2019

Relationship between Spirituality and Perceived Social Support with Success in Alcoholics Anonymous

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The Office of the Provost

Walden University
2019

Abstract

Relationship between Spirituality and Perceived Social Support with Success in

Alcoholics Anonymous

by

Mala Hosmane

MA, Towson University, 2005

BA, Towson University, 2001

Dissertation Submitted in Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Counselor Education and Supervision

Walden University

November 2019

Abstract

Failure in treatment and Alcoholics Anonymous (AA) leads to continued addiction, but practitioners need to learn which factors predict better outcomes in AA to make better referrals. Here, the predictive relationship between spirituality and perceived social support with success in AA was examined based on Frankl's theory on meaning in life. A quantitative, correlational design was used to determine whether there was a statistically significant predictive relationship between spirituality, as measured by the Assessment of Spirituality and Religious Sentiments, and perceived social support, as measured by the Multidimensional Scale of Perceived Social Support, with success in AA, as measured by the binomal sobriety variable with either totally sober over the last 90 days or not. Data were collected using an anonymous online and in person survey, and logistic regression was used to analyze the data on the final sample of 93. Inclusion criteria was adult age, U.S. residency, and former or current AA membership. The new model's classification table was nonsignificant without improving classification of cases as sober/nonsober. The overall model was significant per the chi-square results and the spirituality odds ratio was significant in predicting sobriety. Therefore, there was a significant predictive relationship found between spirituality and success in AA, but not for perceived social support. Recommendations include AA's value despite spirituality or social support level for recovery and spirituality as still a tool in recovery. Positive social change implications include better understanding of the factors leading to success in AA, and therefore better referrals to AA or other such adjunctive support services needed, which can improve outcomes for clients struggling with alcohol addiction.

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Dedication

To my loving parents, without whose help and constant encouragement I could not have persevered through this degree process. To my loving God who gave me the courage to not give up and pursue my dream of getting a doctorate to help others.

Acknowledgments

My dissertation team Dr. Linton, Dr. Perepiczka, Dr. Sidney Shaw and Dr.

Dupkoski who helped me all along this process.

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Chapter 1: Introduction to the Study

The topic of this study was the relationship between spirituality, perceived social support, and success in Alcoholics Anonymous (AA). There was a lack of recent data collected from AA members on these relationships, so there was a need to collect up-to-date information (Kelly & Greene, 2014; Reif et al., 2014; Young, 2012). This study can provide clinicians with a better understanding on the factors that lead to success in AA. With this understanding, clinicians can make better referrals to AA or other more appropriate adjunctive support services for addicted persons needing such services. I originally planned to use a multiple regression analysis, but I eventually used logistic regression due to the nature of the data collected (see Field, 2013). The Nature of the Study section in this chapter includes the rationale for this decision. In Chapter 1, I also describe various aspects of my study including the background, problem statement, the purpose, the research questions and hypotheses, the theoretical framework, the nature of the study, definitions, assumptions, scope and delimitations, limitations, and the significance. I end with a summary of the chapter.

Background and Problem Statement

Many addicted clients use self-help support groups such as AA in their recovery, but only some find these groups helpful (Kelly & Greene, 2014; Reif et al., 2014; Young, 2012). Practitioners have been mandating clients to treatment in AA who are not succeeding in AA (Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015). Failure in treatment and AA leads to continued addiction. These clients' lack of success there may deter them from seeking other types of treatment modalities, especially

if they are mandated to attend. Thus, practitioners need to learn more about what factors predict better outcomes in AA to make better referrals.

There is a connection between support group satisfaction and spirituality as well as perceived peer support with noted differences between genders, race, and whether participants are court-mandated to treatment (Contrino, Nochajski, Farrell, & Logsdon, 2016; Kelly & Greene, 2014; Reif et al., 2014; Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015; Young, 2012). However, clinical professionals do not know whether these two factors lead to success in AA and to what degree in order to make informed choices about whether to refer addicted clients to AA (Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015). There has been a lack of recent survey research about these issues as they relate to success in AA, and most researchers have done secondary analysis of other researchers' older data (Contrino et al., 2016; Kelly & Greene, 2014; Reif et al., 2014; Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015; Young, 2012). Therefore, there was a need for further exploration, and I hoped to remedy these problems by collecting new survey data and analyzing this data in the present study.

Purpose

The purpose of this study was to examine the predictive relationship between spirituality and perceived social support with success from AA support groups. I used a quantitative, correlational design with logistic regression statistical analysis after collecting data from anonymous surveys. I originally examined the relationship between spirituality and perceived social support among current or former AA members residing

in Maryland while collecting extra information for gender, race, and if a member was

mandated to attend (See Creswell, 2009; Rudestam & Newton, 2015); I later expanded to

a national level to collect more data from nonsober participants.

Research Question and Hypotheses

The main research question for this study was, "Is there a statistically significant

predictive relationship between both spirituality and perceived social support with

success in AA support groups among AA members?" The hypotheses were:

H_0: There is no statistically significant predictive relationship between both

spirituality and perceived social support with success in AA support groups among AA

members.

H_1: There is a statistically significant predictive relationship between both

spirituality and perceived social support with success in AA support groups among AA

members.

There were several variables in the study. One of the predictor variables was

spirituality or religiosity, which was defined as closeness to God, finding meaning in life,

or religious activities/rituals as measured by the score on the Assessment of Spiritual and

Religious Sentiments (ASPIRES; Piedmont, 2014). The other predictor variable was

perceived social support, which was defined as believing in having a network of people

that help an individual's well-being as measured by the score on the Multidimensional

Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). The

outcome variable was success in AA as defined by sobriety according to AA literature,

which translates into total sobriety from alcohol (Alcoholics Anonymous World Services

[AAWS], 2018) as measured by the totaled score relating to sobriety from a few questions on the demographic section based on ideas from scales such as the Timeline Followback (TLFB; Sobell & Sobell, 2008).

The extra demographic information I collected was for gender, race/ethnicity, age, and whether someone was mandated to come to treatment as well as asking about Maryland residency and AA membership. I defined gender in the study as the ASPIRES did as male or female (Piedmont, 2014). Participants could check one of the following race/ethnicity options as mentioned at the beginning of the ASPIRES scale: Arabic, Asian, Black, Caucasian, Hispanic, or Other. The survey also provided *yes* or *no* questions to determine whether they were mandated to come to AA treatment, had Maryland residency, and AA membership. To make sure that the persons fit the criteria for inclusion in the study, the ASPIRES also had a fill in the blank question about age (Piedmont, 2014).

Theoretical Framework

In this section, I briefly explain the theoretical underpinnings of my research, though there will be a more detailed explanation in Chapter 2. Victor Frankl introduced the importance of finding meaning in life to maintain mental well-being (Chen, 2006; Frankl, 1992). Frankl stated that lack of meaning in life leads to an existential vacuum that people then try to fill with unhealthy things such as addictions (Chen, 2006; Frankl, 1992; Lyons, Deane, & Kelly, 2010). Frankl connected spirituality with helping individuals find healthy sources of meaning in life. Researchers have sometimes

measured spirituality by measuring an individual's sense of meaning in life (Chen, 2006;

Frankl, 1992; Piedmont, 2014). Researchers have also found that perceived social

support is part of finding healthy sources of meaning in life (Chen, 2006; Frankl, 1992;

Zimet et al., 1988). Therefore, both spirituality and perceived social support may help

with addiction, which is a major measure of success in AA, and research has shown a

relationship between these variables (Feigenbaum, 2013; Kelly & Greene, 2014; Kelly &

Hoeppner, 2013; Kelly, Stout, Magill, Tonigan, & Pagano, 2011). AA is known to be a

spiritual program, and it incorporates group social support, which made assessing AA

members an imperative part of this present research project (Kelly & Greene, 2014).

