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Predictors of Treatment Outcomes of Elderly Substance Abusers in Treatment Facilites

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M.S., Walden University, 2009

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Dissertation Submitted in Partial Fulfillment

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Abstract

Research in the late 1990s and early 2000s projected that the number of people aged 50 and older who needed treatment for illicit drug use and abuse of prescribed medications to increase from approximately 1.7 million in 2001 to approximately 4.4 million in 2020. The purpose of this study was to examine how gender, marital status, employment status, and primary referral source predicted treatment outcomes with this older population. Of interest was how these predictions could better prepare treatment providers to treat individuals born between 1946 and 1964 who are addicted to substances. This quantitative study used an archival database, the Treatment Episode Dataset-Discharges (TEDS-D) from the Substance Abuse and Mental Health Services Administration. A discriminant function analysis revealed significance in the predictor variables with treatment outcomes. The second research question asked whether the criminal justice system/legal system alone, as the primary referral source, could predict treatment outcomes. A chi-square test revealed the primary referral source had a significant impact on treatment outcomes. These findings have implications for positive social change by empowering practitioners working with the older adult generation in substance abuse treatment to recognize the changing roles of retirement. These findings may, in turn, help those adults cope with physical health problems and loss of mobility, foster social supports within the community, and address the mental health problems among this population.

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Dedication

There are many people that I would like to thank for their support and encouragement throughout the years and mostly for encouraging me to finish this dissertation. To my husband David, and my children Ashley, Thomas, Trey, and Teryn for all the love and patience you have all shown me through this challenging and stressful time. Each of you have made sacrifices so I could complete this task. I am truly grateful for and appreciate every sacrifice and every sigh made by all of you. I so appreciate each and every one of you more than words could ever express. And to my parents Jerry and Wilma Steinberger who believed in me from the start and through every trial and tribulation I created along the way. You have given me opportunities to acquire what life has to offer, thank you!

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Chapter 1: Introduction

Background of the Study

Most research on substance abuse has focused on adolescents and young adults because they tend to use substances at a higher rate than older adults aged 50 and older (Outlaw, Marquart, Roy, Luellen, Moran, Willis, & Doub, 2012). With the onset of the baby boomer generation there are concerns with their experiences with drugs and alcohol, and their environments (Outlaw et al. 2012). Some of these experiences include Woodstock, the Vietnam War, and the Civil Rights Movement (Outlaw et al. 2012). According to Cooper (2012), there is comorbidity among older adult alcohol abusers and prescription drug abuse Cooper indicated that there has been an increase in substance abuse, and together with psychological and medical disorders, this presents several challenges to treatment modalities and treatment systems.

According to Choi and DiNitto (2013), research on substance abuse among adults, age 50 and older, has focused predominantly on the abuse of alcohol. They have also written that substance abuse treatment is successful with older females who remain in treatment for longer periods of time, and had better treatment outcomes.

According to Kalapatapu and Sullivan (2010), another area of clinical concern with substance disorders is the abuse of prescription drugs. They indicated that the use of multiple medications may be common among older adults' especially, those with both mental and physical disorders. As prescription drugs such as stimulants, opioids, and benzodiazepines continue to be prescribed it is likely that older adults using these drugs and experiencing substance abuse disorder will also increase.

According to the Diagnostic and Statistical Manual Treatment Revised - IV (DSM-IV-TR) (2000) substance abuse disorders, including both substances and prescription drug misuse, are prevalent in older adults and often lead to significant neuropsychiatric and medical morbidity (Kalapatapu & Sullivan, 2010). Yet often these disorders are inadequately assessed and often go undetected, or denied by the older adult, leading to more significant problems to include misuse and addictions along with comorbidity with mental health and physical health (Kalapatapu & Sullivan, 2010).

Problem Statement

Families have been instrumental in placing their children and elder loved ones in rehabilitation centers, but often the families do not take the time to look at the chances of the abuser actually receiving help. There could be indicators that would forecast the probability of an abuser coming out of an institution clean and sober so that there is no waste of resources and time for the individual abusing substances or the abusers family and friends. Examples include previous success stories, specialized centers dealing only with a particular addiction, treatment methods, and the willingness of the abuser to change. SAMHSA (2014) indicated that there are a number of older adults in substance abuse treatment and that few programs are designed specifically for individuals age 50 or older. SAMHSA also indicated drug and alcohol abuse is underreported, underdiagnosed in the older generations and that they are less likely to seek professional help. Indicating a higher percentage of older adults being referred by the criminal justice system. According to Arndt, Clayton, and Schultz (2011) research has predicted that the number

of older adults needing substance abuse treatment is increasing at a rate of 250% and by 2020, 4.4 million older adults will need help.

As noted above, individuals born between 1946 and 1964 have begun to retire and are seeing changes in their roles (Arndt et al. 2011). They can be adversely affected by the development of mental health concerns, such as anxiety and depression; medical conditions that can be chronic; financial difficulties; loss of a support system; or even the inability to care for themselves (Arndt et al. 2011). These adverse effects can include the abuse of prescribed opiate medications, increased alcohol consumption, and the use of illegal substances. One of the key indicators of addiction in older adults is loss of their social supports such as spouses, significant others, and family members, and in turn isolating themselves out of the view of those supports they do have, denying the addiction and the treatment needed and often can go unnoticed within in the community (Morelli, 2015). Morelli indicated the challenges working with older adults in treatment, prior research has not explored basic predictors of success in treatment programs such as gender, education level, marital status, employment status, and referral source.

Purpose of the Study

This research is justified substantively by:

- The purpose of this study to obtain information that would be useful now and in the future to help determine (a) the appropriate approach to take in treating older adults with a drug abuse problem and (b) proper treatment planning.
- This information will be placed in the public domain so that it can be accessed by anyone in need.

- The study is expected to inform future researchers.
- The research will make recommendations to improve treatment facilities who serve an older adults aged 50 and older.

Nature of the Study

The research was carried out using the Treatment Episode Data Set– - Discharge (TEDS-D), 2011. This data constitutes a quantitative collection based on recorded interviews and observations of the Substance Abuse and Mental Health Services Administration (SAMHSA). It involved taking these data from the records of the visit to the rehabilitation centers. The recorded data set is also based on the individuals' behaviors during their treatment program. This is according to the information taken and quantified for those in recovery and attending forums and consultations on rehabilitation, as outlined in the TEDS-D 2011. The data was collected from similar points in various states in the United States using the available media, stored and analyzed to draw conclusions appropriately. The research was goal oriented as it focused on determining key quantitative issues that are essential to predict the outcome of an addiction treatment procedure with older adults referred by the criminal justice system/legal system.

The predictors of treatment outcome noted are gender, marital status, employment status, and referral source. The sample of interest were those individuals, aged 50 or older at discharge of treatment, and who had 16 or more years of education. The TEDS-D dataset contains all of these variables from individuals discharged from treatment facilities throughout the United States in 2011.

Research Questions and Hypotheses

RQ1. Does gender, marital status, employment status, and primary referral source significantly differentiate among older adults who will leave treatment against professional advice of substance abuse treatment and those who will complete.

