implications of this study are far reaching. Thompson, Goodman & Kwate (2016) indicated that no empirical study has examined the relationship between racial discrimination, racial socialization and behaviors that influence substance use. Therefore, it is assumed that with greater knowledge of the relationship between race and utilization of health services for substance use among women, will lead to a better understanding of health disparities among women's mental health needs, access to treatment and health outcomes.

At the policy level, social work advocates for access to mental health and substance use for low income women may find more partners at the policy level by drawing attention to the low levels of psychiatric treatment use among all women in the United States (Rosen, Warner, & Tolman, 2006). There is a need to strengthen the financing of substance use treatment services to make effective treatment more widely available by combining mental health and substance use treatment service with other supports. This study of racial differences in treatment utilization provided an approach to the multifaceted ecological determinants related to seeking treatment for problematic substance use among women.

Gender specific interventions is a significant public health issue. However, to develop gender specific interventions, there must be an understanding of the specific factors that serve as determinants of substance use treatment utilization among all women. Examining the relationship among predisposing factors, enabling resources and need factors that are responsible for treatment utilization is a first step. While limited research exists on the direct aspect of each path, much more is needed. A better understanding on the specific factors related to accessing and adhering to treatment would encourage researchers and policy makers to address the problems with substance use treatment centers not providing culturally appropriate interventions for women. In particular, substance use related disorders should be addressed by a comprehensive treatment approach rather than the criminalization of substance use. Gender responsive programs should consider the needs of women in aspects of their design and delivery.

Recommendations for Future Research

Future research should include the need for gender specific treatment/interventions and the need for multidisciplinary interventions aimed at improving service delivery, access and adherence for women. Multidisciplinary interventions can mitigate poor health outcomes and focus on the unique experiences of women. Practitioners should screen and refer for specific socioeconomic needs and comprehensive policy changes are needed for affordable and accessible healthcare. Based on these findings, studies should focus on the multidimensional patterns of adherence, identifying the barriers and promoters of adherence and investigating treatment adherence strategies and interventions.

Since one of the objectives of this research was to address gaps in the literature on women's perception of treatment needs, structural barriers and extent of social support associated with their utilization of selected types and number of drug treatment services, findings from this study will help social workers and policymakers understand the nature of the problem and provide better solutions. Special attention is required for future research to address the unique needs of women as very little is known about why there are gender and racial/ethnic differences in drug use treatment services utilization.

Conclusion

In general, the significant findings in this study were dependent upon (1) the particular study question, (2) the type of treatment services- professional, informal (peer support), no service, one or more services, or total number of services; (3) the variables under consideration that were grouped under the following rubrics: predisposing, enabling resources, or need factors and (4) whether the factors were considered

separately or jointly. Questions that were associated with (1) the prevalence of Drug Use Disorders (DUD) and its associated predictors in a national sample of women and (2) the relationships between selected types and number of treatment services for DUDs and predisposing factors, enabling resources and need factors were explored. Factors that were considered separately presented different profiles dependent upon the type of treatment services. Within specific services, significant relationships found in the analysis stratified by the type of factor remained after considering the joint associations of all three types of factors. For example, the predisposing factors marital status, geographic area and race were significantly associated with using professional services whether these predisposing factors were considered separately or jointly with the enabling resources and need factors. More specifically, Black\African and Hispanic women were significantly less likely than White women to access these services. On the other hand, the significant predisposing characteristics that were associated with informal (peer support) treatment services in the stratified analyses were attenuated when they were considered jointly with the enabling resources and need factors. Data collected in the past 5-7 years indicate that the number of women requiring substance use treatment is expected to increase with more women presenting with drug use disorders. It is important to determine how to best meet the needs of these women to ensure better health outcomes.

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