Therefore, in this project, I examined whether AA participants having higher levels of

spirituality and perceived social support derive more life meaning and so are more

successful in AA by curbing their addictions (Feigenbaum, 2013; Kelly & Greene, 2014,

Piedmont, 2014, Zimet et al., 1988).

Nature of the Study

This quantitative study involved a correlational design in which I originally used a

multiple regression statistical analysis (see Creswell, 2009; Rudestam & Newton, 2015;

Tuckman, 1999). This study involved examining the predictive relationship between

variables leading to success in AA through a quantitative, anonymous survey to collect

new data rather than using secondary analysis as most recent researchers have done

(Creswell, 2009; Feigenbaum, 2013; Kelly & Greene, 2014; Kelly & Hoeppner, 2013; Lê

Cook & Alegría, 2015; Mawson et al., 2015; Rudestam & Newton, 2015). Online

anonymous survey research allowed for participants to answer more honestly on subjects

such as their substance abuse histories without as much pressure as in interviews that can

increase social desirability bias (see Creswell, 2009; Rudestam & Newton, 2015). This

study involved using well-known valid and reliable ASPIRES, MSPSS, and some

demographic questions about sobriety based on scales such as the TLFB scales to

measure spirituality, perceived social support, and success in AA in terms of sobriety

(Piedmont, 2014; Sobell & Sobell, 2008; Zimet et al., 1988). In addition, the survey

format included a demographic section and some of the ASPIRES questions about

gender, race, age, Maryland residency, AA membership, and whether a person was

mandated to come.

In terms of methodology, I collected data from participants who were Maryland

residents, current or former AA members, and who were over age 18 adults (see

Creswell, 2009; Rudestam & Newton, 2015). Because of the anonymous nature of AA, I

could not solicit members directly from AA groups (AAWS, 2018). However, I solicited

from at least 20 local area clinics, community centers housing AA meetings, mental

health professional colleagues, word of mouth, through the counseling ministry leaders of

my church, the church online social media, and further snowball sampling with flyers

(see Creswell, 2009; Rudestam & Newton, 2015). I left the online survey open until I

reached the minimum number of needed participants. Periodically, I checked the survey

if I had the needed number and when not, I left it open longer to gather data. I then ran

the multiple regression analysis using IBM SPSS Statistics for Windows, Version 24.0.

I later switched my analysis to logistic regression when I did not meet the

assumptions for multiple regression and did not obtain sufficient numbers of nonsober

participants with my first round of data collection (see Field, 2013). There were less numbers of such participants needed to run logistic regression. I continued collecting data until I reached the minimum number of participants needed to run logistic regression, in this case, 20 nonsober participants (Concato, Peduzzi, Holford, & Feinstein, 1995; Peduzzi, Concato, Feinstein, & Holford, 1995). To get enough nonsober participants, I had to expand my data collection to include U.S. residents rather than only Maryland residents as well as including a paper-pencil version of the survey.

Definitions

The major definitions relate to the various variables I studied (see Creswell, 2009; Rudestam & Newton, 2015). Spirituality or religiosity, one of the predictor variables, was defined as closeness to God, finding meaning in life, or religious activities/rituals (Chen, 2006; Lyons et al., 2010; Piedmont, 2014). Perceived social support, the other predictor variable, was defined as believing in a network that help well-being (Chen, 2006; Lyons et al., 2010; Zimet et al., 1988). Success in AA was defined by sobriety according to AA literature (AAWS, 2018). The extra demographic information I collected included age, gender, and race/ethnicity. I defined gender as male or female, as the ASPIRES did (Piedmont, 2014). Race/ethnicity was defined using the ASPIRES scale options: Arabic, Asian, Black, Caucasian, Hispanic, or Other.

Assumptions

There are several assumptions that I made in my study. I assumed that the participants had alcohol use disorder according to the Diagnostic and Statistical Manual-5 (DSM-5) criteria for alcohol use disorder and were not just any AA members so they can

report on their drinking habits. However, I could not solicit from closed meetings only, which are only open to actual alcoholics attending, and open meetings do not require that attendees be alcoholic. The reason I could not solicit from meetings directly was because AA values anonymity, and the Maryland AA office would not allow it. I thought that including the DSM-5 criteria as questions for the participants might be too complicated and time-consuming. Because I could not solicit directly from meetings, and I could not likewise screen applicants, to simplify my study I simply asked for AA members and then asked about their sobriety.

I also assumed that participants were answering honestly in their self-reporting about their Maryland residency, adult age of 18 or older, and all the other questions I asked. I could not verify this information without breaking confidentiality and anonymity, but I asked this information to get the appropriate types of participants I was looking for. Later, when I expanded my study to include national participants, I had to assume that participants I solicited were residing in the United States.

Without honest information from the participants, the results might have been skewed and biased (see Creswell, 2009; Rudestam & Newton, 2015). I assumed therefore that the participants were answering truthfully to all the questions on the survey. They might have succumbed to social desirability bias or answering in a way they thought would make them look favorable. They might have feared judgment about their using behaviors, spirituality, or social networking and so answered dishonestly for that reason. To deal with this issue, I made the survey anonymous and online or later paper-

pencil format so that their information was confidential. Results could not be valid

unless there were honest answers to the questions by the participants.

<p align="center">**Scope and Delimitations**</p>

The study involved a certain scope and delimitations. I chose to investigate

spirituality and perceived social support as a factor contributing to success in terms of

sobriety in AA as the literature has shown some connection between these variables. I

wanted to collect new data, as most studies I researched only used outdated data to

investigate the relationships between all three or two of these variables (Contrino et al.,

2016; Kelly & Greene, 2014; Reif et al., 2014; Kelly & Hoeppner, 2013; Lê Cook &

Alegría, 2015; Mawson et al., 2015; Young, 2012).

There were several boundaries of the study in terms of populations and theories

most related to the area of study that were not investigated (see Creswell, 2009;

Rudestam & Newton, 2015). The population included current or former AA members,

those 18 years old or above, and Maryland residents. I did not investigate other theories

besides that relating to Frankl's meaning of life theory (Chen, 2006; Lyons et al., 2010).

I chose Frankl's theory over others because of its simplicity and plurality. Many people

find meaning in life from different sources, which could include spirituality and

perceived social support. There may be other sources of life meaning as well that I did

not explore in this current study. People might use all these sources of meaning of life to

help curb addictions in general.

The dissertation study may have limited generalizability for several reasons (see

Creswell, 2009; Rudestam & Newton, 2015). First, there was no way to prove that the

people taking the survey met the criteria for alcoholism or even AA membership as well as their age or residency because the study involved an anonymous survey. Therefore, I could not know whether I was studying the population I intended to study. However, an anonymous survey addressed fear of judgment affecting responses. Second, I had no way of knowing if the information would apply to others fitting the criteria because of a small size sample for medium effect size. My using snowball sampling methods and nonrandom nonprobability sampling could not guarantee that this sample represented the sample at large. Further, all the participants may have been from one geographic location in Maryland, affecting generalizability to the rest of Maryland. I also could not say that these Maryland participants represented all AA members. The volunteer survey takers might be atypical participants who are more likely to volunteer to take surveys compared to others who were still AA members. There might, in addition, be a skew in gender, race/ethnicity, and whether someone was mandated to come, which might affect the generalizability of the results.