$H1_0$: Gender, marital status, employment status, and referral source will not significantly differentiate among older adults who will leave treatment against professional advice and those who will complete substance abuse treatment.

$H1_1$: Gender, employment status, marital status, and referral source can significantly differentiate among older adults who will leave against professional advice from treatment facilities and those who will complete substance abuse treatment.

RQ2. What is the impact of the referral source alone on whether an older adult substance abuser completes or does not complete treatment?

$H2_0$: Referral sources from the legal/judicial system will not predict the likelihood of treatment dropout (leaving against professional advice) in substance abuse treatment facilities.

$H2_1$: Referral sources from the legal/judicial system will predict the likelihood of treatment dropout (leaving against professional advice) in substance abuse treatment facilities.

Theoretical Base

Substance abuse is a vital issue in the world today that can affect anyone. It is for this reason that this study is justified and easily supported. The United States Department

of Health and Human Services (2012) indicated the amount of money and resources families have spent on treatment facilities without any concrete results, leading to the loss of faith in these institutions. Thus arose the need to research the predictors of treatment outcome, that money and time is not wasted when taking family members to long-term, residential substance abuse treatment centers. A major theory behind substance abuse is that of the high rate of co-occurrence of substance abuse disorders and mental health disorders. Brady and Sinha (2005) indicated an overarching issues with these two disorders and [the need for?] a better understanding of the molecular biology, the neurotransmitter systems, and neural circuity involved with substance abuse and psychiatric disorders. Brady and Sinha also indicated that several theories have been proposed to explain the high co-occurrence and the complexity of certain disorders and certain psychiatric medications that are used to cope with mental illness.

Definition of Terms

Co-Occurring Disorder: This disorder in the past was known as dual diagnosis or dual disorder. More presently it is referred to as co-occurring which indicates the presence of two or more disorders an individual is encountering at the same time. For example, a person may suffer substance abuse as well as panic disorder (Etheridge, Hubbard, Anderson, Craddock, & Flynn, 1997).

Detoxification: Also referred to as detox. It is the process of removing toxic substances from the body. It is also a medical treatment for substances abusers to provide supportive care in the administration of medications (Nocon, Berge, Astals, Martin-Santos & Torrens, 2007).

Long -Term Residential Facility: Require individuals to stay in a controlled setting for 90 days or longer, and are often designed to serve individuals who have not been successful with other options or past treatment services (Greenfield, Burgdorf, Chen, Porowski, Roberts, & Herrell, 2004).

Recovery: A process of change through which individuals improve their health and wellness, practice harm reduction, engage in a self-directed life using supportive services, strive to reach life satisfaction without substance use, and live life to the fullest potential (Herwood, Podgett, Smith, & Tiderington, 2012).

Rehabilitation: to assist a drug and/or alcohol user back to a normal level of functioning, decrease in negative behaviors, and achieving wellness and personal growth (Moran & Nemec, 2013).

Substance Abuse: overindulgence of an addictive substance such as alcohol, street drugs, or prescribed medications (Wittchen et al., 2008).

Substance Addiction: Addiction is characterized by the inability to abstain from the addictive source, causes cognitive impairment and impairment of behavioral control. It can create tolerance as well as cravings. Addiction often involves cycles of relapse, compulsive use, and persistent desire and can result in disability or premature death (Spriggs, 2003).

Treatment Compliance: Individuals who participate in treatment, but are not able to complete the program due to maximum gain with no real insight into their risk factors (National Institute on Drug Abuse, 2009).

Treatment Completion: Individuals who fully participate in treatment, complete

all treatment assignments, and show insight into their risk factors. These individuals also demonstrate pro social behaviors and assist others with their treatment (National Institute on Drug Abuse, 2009).

Treatment Failure: Individuals who do not comply with treatment, show no insight into their behaviors or risk factors and have problematic behaviors that disrupt other's treatment.

Limitations

Though based on collected data, there are other possible points of weaknesses that might have affected the accuracy of the results established from the study. These include:

- The method of analysis used might not have been effective for the quantitative type of data that was being analysed.
- Human error during data collection.
- Biasness in the collection and analysis of data by the personnel.

Delimitations

This refers to the scope of the study; the entire area that the study encompasses the use or application of the result. A study can be applied only to the field it was done in. This study sought to predict treatment outcomes, and it is bound to the field of psychology. In terms of application, it will be of importance to any field related to psychology.

Significance of the Study

Due to the increase in baby boomer population and the number of older adults using prescribed medications, as well as becoming addicted to the medications and

seeking illegal substances and alcohol, prior research has not explored basic predictors of success in treatment programs such as gender, education level, marital status, employment status, and referral source. Further studying elderly substance abuse could provide better interventions and strategies for this population, and help prevent further substance abuse with the elderly. This study is expected to add important information for professionals in psychology, for substance abuse treatment facilities and it will promote positive social change for families and individuals faced with addiction problems.

Summary and Transition

This chapter provided an overview of the study and a preview of the approach used in the study. Studying elderly substance abuse issues more in depth and using the findings could promote how clinicians use strategies and interventions in treatment and how communities in general can become more effective in preventing elderly substance abuse. This is a build-up to the subsequent chapters that will deal with the sections introduced in finer detail.

Chapter 2 covers the literature review, which serves as the main precedent to this study or works previously done in this field. For the literature review the EBSCO and SAGE Databases were used from the Walden University library. Chapter 3 introduces the research design of this study and the methodology that was used. Chapter 4 provides the results of the study and Chapter 5 discusses the interpretations of the results.

Chapter 2: Literature Review

Introduction

The previous chapter set the stage for this study by giving an overview of the problem being studied, possible solutions, defined terms, and the research questions and hypothesis. It was important to provide this background information so that there would be a clear understanding of the topic and the path it took. In this chapter, the goal was to find current literature on the topic and synthesize it, and apply it to the study. The literature review was an important step in the study because it identifies studies that can help focus the rest of the process. While there is a great deal of literature available on this topic, it is expected that this study will make a contribution for three reasons, as explained below.

First and foremost, the literature can become stale after a period of time due to the frequent change of policies in the justice system and with drug abuse rehabilitation as a whole. They tend to often work hand-in-hand on various issues, and drug treatment programs are a prime example of this partnership. As adults fifty and over get older, they face new challenges with facing and recovering from their addiction. Arndt, Clayton and Schultz (2011) argued that as the trends change in the area of substance abuse and penal/rehabilitative efforts are revamped to fit society's current demands, studies need to be conducted so the proper changes can be made to fit current society needs. The problem of substance abuse amongst older adults remains the same problem on the surface there are a number of elements that do change with the passage of time which requires the system to be revamped (Karel, Gatz, & Smyer, 2012).

Second, the criminal justice system continues to waffle back and forth between court-mandated treatments for patients, including older adults. This sends mixed messages. For the betterment of the substance abuse and mental health system as a whole, policy makers must have fresh information so they can make a decision whether or not they will utilize court-ordered drug treatment, specifically for those drug offenders over the age of 50 (Maschi, Dennis, Gibson, MacMillan, Sternberg, & Hom, 2011). With this type of stability in place, the programs can have some stability on their end which will make treatment for older adults easier to complete. Maschi et al. (2011) discussed the fact that the current literature indicates that older adults crave stability; therefore, to be useful any type of mandatory treatment program must be solid; it must not be one to repeatedly change policies and procedures. This is a concern that needs to be further examined and dealt with if there is any hope to resolving the issues that lead to older adults dropping out of treatment programs.