In terms of boundaries, I had to later expand to the national level to obtain the number of participants who were nonsober I needed to run my logistic regression analysis. In terms of limited generalizability, even when I expanded to a paper-pencil format, though I collected the surveys directly myself, I left out all identifying information from the participants at the various facilities I solicited. I collected the surveys from participants and put them in an envelope, so I could not determine who took which survey to keep it anonymous without the names of the participants on the surveys. When I later expanded the survey nationally, I also did not know where the survey takers

were from and whether many were clustered in the same areas or not. Therefore, I have

no way of knowing the full generalizability of my findings.

Limitations

There were several limitations for this study. There were limits to internal

validity because there was no experimental or control group. I could not assume

causation because of the lack of an experimental and control group or the lack of variable

manipulation. Again, there might be other explanations for success due to having no

control group. There might have been dishonest participants, which would have rendered

the survey results inaccurate. These might have had a self-selecting bias that people who

willingly take surveys do not necessarily represent the population, which might include

AA members who did not feel comfortable taking surveys. The people might also want

to make a good impression or manipulate the research to answer in a way they thought I

wanted them to answer, which might have made the results skewed. In the case of the

paper-pencil surveys, the participants might have wanted to impress me even though I

never saw the survey results from each individual participant directly. I used a sample

size to find medium effect to address some of these issues by capturing more than just a

large effect and capturing a more representative sample.

Another limitation is that I could not determine who is taking the survey, so some

participants may not have fit the criteria or may have lied (see Creswell, 2009; Rudestam

& Newton, 2015). Therefore, I might not have measured what I intended to measure, and

the study might not be replicable in terms of reliability. I stated the guidelines clearly

about who was to take the study and used a larger sample size to help compensate for

possible reliability and validity issues. I also used scales that had good reliability and validity to help cut down errors (see Creswell, 2009; Rudestam & Newton, 2015).

<center>**Significance**</center>

Through my study, I contributed to social change in a significant way. My research can help clinicians make more educated referrals by knowing about which of their substance abusing clients might benefit from and succeed in AA (Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015). The research can also help clinicians better convince people with higher levels of spirituality and perceived social support to give AA a chance to help them in their recovery. Clinicians may also better design support groups for individuals who are substance abusing based on the factors found to relate to success in AA. Researchers can also have a better foundation to further research the constructs of spirituality, social support, gender, race, and whether people are mandated to treatment in AA. This may lead to discovering other factors that may lead to success in AA.

Another benefit of this research is better predictive and accurate referrals for clients to AA allows clients to get help who cannot afford services, which in turn helps society function better because of lowered crime rate, fewer costs for treatment, and more productive citizens. The results of the study can help validate the use of AA with such clients. Further, unlike previous recent studies, I directly collected new data instead of performing secondary analysis.

Summary

This chapter included the background and problem statement about the need to make more informed referrals to AA. I also listed the research questions addressing the relationship between the major variables and success in AA. I set up the framework including the meaning of life theory. I described the nature of the study and listed the definitions of the variables. I also pointed out the assumptions of the study. The chapter listed the scope and delimitations as well as the limitations of the study. Lastly, I pointed to the significance of the study including better referrals to AA, helping alleviate the substance abuse problem in the United States, and designing better alcohol counseling support groups. In Chapter 2, I continue with the literature review to provide previous research as a basis for my study.

Chapter 2: Literature Review

Introduction

The problem surrounding this study was that many addicted clients use self-help support groups such as AA in their recovery, but practitioners do not know the factors that lead to succeed in AA (Kelly & Greene, 2014; Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015; Reif et al., 2014; Young, 2012). These clients' lack of success might result in not pursuing other types of treatment modalities, especially if they were mandated to go. Thus, practitioners need to learn more about what factors predict better outcomes in AA to make better referrals. The purpose of this quantitative study was to determine the relationship between spirituality/religiosity and perceived social support with success in AA in terms of sobriety level.

Research has shown the connection between support group satisfaction and spirituality as well as perceived peer support with noted differences between genders, race, and whether participants were court-mandated to treatment (Contrino et al., 2016; Kelly & Greene, 2014; Reif et al., 2014; Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015; Young, 2012). However, clinical professionals may not know whether these two factors lead to success in AA to make informed choices about whether to refer addicted clients to AA (Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015). Therefore, I conducted this study to address this lack of knowledge due to lack of recent survey data that does not involved secondary analysis.

In this chapter I review the literature search strategies that I used for the literature review, discuss the theoretical foundation, and discuss the literature related to the major

variables or core concepts of the research study including 12-step facilitation, demographics and substance abuse, spirituality/religiosity and substance abuse/AA, social network/social support and substance abuse/AA, and both spirituality/social support and substance abuse.

Literature Search Strategies

This literature review related to the relationship between spirituality and perceived social support with success in AA. Therefore, this literature review included exploring articles relating demographics to substance abuse, spirituality and substance abuse, and social support and substance abuse. I also reviewed some articles about the scales included in the study. I used Google Scholar, and I set it up to make articles available that were accessible through Walden University's databases including those related to social science literature such as PsycINFO. The search terms I used included terms such as *substance abuse*, *addiction*, *alcoholics anonymous*, *success in AA*, *perceived social support*, *social network*, *spirituality*, and *religiosity*, with combinations of these search terms. In my search, I included specifying articles after 2012 unless involving theoretical articles or assessments, which did not include limiting the year in those cases. I mostly limited the review to peer-reviewed journal articles. However, in the section on 12-step facilitation, I relied on a book chapter on the subject authored by my dissertation chair and the AA website because of the lack of available literature on the subject (see AAWS, 2018; Linton, 2017).

Theoretical Foundations

Frankl introduced the importance of finding meaning in life to maintain mental well-being, as lack of meaning can lead to unhealthy things such as addictions (Chen, 2006; Lyons et al., 2010). Spirituality can help individuals find healthy sources of meaning in life. Thus, researchers have sometimes measured spirituality by measuring a person's sense of meaning in life (Chen, 2006; Piedmont, 2014). Researchers have also found that perceived social support is part of finding healthy sources of meaning in life (Chen, 2006; Zimet et al., 1988). Therefore, both spirituality and perceived social support may help in avoiding addiction, which is a major measure of success in AA (Feigenbaum, 2013; Kelly & Greene, 2014; Kelly & Hoeppner, 2013; Kelly et al., 2011).

AA is known to be a spiritual program, and its members incorporate group social support, which made assessing AA members an important part of this study (Kelly & Greene, 2014). Therefore, in this project, I examined whether AA participants having higher levels of spirituality and perceived social support derived more life meaning, making them more successful in AA by curbing their addictions (Feigenbaum, 2013; Kelly & Greene, 2014, Piedmont, 2014, Zimet et al., 1988). The rest of the section includes a brief review of three articles related to the concept of meaning of life that guided the study.

Based on Frankl's concept of meaning in life, Chen (2006) hypothesized that adding in a spiritual program would increase individual and affective transformation. Chen studied inmates who were receiving 1-year addictions recovery either through Narcotics Anonymous as well as a spiritually based 12-step course or through only

Narcotics Anonymous as a source of social support. The results suggested that the inmates doing both programs simultaneously as opposed to only Narcotics Anonymous had greater rationality, greater sense of life meaning, and eventually reduced negative affect. Though there was limited generalizability from the results, Chen provided a theoretical framework from Frankl's meaning in life to further examine spirituality and social support. I drew on this author's idea of examining both perceived social support and spirituality for comparison with addiction recovery success through sobriety. The current research imitated some parts of this study but on a nonincarcerated population and using AA instead of Narcotics Anonymous.

Lyons et al. (2010) further studied forgiveness and purpose in life as spiritual mechanisms of recovery from substance use disorders. The authors acknowledged that there has been a link between spirituality and substance abuse recovery through spiritual recovery programs. The authors hypothesized that components of spirituality that may be related to recovery included forgiveness and purpose in life. They linked both spiritual mechanism components back to Christian spiritual principles as well as the AA 12 steps. After reviewing related literature, the authors proposed a theoretical model demonstrating the connections between the two spiritual mechanisms, spirituality, and recovery. Thus, Lyons et al. provided a theoretical framework for studying spirituality, which I used in examining forgiveness as a spiritual mechanism in addictions recovery among AA members. The link connecting purpose in life and forgiveness as spiritual mechanisms back to Christian faith principles and AA 12 steps were valuable to consider in the current research.

Finally, Kelly et al. (2011) studied spirituality in recovery through a lagged mediational analysis of AA's principal spiritual-theoretical mechanism of behavior change. The authors reviewed literature showing the value of AA in addictions recovery and AA members' claim that recovery happens through spirituality. Findings included that participants in AA increased in spiritual practices over time and, in turn, improved alcohol substance use outcomes. Therefore, the researchers suggested that AA does use spiritual practices as a means of improving alcohol recovery among participants. However, their data Project MATCH, which was from the early 1990s, so the results might not apply or generalize to current populations of addicted AA members. Regardless, they showed that spirituality is possibly a theoretical framework to study in relation to substance abuse recovery in AA. Additionally, the methods of mediational analysis of several factors was a way of studying this information in my research project. I included replicating similar research from this study but with current survey data to make results more applicable to current AA members.

Alcoholics Anonymous 12-Step Facilitation

A standard research literature search under AA 12-step facilitation therapy did not yield the needed information about how to facilitate an AA group. Therefore, I used information from the official national website for AA (AAWS, 2018). After consulting with my dissertation chair, I also drew from his book chapter on 12-step facilitation (Linton, 2017). The following is taken verbatim from the AA national website as their purpose:

AA is an international fellowship of men and women who have had a drinking

problem. It is nonprofessional, self-supporting, multiracial, apolitical, and available almost everywhere. There are no age or educational requirements. Membership is open to anyone who wants to do something about his or her drinking problem. (AAWS, 2018)

People have been using AA for recovery from alcohol addiction since its foundation in the 1930s (AAWS, 2018). Known as the original 12-step self-help support group, AA now has millions of members worldwide. Unlike other common counseling treatment modalities for addiction, the AA model includes a spiritual approach, a disease addiction model, accepting and surrendering to addiction to recover, and aspects of charity and outward focus on assisting others in recovery to help personal recovery (AAWS, 2018; Linton, 2017).

Basic Tenets

There are several basic tenets to AA and other 12-step groups (AAWS, 2018; Linton, 2017). Although AA and other 12-step self-help groups have influenced regular treatment modalities, they are considered to be supportive therapies. According to the AA national website, all people are welcome to AA as long as they want to cease drinking. Despite the difficulty in researching AA members because of the anonymous nature of the groups and because most members are concurrently in formal substance abuse treatment that may be a confounding variable, researchers have shown a relationship between AA attendance and successful recovery from alcoholism. However, despite the worldwide availability and presence of AA, most AA members still tend to be middle age, Caucasian men in Western countries, which may mean another confounding

variable when studying AA members compared to the general alcoholic population though these statistics are changing.

AA, along with all 12-step anonymous meetings, has guiding principles called their 12 traditions as listed here:

1. Our common welfare should come first; personal recovery depends upon AA unity.

2. For our group purpose there is but one ultimate authority—a loving God as He may express Himself in our group conscience. Our leaders are but trusted servants; they do not govern.

3. The only requirement for AA membership is a desire to stop drinking.

4. Each group should be autonomous except in matters affecting other groups or AA as a whole.

5. Each group has but one primary purpose—to carry its message to the alcoholic who still suffers.

6. An AA group ought never endorse, finance, or lend the AA name to any related facility or outside enterprise, lest problems of money, property, and prestige divert us from our primary purpose.

7. Every AA group ought to be fully self-supporting, declining outside contributions.

8. AA should remain forever nonprofessional, but our service centers may employ special workers.

9. AA, as such, ought never be organized; but we may create service boards or

committees directly responsible to those they serve.

10. AA has no opinion on outside issues; hence the AA name ought never be drawn into public controversy.

11. Our public relations policy is based on attraction rather than promotion; we need always maintain personal anonymity at the level of press, radio, and films.

12. Anonymity is the spiritual foundation of all our Traditions, ever reminding us to place principles before personalities. (AAWS, 2018; Linton, 2017)

Members of AA work the 12 steps to recover from their addiction through a life-long process (AAWS, 2018; Linton, 2017). Their main text, originally published in 1939, is called the Big Book (or Blue Book because of its color), and it includes instructions on how to work these 12 steps. The 12 steps are made up of three main phases of recovery. The first three are preparation, four-9 are action steps, and 10-12 are the maintenance of recovery (Linton, 2017). The following are the 12 steps of AA:

1. We admitted we were powerless over alcohol—that our lives had become unmanageable.

2. Came to believe that a Power greater than ourselves could restore us to sanity.

3. Made a decision to turn our will and our lives over to the care of God as we understood Him.

4. Made a searching and fearless moral inventory of ourselves.

5. Admitted to God, to ourselves, and to another human being the exact nature of our wrongs.

6. Were entirely ready to have God remove all these defects of character.

7. Humbly asked Him to remove our shortcomings.

8. Made a list of all persons we had harmed, and became willing to make amends to them all.

9. Made direct amends to such people wherever possible, except when to do so would injure them or others.

10. Continued to take personal inventory and when we were wrong promptly admitted it.

11. Sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for knowledge of His will for us and the power to carry that out.

12. Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics, and to practice these principles in all our affairs. (AAWS, 2018)

Philosophical Underpinnings and Key Concepts

AA and other 12 step groups have certain philosophical underpinnings and key concepts (AAWS, 2018; Linton, 2017). AA considers addiction as a disease rather than a moral or self-control problem. Similar to the Jellinek addiction disease model from the 1950s and 60s, addiction is like any other disease that is chronic and may incorporate genetical components leading eventually to disability or death without treatment (Barnett, Hall, Fry, Dilkes-Frayne, & Carter, 2018). In other words, addicted people are powerless over addiction and can only be in life-long recovery or disease management rather than

"cured" of their addiction. In the 12-step model, addiction has some signs related to using such as certain life stressors, lack of self-control, inability to cut back, repeated intoxication, denial, and lack of interest or participation in nonusing activities (AAWS, 2018; Linton, 2017). Members can help other members recognize if they are truly alcoholics and addicts by these tell-tale signs. The only way to be in recovery is to permanently and abstain from substances of abuse, and there is no moderation of using allowed in the program to maintain recovery.

Recovery and the 12 Steps

Recovery happens in AA through following the 12 steps as outlined in the Big Book and other AA literature (AAWS, 2018; Linton, 2017). Researchers have shown that going to AA meetings is not enough to recover from addiction as much as working these 12 steps and engaging in the program. There are several key components leading to recovery as part of the 12 steps of AA (AAWS, 2018; Linton, 2017). First, AA is not a religious program, but it is a spiritual program, and a spiritual awakening is considered essential to recovery, which involves addicted people forsaking unhealthy ways associated with using and adopting healthy lifestyle changes in line with recovery through surrendering to a God of their religious or faith background. Next, they admit that they are powerless over substances, and without succeeding at this step, people cannot progress forward with the other steps through leaning on the strength and support of a Higher Power. Success in the program is also dependent on regularly attending AA meetings of various formats because this provides a nonjudgmental place to share struggles, prevents isolation, takes up time that would otherwise entail addiction

activities, and helps them recognize they are not alone in their addiction. Researchers have shown a relationship between attending meetings and better mental health, lowered impulsive behavior, and less substance use.