Third, it is suggested by the current literature that many older adults who drift in and out of substance abuse treatment do this because they know they have nowhere else to go. In other words, many of the members of the targeted population are homeless and view treatment centers as a place to sleep and get a hot meal (Herwood, Padgett, Smith & Tinderington, 2012). This is also echoed in some of the related literature focused on reasons for recidivism in older adults; jail is looked upon as a temporary shelter where they can be fed and housed. There is an overall lack of availability to ancillary resources to help older adults once treatment is completed; they have a difficult time of maintaining life necessities such as shelter, food and other needs. It is a concern that should be

addressed by the system in the patient's aftercare plan. This study will also correlate this trend in the topic presented because homelessness, crime and drug abuse do go together.

This literature review will discuss these three points, how they relate to the study, and how they will be specifically addressed. As previously stated, the existing literature is extensive, but the majority has not been validated for several years. It is time to give a fresh point of view on the topic and determine what changes need to be made in order to decrease the number of elderly patients who drop out of drug treatment programs. Arndt et al. (2011) argue that with the trends over the past six years pointing to an increase in the dropout rate in drug treatment programs, there is a need to make reforms to help those who are age 50 and older. This study intends to shed light on the issues faced by this targeted segment of the population and offer suggestions on how the dropout rates can be reduced.

New Generation, New Challenges

One of the challenges with attempting to determine what factors will decrease dropout rates amongst older adults from drug treatment programs is the fact that with each generation of older adults that are in the system, new challenges face them and have not been properly addressed. Briggs, Magnus, Lassiter, Patterson and Smith (2011) wrote that it is important for scholars, mental health counsleors and other interested parties should take into consideration some of the factors that face this new generation of older adults who suffer from substance abuse issues. While some experts might disagree that there are different issues that face this new population of older adults over the age of 50 who are being ordered to complete substance abuse treatment by the court, this study will

show there are issues that are unique to this specific generation of older adults. Some of the new factors that should be taken into consideration and addressed below are homelessness, public showcase of the drug problem, economic considerations and gender differences. These issues have all changed over the last decade, which demands further study on this topic.

Drug abuse is the prevailing issue that has caused the majority of placements in substance abuse treatment facilities all over the world (Wulffson, 2012). In recent years a greater concern and interest in substance use and abuse with the elderly developed a study conducted by the U. S. government, in January 2008 through the Justice Policy Institute (JPI) together with the National Institute on Drug Abuse is based on material misuse management and public safety. The study discovered that first world countries face a major drug problem as compared to the developing ones. In the United States for example, the number of drug abusers outweighs every other country in the world as well as those in prison for drug offenses (JPI, 2008). This is a new challenge that has to be faced head-on, analyzed and revised so these numbers can decrease.

According to the National Survey on Drug Use and Health from the National Center for Health Statistics (2013) "illicit drug use among adults aged 50 to 64, increased from 2.7 % in 2002 to 6.0 % in 2013. For adults aged 50 to 54, the rate increased from 3.4 % in 2002 to 7.9 % in 2013. Among those aged 55 to 59, the rate of current illicit drug use increased from 1.9 % in 2002 to 5.7 % in 2013. Among those aged 60 to 64, the rate of current illicit drug use increased from 1.1 percent in 2003 and 2004 to 3.9 percent in 2013." These numbers are extremely concerning not only to the legal system, but also

to the mental health and substance abuse counseling profession. It suggests an overall failure in the system, and even more disturbing the system has failed the older generation. This is a time in life where comfort, stability and compassion should be given to the older generation, even those who suffer from substance abuse problems.

It was previously mentioned that the legal system often pairs with the mental health system to address issues such as substance abuse in order to reduce the number of offenders serving jail time for minor offenses. Instead, they are offered the opportunity to complete mandatory treatment so they can move on with their lives without having a prison record. Hypothetically this should be a win-win situation. According to the Sentencing Project (2012) the number of people incarcerated in U.S. states prisons for drug offenses at the time of this study had exceeded the 2 million mark, which is the equivalent of one-quarter of people imprisoned in the U.S. by the Department of Corrections (DOC). This study found that over 6.8 million Americans were faced with drug abuse problems, and as such, need the necessary help. It was evident that the number of those in prison kept a steady rising trend, with most of those charged being drug offenders. This was concerning, and thus the government, in conjunction with the National Institute on drug abuse, developed treatment facilities, which are now the preferred option for those with drug problems as opposed to correctional facilities such as state prisons.

However, with that said, it is apparent that the system overall does not have immediate answers to the problem described in this study. The currently available literature addresses these problems using a point of view that is between 10–15 years old.

While some of that information is still valid, there needs to be some updates to deal with the identified issues that are unique to this new generation of older adults. In the meantime, there is a new generation of older adults that are now facing substance abuse issues. The baby boomer generation is the new generation of older adults age 50 and above, so their values and ideas on drug use must be taken into consideration if there is hope to revamp the currently failing system (Harvard Medical School, 2014). While treatment programs are the preferred option to having drug addicts incarcerated, there are still issues which were previously mentioned that need to be addressed in order to make this option a viably successful one in the legal system. Following is an examination of these issues and how the current literature suggests they be dealt with. There will be some references to the terms defined in chapter one as well as some exploration on the hypotheses previously mentioned.

The Homelessness Issue

Many older adults, through a variety of circumstances, have lost their homes. It could be a result of their substance abuse or a variety of other factors through the recent economic crisis. According to Herwood et al. (2012), homelessness plays a factor in the changing face of drug treatment programs. Similar to how prisons are used by older adults for temporary shelter, drug treatment centers are also looked upon by many of the patients as a temporary means to have a warm place to sleep and regular meals. However, as shown in a study conducted by Herwood et al. (2012), the patients do not take the program seriously and end up going back to the streets. This is the only life many of these patients know, and it is up to the treatment center to make changes in their program to

motivate older patients to stop viewing the treatment program as a temporary means of providing shelter for themselves and take the treatment aspect seriously. It is a problem that needs to be addressed if there is any hope to reducing the dropout rates of these older adults from drug treatment programs.

According to Harris, Humphreys, Bowe, Tiet, and Finney (2010), older adults who seek treatment, whether it is voluntary or ordered by the court, need to have a follow-up plan in place so their chances of dropout and relapse are decreased. While it is true that all recovering addicts need stability, it is especially vital that older adults have this in their lives. Some patients age 50 and older have stated that their relapses have been largely due to a lack of knowledge regarding their addiction, and the lack of support in obtaining other services such as assistance with housing, food, and other basic necessities of life (Maschi et al., 2011). It is a commonly made statement by those interviewed by those who have studied the outcomes of treatment programs with the older population. With this in mind, it would make sense for the legal and rehabilitation system to put a comprehensive plan into place for older adults who need aftercare and assistance with maintaining the basic life necessities. This is an issue that needs to be explored in-depth during the course of the study.

Public Showcase of the Drug Problem

Another issue with older adults dropping out of court mandated drug programs is the amount of public scrutiny that is given to those who receive a mandatory treatment center stay than those who serve time in jail for minor drug offenses. This is a problem that plagues many older adults in treatment programs because of the social stigma

attached with drug use and the humiliation of having to be sent to treatment (Wu & Blazer, 2011). It is understandable that an older adult who has lived through many different life experiences will not want to admit he or she has a substance abuse problem, but adds on the shame of having to go to court and be forced to go through drug rehabilitation is extremely humiliating for these individuals They question what type of example they are setting for the younger members of their family and how they allowed themselves to get so far into a hole they might not think they can get out of.

Additionally, public opinion about court-mandated drug treatment versus jail time needs to be changed. Rosen et al. (2011) state that the court of public opinion can have a far greater effect on those in the treatment centers than anything else. The reason for this is many times family members who have been involved with the long-term addiction have given up hope on their loved ones and do not have faith in the court-mandated treatment. When family members and friends give up on the patient, it has a significant effect on them, and it usually is negative (Rosen et al., 2011). This contributes to the unfortunate dropout of many older adults from treatment programs. They feel as though the scrutiny from family, friends, and the public in general is not worth the humiliation and will drop out of treatment (Harris et al. 2010). There is a great deal of work that needs to be done in this area, and a solution will not present itself overnight. This will take time and a great deal of effort to change public perception.

Economic Considerations

There are economic considerations that fall on both sides of this issue. Not only do the costs need to be weighed for the legal system, but they also need to be considered

for those who are sentenced to drug rehabilitation. According to Williams et al. (2012), there are cost considerations for older adults who are sent to drug treatment programs. Not only are there costs associated with the actual rehabilitation process, but there are also costs associated with the ancillary health problems older adults have such as hypertension and other age-related illnesses. The system has to be financially prepared to deal with the costs associated with the patient as a whole, not just with the rehabilitation costs associated with these types of patients. Wulffson (2012) describes the process of detoxification as one that is medically based where the patient's body suffers physical trauma while the initial withdrawal process takes place. This can include tremors, physical sickness, vomiting, hallucinations and other related symptoms. It costs money to have medical staff available for monitoring patients going through initial detox, but these professionals also need to be made aware of any physical ailments the patients suffer from aside from the actual substance abuse.

Once detoxification is under control, the older patients still need to have access to medical staff because of their unrelated physical conditions (Herwood et al., 2012). This is one of many considerations that need to be given to older adults in these mandatory drug treatment programs; regardless of gender or other considerations these patients deserve to have all services at their disposal to address all of their concerns (Grella & Lovinger, 2012). Medical care is something that is equally as vital to the older patient as having the other basic necessities of life available to them upon completion of their initial treatment program. As it was previously discussed in other sections of this literature review, one of the biggest failures of these treatment programs is the fact that they do not

have any sort of aftercare or in-care support to address the various needs of the older adults in treatment. The system has to do a better job of meeting the needs of this section of the patient population.

Gender Differences

Grella and Lovinger (2012) have conducted a study identifying the major differences between male and female older adults who attend drug rehabilitation, voluntarily and court-ordered. What they have discovered is there are few differences, but some are actually quite profound. For example, female patients age 50 and older seem to have a better support system in place for them, while male patients seem to have very little support from family and friends (Grella & Lovinger, 2012). These are hard facts to accept, but it is vital to take them into consideration when making revisions to the current drug recovery program offered by the courts. These older patients need to have some sort of legitimate support system in place, regardless of whether it is family, friends, or otherwise. Again, it is necessary to look at the absence of a comprehensive aftercare plan for these patients whom make it easier for them to give up and drop out of the program (Patterson & Jeste, 2014). This, of course, defeats the purpose of having mandatory treatment programs offered to older adult offenders in the legal system.

The question then becomes how the system can address these gender differences in the older adult patients so they do not have the desire to drop out of treatment. While the answers might seem simple, there is nothing easy about trying to decrease the amount of dropouts from mandatory drug treatment programs. SAMHSA (2014) showed that there has been an increase in the dropout rate of older adults from drug treatment

programs, and it is not entirely clear if males or females in this targeted population have the higher rate of walking out of treatment. This in itself shows that there must be further study done on this question so researchers can identify the specific ststistics and make a plan of action to address this concern so older adults, both male and female, will not drop out of drug rehabilitation. Additionally, the gender differences identified in this literature review can be integrated into the treatment plan as well as the aftercare the patient will need to go through once the initial treatment phase has been completed (Grella and Lovinger, 2012).

The Identified Issues

After examining the above issues, it is important to then be able to identify them and summarize briefly so that everyone can have a basic understanding of what needs to be dealt with. According to the National Institute on Drug Abuse (2012), this new generation of older adults who need help and placement in mandatory drug treatment centers will need more assistance than their counterparts because of the lack of resources available for their age group. Granted there are resources for older adults available in a general sense, but overall there is a lack specifically designed for older adults who have substance abuse issues (Hambly et al., 2010). Generally speaking, the four issues identified in this literature review are all important things that need to be addressed by the system. Overall, this should be a part of the patient's aftercare plan so these can no longer be used as reasons for patients to drop out of drug treatment programs (Williams et al., 2012). Once these issues have been addressed in the aftercare plan, it will make these

older adults more secure in completing their mandaotry drug rehabilitation and have a live that is more positive and no longer requires subtances to be a focal point in their lives.

What is also important to consider when identifying the issues with this targeted population is how therapy is working. Many treatment centers offer a traditional therapeutic plan, but according to Maschi et al. (2011), there has to be some new techniques introduced with this targeted population because traditional therapy is not as effective as it might have been a decade ago. The following section will examine the effectiveness of traditional treatment tools versus using a more positive approach. Many feel that the 'doom and gloom' approach that traditional tools take do not help older adults, and this is a major contributing factor to the reasons why they eventually drop out of these treatment programs. Maschi et al. (2011) point out that the goal of these treatment centers should be to reach the patient on a more individual level, nottake a cookie-cutter approach.

The Role of Positive Psychology in Reducing Dropout Rates

There are several approaches in psychology that are used when dealing with substance abusers. What would be unique about this specific situation is when dealing with older adults in this type of environment, using a Adlerian or postive psychological approach would help these patients develop new life skills and allow them to see the positive in their situation. According to Moran and Nemic (2013), the use of positive psychology in this type of setting can give older patients something to look forward to and not allow them to wallow in the seriousness or negativity of their current

circumstance. The Adlerian or Positive approach can allow older adults to see how hopeful their situation is and what their hard work can accomplish. Emphasis on the positive aspects of treatment can be focused on with this targeted population and ultimately lead to a decrease in dropout rates from these programs (Lin et al., 2011).

To those who are not familiar with the Adlerian or Positive approach, it allows the therapist to discuss other positive traits of the patient and what they can do to stay focused on acheuiving their goals (Morna & Nermic, 2013). In the case of these older adults in treatment, this approach can be extremely useful to remind the patient of their past accomplishments and to let them know their lives are still full of potential. The main goal of this type of therapy is to remind the patient that they possess positive attributes and that bringing them to the front can allow them to focus on achieving their goals. Morna and Nermic (2013) wrote that this approach is one that can help contribute to reducing the dropout rate of older adults from treatment programs.