Working the steps is of course important to the process, and the steps build upon each other, must be done in order, need to be done with a sponsor or AA mentor, and can be broken into three main focus groups including the first three steps are the preparation stage including accepting and surrendering, steps 4 to 9 are the action stage including activities related to recovery, and steps 10 to 12 are the maintenance stage related to keeping recovery gains (AAWS, 2018; Linton, 2017). After completing step 7, members are encouraged in Steps 8 and 9 to list those who have hurt them and make amends as well as forgive those who have hurt them. In Step 10, members maintain their gains by doing a daily inventory and making amends on an ongoing basis. The last stage of the 12-step work involves altruism where members give freely of themselves, including helping other members who are just starting in their journeys, without expecting anything in return through service and sponsorship of newer members. Linton showed that such service could not only benefit those helped but also the helper in their recovery.

Typical Meeting

After the leader asks about newcomers and awards chips for long-timers for different timeframes of sobriety, a typical meeting might start with reading the 12 steps and traditions out loud (AAWS, 2018). Then depending on the type of meeting there may be a speaker or a discussion on a big book or other AA literature topic. Then follows open sharing when appropriate depending on the group from participants who are

willing to share though there is always the option to pass on sharing. There is a brief

pause to help contribute financially to the meeting and announcements during that time.

Then, participants can openly share one more time. At the end, often members join hands

to say the serenity prayer or the Lord's Prayer from the Bible. The session should end at

one hour. Some groups have a fellowship time before and after with food or coffee/tea

sometimes. These have been part of my personal experiences in attending anonymous

meetings as well as what is on the AA site and elsewhere on the web.

Summary

In summation, AA is a self-supporting self-help organization (AAWS, 2018;

Linton, 2017). Each group is lead and made up primarily of Alcoholics though open

groups are welcome to observers, friends, and relatives of alcoholics. There is no

"leader" as much as persons helping one another through this disease. Participation is

ideally voluntary, and membership is anonymous. As can be seen through the steps and

traditions, a large part of AA is spiritual including surrender to a Higher Power or God of

a person's choosing to help conquer this addiction and disease. AA also involves social

networking, as part of AA is reaching out to help others in this same disease in order to

not only help those others but to keep themselves strong in their recovery. Thus, there is

the concept of sponsorship and being sponsored in AA. Members of AA measure

success by sobriety, which entails total abstinence from alcohol and other nonprescribed

mood-altering substances. Therefore, there is the concept of giving members "chips" at

the meetings when they have maintained sobriety for 30 or 90 days, 6 months, a year, and

so forth.

Demographics and Substance Abuse

There were a plethora of studies involving researchers who looked at the demographics behind substance abuse (Kelly & Hoeppner, 2013; Kuerbis, Sacco, Blazer, & Moore, 2014; Lê Cook and Alegría, 2015). Here, I picked only some that were most relevant to my research study. Some of these researchers noted a connection and some only a partial connection. Although all agreed that there were multiple factors affecting substance abuse and such could not be narrowed down to only gender, race, socio-economic status, or age, or any one demographic factor. Each individual is different so that these were only correlations rather than causations. I felt that examining these relationships between demographic variables would aid me in better understanding the concepts I would be examining directly in my study.

Age, Gender, and Race Demographic Studies

Certain researchers looked at age differences in substance abuse such as Kuerbis et al. (2014) who studied substance abuse among older adults. The researchers found that there were fewer older persons having substance abuse problems compared to the general population. However, these persons still risked having alcohol abuse, prescription, or other drug abuse issues. Kuerbis et al. also found it difficult to diagnose substance abuse disorders in older adults because many of them had other physical and mental disorders with overlapping similar symptoms. When assessing this population, there was a need for respect as well as direct questioning of drug and alcohol use. This population seemed to benefit from direct and brief education on topics related to substance abuse. In cases that were more severe, treatments geared toward this population and that were more

intense in nature were effective. Based on Kuerbis et al.'s study, there appeared to be age differences in substance abuse patterns among older adults compared to younger ones, though I was not looking into this issue directly in my study.

There were several studies related to demographics and substance abuse including AA that were secondary analysis studies (Kelly & Hoeppner, 2013; Lê Cook and Alegría, 2015). For example, Kelly and Hoeppner (2013) studied whether AA worked differently for men and women. The researchers used data from Project Matching Alcohol Treatment to Client Heterogeneity (Project MATCH), which was started in 1989 and continued for 8 years and included data on AA attendance at 9 and 15 months in regard to percent days abstinent and drinks per drinking day as well as mediators including self-confidence, depression, social associations, and spirituality/religiosity to see AA's recovery effects for both genders while controlling for other factors. Kelly and Hoeppner (2013) found that AA's effect was about 50% regarding percent days abstinent for both genders and both genders benefited from social associations but more so among men than women. The mediators in regard to drinks per drinking day resulted in 70% of the effect of AA in men compared to about 40% in women. Again, the mediator most affecting men was social associations. When factoring out AA's effects, women showed a greater relationship between negative self-confidence and negative results compared to that of men. Overall, the researchers demonstrated there were gender differences and a meditational effect of several variables including social support and spirituality on success in AA. Therefore, studying the relationship between these variables and success in AA using similar models to those used in this study made sense.

In addition to gender differences, some researchers studied racial or ethnic differences in terms of substance abuse patterns (Lê Cook & Alegría, 2015; Otiniano Verissimo, Gee, Ford, & Iguchi, 2014). However, tied into these racial and ethnic factors are related criminal history and socioeconomic status. In one such study, Lê Cook and Alegría (2015) examined racial-ethnic disparities in substance abuse treatment including the role of criminal history and socioeconomic status. The researchers used the results from the 2005–2009 National Survey on Drug Use and Health consisting of about 25,000 adult respondents and compared African Americans to Caucasians and Latinos to Caucasians in regard to substance abuse treatment. Only one-tenth of racial-ethnic minorities received treatment. Odds ratios for African-American compared to Caucasian and Latino compared to Caucasian differences shrunk and reduced to significantly less than one after factoring in criminal history and socioeconomic status. More criminal history and Medicaid use among African Americans and Latinos and decreases in income specifically related to disparities across all three models. The authors concluded that persons with a criminal history and lower socioeconomic status were more likely to receive treatment for substance abuse which was unlike other medical fields, and these disparities raised issues about perceived intimidation into treatment and associated resistance to treatment. However, the data might not apply socioculturally to addicted persons today.

I used the research from the Lê Cook and Alegría (2015) article for the current study because these researchers outlined the importance of looking at both racial differences and underlying factors that might negate those differences in terms of

treatment usage and outcomes. I collected race/ethnicity and being mandated to treatment as extra information. In particular, these authors showed the importance of studying whether or not persons were mandated to treatment as this related to criminal history, which could affect outcomes and usage regardless of race. Therefore, I examined both racial and treatment mandates as extra information. Although these authors used odds ratios, I originally planned to use multiple regression analysis though I later changed to logistic regression analysis. I also included using original survey research, which the authors of this article mentioned was the basis of the original data analysis. One confounding variable that I did not look at that these authors examined in the article was whether socio-economic status or criminal history affected substance abuse outcomes and willingness to participate in treatment.

In line with the mentioned studies, some other researchers examined both racial and gender differences as they related to substance abuse (Otiniano Verissimo et al., 2014). These researchers studied how gender and racial discrimination could affect substance abuse. In particular, these researchers looked at the relationship between discrimination and substance abuse especially among Latinas and Latinos, and differences therein by gender and discrimination sort. The researchers did a secondary analysis of the 1, 273 Latina and 1039 Latino respondents from the 2002-2003 National Latino and Asian American Study. In the primary study, the authors measured both alcohol and drug abuse using the DSM-5 standards.

Additionally, the researchers studied the covariates of immigrant characteristics and demographics. The researchers used gender-stratified multinomial logistic regression.

Men reported more discrimination than women (39.6%, 30.3%), higher rates of alcohol abuse, (16.5%, 4.5%), and higher rates of drug abuse (9.5%, 2.3%). Discrimination significantly related to higher alcohol abuse for Latinas and increased drug abuse for Latinos. Men reported higher rates of racial discrimination and women reported higher rates of gender discrimination in terms of type. These researchers found that the differing types related to the differing types of either drug or alcohol abuse between men and women. The researchers concluded that different types of discrimination related to separate types of substance abuse between men and women. Future researchers could examine the causes behind these observed differences.

Otiniano Verissimo et al. (2014) used the theoretical framework of the stress-coping model of addiction. Unlike the previous study mentioned, these researchers did find gender and racial differences for substance abuse outcomes. There was some limit to the generalizability of the study due to no proven causation, dated data, and the self-reporting nature of the original data. In keeping with my research, I saw the importance of examining gender and racial differences in the research because women and men of different races might have differing associations with my variables. Therefore, I collected this extra information. I also saw the need for more recent data because the data in this study was from over 10 years ago. I did not want to do secondary analysis of the data but collected my own for that reason to get a more contemporary view about the issues I was studying.

Other Demographic Studies

Another demographic factor affecting substance abuse outcomes was self-selection bias (Humphreys, Blodgett, & Wagner, 2014). This was particularly true among AA members, as AA is traditionally supposed to be a voluntary self-help support group. In this particular study, the authors examined the effectiveness of AA without self-selection bias. Humphreys et al. (2014) noted that in the past, AA effectiveness studies had the tendency for self-selection bias because participants could decide to attend AA or not. Therefore, these researchers in this study used a new statistical method to approximate the effectiveness of AA without such bias. The researchers used instrumental variables models to analyze six sets of data from five National Institutes of Health–funded randomized trials including AA facilitation interventions. The researchers analyzed 774 alcoholics in one data set separate from the remaining 1,582 alcoholic participants from the five data sets because of diversity in the limits to the sample. The researchers used randomization for the instrumental variable, and it was a good tool in both samples because it effectively foretold greater AA attendance unrelated to self-selection bias. Five of the six data sets the researchers analyzed showed randomization apart from self-selection bias predicted greater attendance in AA, as well as greater numbers of days abstinent at 3 and 15 months after the initial start of the study ($B = 0.38$, $p = 0.001$; $B = 0.42$, $p = 0.04$). In the last data set, where participants already started with greater levels of AA attendance, it did not show effects on abstinence when the researchers randomly assigned participants to different interventions. The researchers concluded that for most alcoholics greater AA attendance could reduce alcohol abuse

regardless of self-selection bias, but those already highly involved and attending AA might not show such gains.

Humphreys et al. (2014) used the theoretical framework of the theory behind self-selection bias. The sample size was very large because the researchers pooled the sample from several data sets. There were some controls for researcher bias, but they still got to choose who would qualify to be part of the dataset. Limitations on the study were that this correlational study could not prove causation, the limits of the statistical analysis based on lack of follow up for the participants, and the older datasets used limited generalizability.

I find that the Humphreys et al. (2014) study contributed ideas for my research. Here again was another possible confounding variable in self-selection bias that might be the true reason that AA participants were doing well apart from my chosen predictor variables. I made sure to take this variable into account and tried my best to control for it. I also recognized the need to question participants about their length and amount of attendance in AA because these factors affected the results of this study greatly, but did not do so in the current research study. I collected my own data to increase the generalizability to other situations because this data were very old.

Yet another demographic issue that affected substance abuse outcomes was how much clients perceived that a treatment was helpful (Montgomery, Sanning, Litvak, & Peters, 2014). Researchers in one study examined the connection between client's perceived helpfulness of substance abuse treatment and outcomes but in the context of race. Montgomery et al. (2014) noticed that there was a gap in the research regarding

how clients' felt regarding how sufficient their chemical dependency treatment was for them. The authors used secondary analysis of National Institute of Drug Abuse clinical trial data to further explore this research gap and its relationship to the results of treatment using a sample of 387 African American and Caucasian adult participants at multiple treatment sites. They used randomization of motivational enhancement therapy and treatment as usual. After treatment ended, each participant filled out an exit survey about their perception regarding how helpful the program was to them for several components of the program. The authors found that African Americans in the study found 9 of the total 12 treatment aspects more useful compared to their Caucasian counterparts. African Americans found particularly helpful treatment aspects related to education about coping skills and forming new healthy relationships. These findings held true even after ruling out age, gender, whether a person was employed, drug of choice, and assignment to whichever treatment. The perception of helpfulness did not predict treatment success in terms of sobriety among all participants. The authors concluded that especially for African Americans it was important to factor in perceptions of treatment helpfulness when designing substance abuse treatment. Montgomery et al. (2014) included as their theoretical framework for the study that perceived benefit related to positive outcomes. Limitations in this study included the dated information, error from using small sample size, and utilizing data sets not specifically made for this study's research questions. Therefore, for these reasons the researchers agreed that the study had limited generalizability. I found valuable information for my research in the Montgomery (2014) study. I realized through the findings about the value of asking

about race in my study because results varied in this one according to race. I collected race as part of extra information in my research. Although the author of this particular study did not show that perceived benefit of treatment led to improved treatment outcomes in terms of sobriety, the author did quote some articles that did have that finding. Therefore, perceived benefit of AA might be another confounding variable in my study. These authors also used a similar instrument to the type I planned to use as a basis for my questions to measure sobriety, namely scales such as the TLFB (Sobell & Sobell, 2008). This scale is a calendar that participants use to fill in about their past substance abuse.

Though the mentioned researchers did more indirect analyses of data whether through literature review or secondary analysis of others' data already collected, other researchers chose to collect new data (Zemore & Ajzen, 2014). This was also the intent of the current researcher. Therefore, the researchers of these articles shed some insight into procedures related to data collection examining the relationship between substance abuse and demographic factors.

Besides the major demographic variables of gender, race, and age, some researchers asked if there were other factors affecting substance abuse (Zemore & Ajzen, 2014). One such study was conducted by Zemore and Ajzen (2014), who studied whether a short 9-item scale related to the theory of planned behavior predicted whether participants finished substance abuse treatment or not. The researchers collected data from an outpatient clinic with 200 new clients. They used baseline surveys to measure attitudes, norms, perceived control, and intention related to treatment. The researchers

also logged how the professionals chose to discharge the clients from the clinic. As hypothesized, the theory of planned behavior outlook and control foretold intention as shown by model R-squared = .56, and intention positively correlated with finishing treatment despite clinical and demographic covariates (model R-squared = .24). As hypothesized, the theory of planned behavior components mostly correlated with the alternative readiness scales, and the theory of planned behavior had a predictive relationship despite higher duress. Meanwhile, none of the standard measures of readiness scales or treatment duress positively associated with treatment participation. Results suggest the theory of planned behavior could be used to predict treatment completion and clinicians might wish to screen for intention when admitting persons to substance abuse programs. Zemore and Ajzen (2014) had limitations in their study. The authors suggested themselves that having an ending survey to retest the theory of planned behavior might have added to their results. The researchers were concerned that some of their unexpected results were because of having too small of a sample size. There were controls for researcher bias, but the researchers might have picked only certain scales to compare with, which were biased. Other limitations in this study included sample size as mentioned for certain subcomponents looked at, limits on how many theory of planned behavior components to explore, and not re-administering the theory of planned behavior scale to the full sample at the end to discover changes over time. The researchers agreed that the findings had limited generalizability because they did not do the study on a much larger scale although the information might be useful to clinics.