Suggestions for Reform

The literature review is about to take an interesting turn in its focus from the issue to the possible resolutions to them. Now that the literature has been presented to help identify the issues with the current treatment options available for older adults, the issue then turns to what reforms need to be carried out to make sure these dropout rates decrease. As previously mentioned, there are several areas that need to be revamped so these numbers can be brought under control (Arndt et al., 2011). With them being identified and discussed in the previous sections of this literature review, it is now time to focus on possible resolutions that can be beneficial for all parties involved. Following are

some suggestions that will be made and hopefully integrated into the study results so older adults can have a better chance of completing substance abuse treatment.

Availability of Ancillary Resources

It was discussed in a previous section that one major reason older adults drop out of drug treatment programs is a lack of aftercare resources that can help these older adults manage to get the basic necessities of life (Harris et al., 2010). It is a major concern to those who need these aftercare sources, but due to the social and legal stigma of being labeled a substance abuser these vital resources somehow disappear. The legal system, in conjunction with the social welfare system, should have a plan in place for those older adults who successfully complete their mandatory drug treatment programs; if the patient does successfully complete their program resources for food and shelter amongst other life necessities should be available to that patient (Maschi et al., 2011).

Use of Positive Psychology

A shift in using traditional therapeutic methods into using a more positive, Adlerian approach should be considered when making revisions to the treatment programs for older adults. The legal system has to realize that in addition to providing adequate aftercare for these older adults, a change in therapy can also help to resolve the issues previously identified. According to Rosen et al. (2011), the implications of keeping current practices in place with no revisions can have further consequences on the dropout rate of older adults from these treatment programs. Those implications include more dropouts, lower overall success rates, and the eventual incarceration of these older adults since they were not able to complete court-mandated substance abuse treatment

successfully. This is one of the main reasons why it is so important that changes be made in the therapeutic tools used so they will make a positive impression on these older adults and inspire them to stick with the treatment program. This positive step will decrease the dropout rate amongst the targeted population.

Motivational Interviewing and Elderly Substance Abusers

Motivational interviewing (MI) in an evidence-based practice that is generalizable across problem areas, and is complementary to many treatment methods (Cooper, 2012.) Cooper indicated MI as a client-centered direct approach to engage client into setting treatment goals prior to the onset of the active treatment phase. Much of the research done on elderly individuals shows a lack of accountability with the elderly and the effects of substance use and abuse have on them as a whole (Cooper, 2012).

A key element in Motivational Interviewing with elderly substance abusers is resolving ambivalence about their substance abuse and to begin making positive changes with their lives without the use of substances (Ukachi, 2013). The treatment needs of older adults are considerably different, because as a person ages their bodies respond much differently to drugs and alcohol, as well as the way elderly approach substance use. (Cooper, 2012). Due to these factors motivational interviewing techniques have been found to be very effective for older adults in substance abuse treatment (Ukachi, 2013). Ukachi indicated using open-ended questions to engage the client to tell their story, affirming a client's willingness and behaviors, using reflective listening to let the individual know that you are listening and then summarizing their story back to them can

elicit change talk indicating a successful session or group and that an individual's ambivalence and resistance is diminishing. From these factors it has been found elderly individuals begin to move through the stages of change and are more likely to succeed in a mandatory in-patient treatment program (Cooper, 2012).

Further Study on Older Adults Substance Abusers

There has been a compelling case made to conduct further studies on the reasons older adults drop out of treatment programs. It needs to be understood with the changes in treatment modalities, the types of substances being used, and the more medically complex diseases these substances are causing for the aging population further study is periodically necessary. Trends in both the mental health and legal fields change consistently, and the research needs to reflect these changes (Wu & Blazer, 2011). This is why it is so important that studies such as this study be conducted periodically; they can make a significant impact on the currently existing literature and can even help policy makers implement necessary changes to make the programs more successful for the targeted population. It is for this reason that many families are in need of an effective procedure to rehabilitate the addicted members. They are looking for institutions that can promise them success once an abuser is put through the system and with these should bring predictors of the same. Institutions also require that they incorporate the views of the public so that they remain relevant to society. This review is focused on the research that has been conducted in the field and is closely related to the rehabilitation of addicts. It involved internet searches, library sessions, discussions with colleagues and consultations from the professors.

Summary

After reviewing all of the information in the currently available literature for the topic of this study, it is affirmed that further examination of the reasons why older adults drop out of mandatory treatment programs should be examined. Not only are there changes that should be made the aftercare plans for these patients, but there are also implications socially and legally for older adults who are told to complete these programs. It will take a great deal of effort from numerous sides to improve these dropout rates, but it is possible to decrease these rates.

The next chapter will detail the methodology and the ways this topic will be examined. The study results, combined with this literature review, will make it easier to change these programs for the better.

Chapter 3: Research Method

Introduction

The purpose of this study is to obtain information that would be useful now and in the future to help determine (a) the appropriate approach to take in treating older adults with a drug abuse problem and (b) proper treatment planning.

This chapter reviews the research design and approach used for this study. It includes a discussion of the archival data set, the measures from the data set to be examined, and an examination of G* Power. Finally, the data analysis strategy is reviewed.

Research Design and Approach

This quantitative study drew on archival data to evaluate my first hypotheses on whether gender, employment status, marital status, and referral source significantly differentiate among older adults who will drop out of long-term residential substance abuse treatment and those who will complete. The null hypotheses is that gender, employment status, marital status, and referral source will not significantly differentiate among older adults who will drop out of long-term residential substance abuse treatment. The research hypotheses is that gender, employment status, marital status, and referral source can significantly differentiate among older adults who will drop out of long-term residential substance abuse treatment. The second hypotheses evaluated was the impact of referral source alone on whether older adult substance abusers completed or did not complete treatment, indicating that referral source is a predictor of treatment dropout. The

null hypotheses was that referral sources alone will not predict the likelihood of treatment dropout or completion in long-term residential substance abuse treatment facilities.

Instrumentation

The instrument used in this study is the Treatment Episode Data Set – Discharges (TEDS-D), 2011. TEDS-D is a national census system of annual discharges from substances abuse treatment facilities. TEDS-D is a component of the Behavioral Health Services Information Services (BHSIS), maintained by the Center for Behavioral Health Statistics and Quality (CBHSQ), Substance Abuse and Mental Health Services Administration (SAMHSA). The TEDS-D records represent discharges and not individuals. An individual can be admitted or discharged more than once. All states that are public or privately funded must by law provide data on admissions to and discharges from their programs on individuals age 12 or older,. The information on discharges is routinely collected by state administrative systems and then submitted to SAMHSA in a standard format (SAMHSA, 2014). Walden University's Institutional Review Board (IRB) confirmed that this study meet ethical standards for research and was given approval number 12-10-15-0047631.

Archival Data Description

This study analyzed data from the SAMHSA Treatment Episode Data Set 2011 – Discharges (TEDS-D). This report provides information on treatment discharges and whether individuals completed treatment, dropped out of treatment, the length of stay in treatment, and characteristics and demographics of the discharges from facilities that report to individual state administrative data systems (SAMHSA, 2014). Forty-nine states

and jurisdictions submitted 1,922,385 eligible records for discharges of individuals aged 12 and older in 2011 (SAMHSA, 2014). Mississippi, Pennsylvania, and West Virginia submitted no data or incomplete data and thus were excluded from the data set (SAMHSA, 2014).