In the Zemore and Ajzen (2014) study, I found information that was helpful for my study. The researchers showed that there might be other factors besides those I am studying that led to successful completion of drug and alcohol treatment, so it might be there were similar factors that led to success in AA. Many AA members are self-motivated or intentional about wanting to succeed in AA, so they might also be operating under the theory of planned behavior rather than my chosen variables. The authors showed that even despite being mandated to treatment, the theory of planned behavior was a better predictor of treatment completion. Therefore, this might be similar in the case of studying success in AA. I needed to address external variables such as this in my research. I also was mindful of the limitations of survey research that I planned to do just as these researchers were.

In summation, researchers have found clear connections in most cases between demographic factors such as race or ethnicity, gender, age, socio-economic status, criminal history, perceived helpfulness, and self-selection bias with substance abuse, treatment, and AA outcomes (Montegomery et al., 2014; Zemore & Ajzen, 2014). Therefore, I justified looking into some of these factors in my study. Although my study could not encompass all of these factors, at least by looking at some, I hoped to enrich my study by collecting extra information on some of these issues.

Spirituality, Religiosity, Substance Abuse, and Alcoholics Anonymous

I next decided to explore my first predictor variable of spirituality or religiosity. I wanted to explore both how this variable related to substance abuse and then also more

specifically to AA. I wanted to get both a broader and more specific understanding to help me better frame my study.

Spirituality Studies Using Literature Reviews

Some of the studies looked at in this review focused on spirituality, religiosity, substance abuse, and AA using literature reviews (Dein, Cook, & Koenig, 2012; Selvam, 2015). I found it useful to use such reviews as a starting point because the older research often informed the newer research. They tried to make the connection between how addiction related to spirituality by looking over a number of other research studies done on the subjects. Overwhelmingly the researchers of these reviews found a positive connection between religiosity/spirituality with lowered substance abuse. The researchers used various types of literature review to examine these factors.

Dein et al. (2012) conducted a literature review of current research on religion, spirituality, and mental health. Based on this review, the authors indicated a need for more refined research methods, for studying the differences between separate societies and customs, for greater attention to individual differences in these societal practices, and for the contribution of theology to this research. The authors suggested future research should focus on these areas. Dein et al. (2012) reviewed numerous articles when conducting their literature review. The authors presented lots of information and arguments to consider regarding controversies in religion, spirituality, and mental health research. Unfortunately, there was no systematic method to decide which articles to include or exclude from the review. Therefore, their claims and their arguments could be

questionable, and the authors might not be accurately representing all research in this particular field of study.

Dein et al. (2012) gave other researchers ideas about possible future research in the field of religion, spirituality, and mental health. They indicated gaps in and controversies about the current research in this field. I applied these ideas for future research to using more reliable research methods, studying cultural differences, and studying particular religious or spiritual customs and mental health in societal sub-groups. Specifically, I examined spirituality and addiction recovery of addicted AA members through survey methodology.

Just like Dein et al. (2012), Selvam (2015) approached the study of spirituality and addiction recovery through a positive psychology theoretical framework while conducting a qualitative systematic literature review (QSLR) of the relevant research. The author combed the related research, set inclusion-exclusion criteria, and used qualitative coding methods to approach the 53 chosen articles and generated hypotheses. Within the positive psychology theoretical framework, the author discovered 24 resilient characteristics including intelligence, honesty, rigor, humbleness, mercy, sweetness, affection, optimism, and spiritual practice. Based on the findings, the author hypothesized that future research could test the relation between these positive psychology strengths and the spirituality-addiction connection, and future research could test whether having these strengths or not was beneficial or detrimental in addiction recovery.

Selvam (2015) used qualitative research methods for this literature review to discover if positive psychology was an appropriate theoretical framework for studying spirituality and addiction research. The author examined this research through a new theoretical framework of positive psychology and a strengths-based perspective. He recorded each step of the coding process and picked the research articles using strict inclusion-exclusion criteria. The author also generated several hypotheses that future research could test because he used a qualitative approach. However, the author did the majority of the coding by himself, so his conclusions may be biased because he only collaborated occasionally with one of his supervisors. The author also only used electronic literature sources in his review, so this research automatically eliminated paper sources such as books from the review. Therefore, the review might not be as comprehensive as the author desired. The qualitative methods included other biases such as the researcher's choosing the criteria of inclusion and exclusion for the literature material.

Selvam (2015) generated several hypotheses for possible application to future research in the field of spirituality and addiction. In particular, he suggested testing these ten positive psychology resilient characteristics and how they related to the spirituality-addiction connection as possible moderating factors. He also suggested testing whether possessing these characteristics would benefit addicted persons or not, and he suggested testing whether a lack of these characteristics contributed to addiction problems. About half of the chosen articles were about AA in this study. Specifically, the author suggested using a positive psychology theoretical framework when studying AA addicted

members because each of their 12 steps encouraged followers to build one or more of these ten resilient characteristics. Likewise, the author suggested that these strengths based out of positive psychology also applied to most major world religions and spirituality.

Similarly, I collected extra information about gender, being mandated to treatment, and ethnicity in addition to the relationship between spirituality and sobriety or success in AA among addicted members. In keeping with this article, I used a scale to measure various aspects of the positive psychology strength characteristic of spirituality as applied multi-religiously and cross-culturally (Piedmont, 2014). I followed a positive psychology framework as it involved looking at addicted AA members' recovery through such persons utilizing their strengths to cope with addiction.

Similar to the Selvam (2015) study, Lucchetti, Granero, and Lucchetti (2014) did a literature review to discover mechanisms related to spirituality and substance abuse outcomes. They recognized that past research examined various factors related to substance abuse and the importance of religiosity as well as spirituality as factors. The authors reviewed this relationship and offered possible mechanisms behind this relationship as well as trying to better grasp how spiritual interventions affect drug and alcohol treatment. The researchers found the following factors related to less alcohol and drug use including greater religious activity, organized religious attendance, private spiritual or religious practice, and being Protestant. The researchers concluded there was a need for exploring mechanisms behind this relationship and spiritual or religious relations to treatment.

Lucchetti and Granero Lucchetti (2014) did a review of the literature related to spirituality, religiosity, and substance abuse. They chose not to do direct research in order to get a general overview of the literature. They reviewed several articles; however, they did not explain how they chose the articles, so they might have included some researcher bias in the selection. That was the main limitation in this study. The generalizability of the study related to the original articles they reviewed. The researchers simply concluded there was a need for greater research in these areas they explored. The researchers did mention some cultural and social contexts because of mentioning some of their own research done in Brazil.

I found the research from the Lucchetti and Granero Lucchetti (2014) study helpful for my research. They mentioned that some research showed a connection between social support as a mediating variable between spirituality and substance abuse in some studies, so I also studied social support in my study (Edlund et al., 2010). However, they also mentioned that some research was inclusive about the role of social support in this relationship. They mentioned mechanisms of moral values as part of religious upbringing as well as religious affiliation with attitudes towards substance abuse, which were possible factors to look at in my study as confounding variables or sub-facets of spirituality. The researchers mentioned how intense referral to AA or Narcotics Anonymous as part of treatment, spiritually modified treatment, and initial religiosity along with AA or Narcotics Anonymous attendance as part of treatment all related to better or at least the same substance abuse treatment outcomes compared to controls. Only spiritual formation as an adjunctive treatment did not show better

outcomes, but this result might have been due to morbidity in the study. The authors also gave a good rationale as to why studying substance abuse was important including the number of people involved with using substances and substance abuse related crime and injuries.