Participants and Effect Size

The participants for this study was obtained from the TEDS-D 2011 archival dataset. The archive includes individuals aged 12 and older in 2011 who were discharged from long-term residential treatment facilities in the United States. From this archive, a sample will be selected to include individuals aged 50 years of age and older who were admitted for substance abuse, and where the archive identifies those who dropped out of treatment from long-term residential facilities and those who completed treatment. In addition, for those individuals identified, measures of gender, education level, employment status, marital status, and referral source will be included in the sample date file.

For this study, past research studies of similar content will be used to determine the effect size. According to Prendergast et al. (2002), a meta-analysis was conducted on 78 studies of drug treatment between 1965 and 1996. The meta-analysis indicated five methodological variables were significant predictors of effect size, and were positive indicators of treatment effectiveness. The treatment effectiveness was indicated to be that the effect sizes were indicators of better outcomes with participation in treatment than no participation in treatment. Prendergast et al. (2002) found in a meta-analysis that current treatment effectiveness the comparison indicated an effect size of .34 is satisfactory.

The sample size using discriminate function analysis can be determined by using MANOVA strategies when using G* Power. Using the G* Power computation the test family used was F-tests, the statistical test used was the MANOVA: Global effects, and the type of power analysis used was the a priori. The effect size, $f^2(V)$, was .34, the α err prob was .05, the power (1-β err prob) was .95, the number of groups was 2, and the amount of response variables used was 6, producing a sample size of 68. This study used an archival database from the TEDS-D, 2011. Prior to selecting the sample based on criteria noted above, the 2011 TEDS archive consisted of a population of 1,804,858 participants which exceeded the required number according to the power analysis.

Data Analysis Plan

A descriptive analysis among demographic variables (i.e., gender, education level, employment status, and reason for referral), and a discriminate analysis predicting treatment dropout and treatment completion as the dependent variables were entered into the software program SPSS, version 21.

Research Question 1: Will gender, education level, employment status, and referral source significantly differentiate among older adults who leave against professional advice from substance abuse treatment and those who will complete?

Research Question 2: What is the impact of the referral source alone on whether an older adult substance abuser completes or leaves against professional advice from treatment?

Research Question 1 will be answered using results from discriminate analysis to predict successful completion of a long term residential treatment among older adults

based on gender, education, employment, marital status, and referral source. Examination of this prediction model might provide insights into how each predictor individually and in combination predicted completion or non-completion of treatment in a long term residential facility.

Research Question 2 will be answered using results from a non-parametric data analysis chi square to look at the statistical significance of an association between source of referral (categorical determining variable) and treatment completion and treatment non-compliance (categorical outcome).

Summary

The first research question is the core of the study and will indicate that gender, employment status, marital status, and referral source are predictors of treatment dropout of long term residential treatment of substance abusers age 50 or older. The second research question will indicate the association between referral source alone and treatment dropout. Findings of statistical significance could provide additional data to develop more sustainable treatment protocols and interventions for elderly substance abusers. Chapter 4 will provide the results of the study.

Chapter 4: Results

This chapter provides an overview of the results of this study on predictors of treatment outcomes with elderly substance abusers in treatment facilities. This chapter is divided into five parts, including an abbreviated introduction to the chapter, research questions and hypothesis, description of the sample, evaluation of assumptions, and a summary of the chapter.

Introduction

The purpose of the quantitative study was to examine predictors of treatment outcomes with elderly substance abusers in treatment facilities, as measured by the Treatment Episode Dataset – Discharges (2011). The theoretical framework of this study was based on the United States Department of Health and Human Services (2012), which indicated the amount of money and resources families have spent on treatment facilities without any concrete results, leading to the loss of faith in these institutions. King and Canada (2004) indicated the widespread problem of early treatment drop-out, increasing the likelihood of relapse, and exacerbating health and financial discourse especially affecting the elderly. They also indicated other factors such as referral source and an individual's perception of the severity of their addiction. Another component of this framework was social avoidance. LaCoursiere (2013) indicated that social avoidance was a result of stressful events relating to a person's age, loss of a significant other, loss of mobility, and trends of isolation as key predictors of elderly substance abuse. A discriminate function analysis (DFA) was conducted to determine predictors of treatment outcome (completion or non-completion) related to gender, marital status, employment

status, and referral source using the stepwise method. A nonparametric chi-square test was also conducted to determine if the referral source could predict treatment completion or non-completion with elderly substance abusers.

Research Questions and Hypotheses

Research Question 1: Will gender, marital status, employment status, and referral source significantly differentiate among older adults who leave against professional advice from substance abuse treatment and those who will complete?

H_0: Gender, marital status, employment status, and referral source will not significantly differentiate among older adults who will leave treatment against professional advice and those who will complete substance abuse treatment.

H_1: Gender, marital status, employment status, and referral source can significantly differentiate among older adults who will leave against professional advice from treatment facilities and those who will complete substance abuse treatment.

Research Question 2. What is the impact of the referral source alone on whether an older adult substance abuser completes or does not complete treatment?

H_0: Referral sources from the legal/judicial system will not predict the likelihood of treatment dropout (leaving against professional advice) in substance abuse treatment facilities.

H_1: Referral sources from the legal/judicial system will predict the likelihood of treatment dropout (leaving against professional advice) in substance abuse treatment facilities.

Description of the Sample

This study used archival data obtained from the Treatment Episode Data Set 2011 – Discharges (TEDS-D). The data used reported 49 states and jurisdictions submitted 1,922,385 eligible records for discharges of individuals aged 12 and older in 2011. Cases were selected from the dataset to include only individuals age 50 or older, and who had more than 16 years of education. The independent variables or predictor variables were gender, marital status, employment status, and the primary source of referral. The dependent variable were treatment completion and left against professional advice. The data for this study was compiled, coded, and tabulated with the use of the Statistical Package for the Social Sciences (SPSS v21).

Evaluation of the Assumptions

Discriminant function analysis (DFA) is very similar to the multivariate analysis of variance (MANOVA) computationally, and all the assumptions related to MANOVA apply. The testing of the multicollinearity assumptions and requirements were checked and it was determined that the most significant assumption was having an adequate sample size. You must also have a dichotomous dependent variable, and mutually exclusive independent variables. All of these were satisfied prior to analyzing the data. A non-parametric test, nearest neighbor was also run to look for significant differences and it was found that there was no meaningful differences among the groups. DFA also assumes that the sample size of the smallest group needs to exceed the number of predictor variables, and with this study's sample size is extremely larger than the number of predictor variables.

Discriminant Function Analysis of the Research Questions

In DFA the variables are analyzed to establish which continuous variables discriminate between two or more naturally occurring groups (Gravetter & Wallnau, 2004). Bian (n.d.) defined the purpose of DFA to maximally separate the groups, to determine the most reasonable way to separate the groups, and to discard variables which are little related to group distinctions. Evaluation of the DFA will complete the statistical analysis for the first research question and it will offer a list of variables to be used for both treatment outcomes of treatment completion and left against professional advice group membership.

Before running the DFA, the cases of interests were selected from the larger data file. Specifically, cases were selected based on participant age and education level. After selecting cases, 8,720 individuals met the criteria established. In this study, we selected data from respondents who were 50 years of age or older, and had 16 years of education or higher. Three independent variables were recoded employment status, marital status, and referral source. Gender remained in its original form. Employment was recoded to include part time and full time into employed, and not in the labor force, and unemployment as unemployed. Marital status was recoded from separated and married into married and divorced or widowed into unmarried. Referral source was recoded to include referrals from law enforcement/criminal justice system/legal system. The dependent variable was also recoded from seven reasons categories to two. The two final categories were treatment completed, and left against professional advice which included terminated by the facility.

DFA was then conducted to evaluate whether the predictor variables (independent variables), gender, marital status, employment status, and source of referral could discriminate between treatment completion, or left against professional advice.

To test Hypothesis 1 a discriminant function analysis (DFA) was run stepwise using the entry procedure. The F-value 3.84 was used for entry and 2.71 was used for removal from this model. The analysis tested the hypothesis that gender, employment status, marital status and referral source would differentiate those who completed treatment and those who left without completing treatment. Table 1 presents the standardized canonical coefficients for discriminant analysis. This table indicates the importance of rank within the grouping variables, and indicated a significant difference between the variables. Function 1 shows the primary referral source was highly correlated with the function, and marriage status, employment status and gender had a strong negative correlation.

Table 1

Standardized Canonical Coefficients for Discriminant Analysis

Variables	FUNCTION 1
REFERRAL SOURCE	.867
MARITAL STATUS	-.167
EMPLOYMENT STATUS	-.242
GENDER/SEX	-.307

A Wilks's lambda test was run to test which variable contribute significance in discriminant function. The closer Wilks's lambda is to 0, the more the variable contributes to the discriminant function. Table 2 provides the results of the Wilks's lambda and also provides a chi-square statistic to test the significance of wilk's lambda. The p-value if less than 0.05, so we can conclude that the corresponding function explained the group membership well and is a good fit for the data. The Wilks's lambda was significant, $\Lambda = .97$, $X^2(4, N = 8{,}720) = 251.93$, $p < .01$. A review of the canonical correlations in table 1 shows a positive relationship with the source of referral and a negative relationship with marriage status, employment status, and gender.

Based on the within group correlations between the predictors and the discriminant functions as well as the standardized weights the source of referral demonstrates the strongest relationship with the discriminant function while employment and marriage show a negative relationship. Table 2 provides the outcome for the within group correlations.

Table 2

Structure Matrix – Pooled Within Groups Correlations and Canonical Discriminant Functions

	FUNCTION 1
REFERRAL SOURCE	.891
GENDER	-.368
EMPLOYMENT STATUS	-.327
MARITAL STATUS	-.211

Table 3 shows the functions at group centroids for the function.

Table 3

Functions at Group Centroids

Reason for Discharge	FUNCTION 1
TREATMENT COMPLETION	.109
LEFT AGAINST PROFESSIONAL ADVICE	-.268

Table 4 shows the classification results indicating the reclassification of cases based on the new canonical variables was successful. Of the cases, 56.3% were correctly reclassified into their original categories.

Table 4

Classification Results for Stepwise Discriminant Function Analysis

	ReasonREV	Predicted Group Membership		TOTAL
		1	2	
Original	Count			
	1 - Successful	3418	2774	6192
	2 - Unsuccessful	1039	1488	2527
	Ungrouped Cases	856	1027	1883
%	1 – Successful	55.2	44.8	100.0
	2 - Unsuccessful	41.1	58.9	100.0
	Ungrouped Cases	45.5	54.5	100.0
Cross-Validated	Count			
	1 – Successful	3418	2774	6192
	2 - Unsuccessful	1039	1488	2527
%	1 - Successful	55.2	44.8	100.0
	2 - Unsuccessful	41.1	58.9	100.0

To test the second hypothesis, a chi-square analysis was conducted examining the relationship between the referral source alone on whether an older adult substance abuser completes or does not complete treatment. Table 6 shows the results of the chi-square analysis. The results of the test were significant, $X^2(2, N = 18{,}098) = 188.57$, $p < .01$. Thus, the null hypothesis was rejected. Table 5 shows the chi-square tests.

Table 5

Chi- Square Tests

	Value	df	Asymp Sig. (2-sided)
PEARSON CHI-SQUARE	188.568	2	.000
LIKELIHOOD RATIO	198.344	2	.000
LINEAR-BY-LINEAR ASSOCIATION of VALID CASES	140.242 18,098	1	.000

Table 6 shows the results of the referral source and reason for discharge cross tabulation. As noted earlier the referral source was revised into two groups to include the criminal justice/legal system and all other sources of referral. Those cases that were referred by the criminal justice/legal system, 5,686 or 31.4% completed treatment, and 2,699 or 14.9% who were referred by the criminal justice/legal system did not complete treatment. Those who were referred by community partners to include schools, churches, social services etc., 3,926 or 21.7% completed treatment, and 1,817 or 10.0% who were referred by community partners did not complete treatment. Those cases that fell under the other cases to include family and friends, etc., 3,147 or 17.4% completed treatment while 823 or 4.5% who were referred by family or friends did not complete treatment.

Table 6

Cross Tabulation

		Reason		
		1	2	Total
PSource (1)	Count	5686	2699	8385
	% within PSource	67.8	32.2	100.0
	% within Reason	44.6	50.6	46.3
	% of Total	31.4	14.9	46.3
(2)	Count	3926	1817	5743
	% within PSource	68.4	31.6	100.0
	% within Reason	30.8	34.0	31.7
	% of Total	21.7	10.0	31.7
(3)	Count	3147	823	3970
	% within PSource	79.3	20.7	100.0
	% within Reason	24.7	15.4	21.9
	% of Total	17.4	4.5	21.9
Total	Count	12759	5339	18098
	% within PSource	70.5	29.5	100.0
	% within Reason	100.0	100.0	100.0
	% of Total	70.5	29.5	100.0

a *Primary Referral Source (Psource)* b *Reason for Discharge (Reason)*

A summary of the results of this quantitative study of predicting treatment outcomes of elderly substance abusers using discriminant function analysis and a chi-square to determine if reason for referral alone could predict treatment outcomes along with a review of why this study was chosen, the research questions, study procedures, limitations, implications for social change, recommendations, and implications for further study will be addressed in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This study sought to identify variables from the TEDS 2011 dataset that could predict successful or unsuccessful treatment completion with adults age 50 and older. DFA was conducted to evaluate whether gender, employment status, marital status, and primary source of referral could discriminate between successful and unsuccessful treatment outcomes. The sample of interest in this study was individuals 50 years of age or older and who had 16 years of more years of education. This chapter discussed the findings of the discriminant function analysis and compared these findings with past research. Additionally, the limitations of this study, implications for social change, recommendations, and implications for further study are discussed.

Interpretations of the Findings

Two primary research questions were analyzed in this study. The first research question asked if gender, marital status, employment status, and primary referral source can predict a significant combination to discriminate between treatment completion and treatment non-completion among older substance abusers. The second research question asked if the primary referral source of the criminal justice system/legal system alone could predict treatment outcomes among older substance abusers.

DFA was used to analyze the first research question to create group membership profiles for successful and unsuccessful treatment completion. In this study, four variables were used for inclusion into the group membership: gender, marital status, employment status, and primary referral source. Classification results from the DFA

indicated that 56.3% of participants were correctly predicted. The DFA also showed a significance level below .05 and the null hypothesis was rejected, indicating that gender, marital status, employment status, and referral source are predictors of treatment outcome. The DFA also showed the within-group correlations between the predictors and the discriminant functions, as well as the standardized weights, showing the source of referral, demonstrates the strongest relationship with the discriminant function while employment status, marriage status, and gender show a negative relationship. A study done by Greenfield, Brooks, Gordon, Green, Kropp, McHugh, & Miele (2007), found inconsistent findings in studies between referral source and successful and unsuccessful treatment completion; but the same group did find U. S. two studies by Florentine, Anglin, Gil-Rivas, and Taylor (1997) and Grella and Joshi (1999) which found that men entering treatment were more likely referred by the criminal justice system. They also found that women were more likely to drop out of treatment than men.

A chi-square test using cross tabs was used to test the second research search question of whether referral source alone could predict successful treatment completion or treatment non-completion. The findings were significant. Those cases that were referred by the criminal justice/legal system, 5,686 or 31.4% completed treatment, and 2,699 or 14.9% who were referred by the criminal justice/legal system did not complete treatment. Thus this study rejected the null hypothesis. A primary source of referral from the criminal justice system/legal system alone can predict successful or unsuccessful treatment completion.

Discussion of the Limitations

Various limitation exists in this research study. A quantitative research design such as this one using a public dataset serves as a limitation due to the current researcher using data that was collected by others. Thus making it difficult to determine if the data was entered accurately from the original data. Also, the size of the dataset used was extremely large and was very time intensive. Filtering and recoding of the variables had to be accomplished to manage the data more precisely for this study.

Another limitation concerned with this study is the lack of prior research with elderly substance abuse. The lack of prior research can make it difficult to lay a foundation for a better understanding of the research being investigated. This research study had to define its own needs in this area of investigation.

Lastly, the primary limitation of this study, is the potential use of another measure to collect the data. This research study however, used Discriminant Function Analysis because of its ability to develop a predictive model based on the model produced through the discriminant function procedure increases its usefulness substantially. Also, DFA is an extension of MANOVA and provides all the remaining output that MANOVA does not.

Implications for Social Change

Research on elderly substance abuse stems from the late 1990s into the very early 2000s. With the upcoming surge of baby boomers retiring and the illicit use of drugs on the rise there is a rising amount of need for mental health and chemical dependency counselors. The aging baby boomers will place a large amount of burden and stress on

the current systems in place for substance abuse as well on their families, friends, the healthcare system and governmental agencies as well (Johnson & Sung, 2009). Prior research has indicated that the number of older Americans will dramatically increase by the year 2030 from 35–70 million (Federal Interagency Forum on Aging-Related Statistics, 2000). Over the past decade and with a growing sense of urgency research has predicted major social changes as the baby boomers begin to retire. Johnson and Sung indicated one area of growing concern is elderly and substance abuse. Another potential impact of the elderly and substance abuse is the growing need for healthcare services due to their substance abuse, mental health status, and aging related healthcare concerns. Trevisan (2014) found that substance abuse can affect nearly every organ in the body, the mental status of individuals can change, risk for falls, and medication interactions causing a large influx on the healthcare system.

As indicated in Chapter 2, while substance abuse goes unrecognized and untreated in older adults due to greater histories of lifetime use, the over prescribing of opiates medications later in life due to physical health complications, and the environments the baby boomers come from, predictors can be very effective in getting the older generation the treatment they need at where they are at in life and with the experiences they have had in their lives. The National Center for Chronic Disease Prevention and Health Promotion (2013) discussed that the general population of drug abusers is changing with the aging of the baby boomer generation. Along with this change and the number of this generation being addicted to both prescribed medications, illicit drugs, and alcohol if recognized early on traditional treatments today can be effective for them if we know the

factors of their use ahead of time.

According to Lee (2015) a reason that the older generation never receive any formal addiction treatment and supported by research is fear of failure and social stigma. This studied showed that individuals age 50 or older, and with more than 4 years of college education, predictors such as employment status, marital status, and referral source can help determine treatment completion and treatment non-completion. Lee (2015) indicated key factors of the older generation include feeling ashamed of themselves, feeling hopeless and scared need encouragement and support. That treatment teams when working with the older adults need to focus on the social and psychological needs of older adults to include the changing roles of retirement, dealing with changing physical health and loss of mobility, the loss of a spouse or partner and depression related to the major life changes they are experiencing. Keeping all of this in mind, treatment protocols with the older population need to be more individualized and flexible and the pace of the delivery of treatment need to be matched to the abilities of the individual being treated (Lee).

Due to the large size of the baby boomer generation in the United States alone, and its increasing rate of substance use ultimately will place great demands on the substance abuse treatment systems, and the healthcare systems indicating a need to shift the focus among treatment planners alike to address the special needs of the elderly population substance abusers. In addition, if the predictions regarding the influx of health and substance abuse problems with the upcoming older population occur, public policy and policy makers will be in demand to provide more funding for substance abuse

treatment and substance abuse treatment facilities as well as providing more funding for the training of the needed professionals to provide the treatment as well as educating them on how to best serve the older population.

Recommendations for Action

The following are a list for recommendations that can be made as a result of this research study.

Mental health professionals, substance abuse counselors, and the healthcare teams to include medical doctors, nurse practitioners, and physician assistants who provide care for the older population need to address the growing concern of prescribed medication abuse along with illicit substance abuse and alcohol and find ways to better track this usage.

Additionally, improved treatment protocols need to be in place for measuring use and abuse, and more data need to be analyzed for predicting the future trends and treatment needs of the older generation.

Recommendations for Further Study

This research study was able to find significance in predicting treatment outcomes with the older population using the variables of employment status, marital status, and primary referral source. The implications that this research study may have on future research was the data collected by this researcher was limited compared to the size of the database it was taken from. There are thousands of possible predictor variables in the dataset that could be evaluated, as well as more research questions could be developed using the data that was collected. There are thousands of other skilled and knowledgeable

mental health professionals, medical doctors, and researchers that could add a tremendous amount of insight into similar future research.

Although this research study was performed on a much smaller scale, the significance and the implications, as well as the literature review and findings do have the potential to make an impact no matter how small with the aging population, how the future may present treatment both on a medical basis and a mental health substance abuse basis. It can also establish an advocacy for empowering and educating the professionals who work with this population in the future.

Most defining is that most of the elderly substance abuse research was done in the late 1990s and early 2000s and was done based on the consumption of alcohol. With the emerging trends of prescribed opiate addictions as well as the illicit drug use and the continued consumption of alcohol, substance abuse, its diagnosis, and the treatment needed will be one of the most demanding and pressing public health concerns this country and the world as a whole will have to face.

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