To get a more well-rounded perspective, unlike the previous reviews, Sinha (2017) specifically reviewed the impact of religion on substance abuse among youth. The researcher found that there were many studies related to this topic. In the research presented, the researchers defined religiosity as a type or denomination, how important someone perceives religiosity to be, and attending services. The researcher found that religiosity was especially effective in buffering juveniles against substance abuse when they had increased levels of intrinsic and extrinsic religiosity.

Sinha (2017) had constrictions in the research. It was a literature review, so the author chose what articles to review in it. Therefore, the researcher might have eliminated articles that showed contradictory information. It was difficult to make total conclusions from the information presented without going to the original articles.

I found Sinha (2017) beneficial for my research. The researcher revealed another confounding variable in that it showed several articles that revealed that different types of religion showed different relationships between religiosity and substance abuse. Religions that were more permissible to using alcohol had members who were more likely to use it compared to other religions, for example. Sinha also pointed out that intrinsic religiosity along with extrinsic religiosity together were buffers against substance abuse among youth, but extrinsic religiosity was not when alone. The

researcher postulated that the later phenomena occurred perhaps because social

engagements through religiosity may also expose someone to more opportunities to abuse

substances if the person did not intrinsically believe in tenets of the religion that

discourage using. I did not examine types of religions in my study, but I studied both

intrinsic and extrinsic religiosity/spirituality, which might help better understanding of

the topic. I also assumed that similar results in this review also applied to the adult

population.

Some literature reviews looked more specifically at the role of spirituality as this

related to alcoholism including. Witkiewitz, McCallion, and Kirouac (2016) reviewed

recent literature studying the protective relationship between religious affiliation,

spirituality, and spiritual practices and alcohol abuse. They found that past research has

studied all these variables in relation to personal transformation including mindfulness

and self-acceptance. These aspects were similar in treating alcohol abuse, so other

researchers found interest in studying spirituality in this context. More specifically, the

researchers reviewed literature examining the relationship between spirituality and

development, maintenance, and treatment of alcoholism as well as how effective were

types of spirituality such as prayer and meditation in relapse prevention and reduction of

alcoholism post treatment. The researchers examined qualitative research related to life

experiences and spirituality as coping mechanisms for recovering alcoholics. Lastly, the

researchers review literature related to how to incorporate spirituality into best practices

for alcoholism treatment. Witkiewitz et al. (2016) had limitations. The researchers chose

what articles to review, and so they might have left out some articles that did not show a

relationship between spirituality and recovery from alcoholism. They also pointed out

that though many past researchers studied AA and spirituality, other researchers pointed

out a relationship between aspects of spirituality such as prayer and meditation with

general alcohol use disorder. Witkiewitz et al. (2016) informed my research. They

reinforced that many studies had found similar results to what I hypothesized in terms of

a greater spirituality relating to greater success in AA in terms of sobriety. However, I

actually conducted a research study instead of simply reviewing others' works.

To specifically get a better understanding of the concepts of spirituality and

religiosity as these related to AA, I looked at some literature reviews related to these

specific topics (Feigenbaum, 2013; Sandoz, 2014). For example, Feigenbaum (2013)

reviewed historical research in order to promote a realistic view of spirituality and

religion in AA both in the past and present. The author reviewed both original sources

and commentary on these original sources. The author identified both Bill W. and Dr.

Bob as the originators of the support group idea stemming from the original ideas of

William James, the founder of the Oxford Groups. In the past, people clearly identified

AA with spirituality and not religiosity. The information also revealed that both founders

had spiritual awakenings, which were identified by James. The author hoped that this

historical review would assist nurses in a better understanding of AA in order that they

could teach clients about AA while encouraging addicted persons to go to these groups.

Feigenbaum (2013) presented a historical appraisal of the AA movement. The

admonition that AA was a spiritual rather than a religious program aligns with commonly

known AA literature and AA culture. The specific references to the founders and leaders

of AA aligned with what was the common historical basis of AA. The author intended

for the information provided to help providers make a more informed choice about who

to refer to AA groups in terms of spiritual persons; therefore, this author continued

contributing to the existing body of knowledge about AA. Generalizability might be

limited because the author did not include actual research findings as much as a historical

review.

Although Feigenbaum (2013) did not use any research methodology, the author

did contribute some ideas through the review to use for the current study. The researcher

showed that there might be a possible relationship between AA success and spirituality

based on the history of AA and its leadership. The author specified the importance of

studying general spirituality rather than any specific religiosity or religion in relation to

AA, which contradicts some of the findings of the other literature reviews. I used

research methods to examine spirituality among the AA participants as a follow-up study

to the article. The author also influenced the choice of which scale to use to measure a

general spirituality rather than a specific religiosity among AA participants.

Similarly, Sandoz (2014) reviewed various literature related to spirituality and

AA especially as related to the concept of God in the program. The researcher

recognized that the 12 steps of AA had worked for persons for 75 years or more. AA

made the claim that recovery came through spirituality while doing the 12 steps resulting

in changing a person's mental state for recovery. The researcher made the connection of

these newer 12 steps to much older spiritual disciplines including devotion,

understanding, service, and meditation all as a means of knowing God. The researcher

reviewed recent research pointing to mechanisms of recovery through the 12 steps including reducing resentments and helping members forgive.

Sandoz (2014) promoted spirituality as the key mechanism for change in recovery through a review of the literature related to spirituality and AA. The authors contributed to my research because they showed how spirituality was a key mechanism of change for recovery in AA. I studied how spirituality including a person's relationship with God related to success to AA. My measurement of spirituality included aspects of spirituality related to devotion, understanding, and meditation. I did not explore service as an aspect of spirituality.

Kelly and Greene (2014) conducted a study looking further in depth as mechanisms related to how spirituality might relate to behavior change in AA in the same year as the Sandoz study. These researchers based their review of the literature on the fact that AA was a spiritual self-help recovery program. They reviewed several studies that showed that spirituality was a path through which AA helped addicted persons recover. They also tried to answer how specifically increases in spirituality resulted in greater sobriety. They did so by reviewing articles about AA and spirituality as a means to altering actions and suggested five mental mechanisms to explain how increased spirituality led to greater sobriety.

Kelly and Greene's (2014) review of literature added a new idea in the literature because they tried to explain how specifically spirituality might contribute to sobriety in AA rather than only confirming that a positive relationship existed. However, the researchers pointed to how the generalizability was questionable because the study did

not involve research methodology as much as a review of previous work that was sometimes dated. The researchers may have had a bias in terms of how they came up with the five mechanisms because it was their opinion to choose those mechanisms instead of other mechanisms in light of the reviewed research, and they needed controls for that bias that were not apparent. For example, the researchers discounted that these mechanisms might not apply to diverse persons practicing forms of spirituality different from the mainstream culture.

Kelly and Greene (2014) confirmed the importance of studying the relationship between spirituality and success in AA as this was a relationship confirmed by previous research. However, they also pointed to the importance of studying diverse forms of spirituality rather than only forms that cater to the majority culture to get a broader view of spiritual mechanisms affecting sobriety in AA. Therefore, this current researcher used a scale measuring spirituality that was applicable to persons of diverse cultures and faith traditions. The current researcher used questions related to scales such as the TLFB measuring sobriety as a measure of success in AA as these authors suggested a relationship between these variables (Sobell & Sobell, 2008). The current researcher also followed up this review and theoretical article by using research methods to examine the relationship between spirituality and success in AA further.

In contrast to the previous studies, Kelly (2017) wanted to see whether spirituality or religiosity really was a mechanism of behavior change in AA. Kelly (2017) used literature review to study 25 years of research related to AA and the controversy behind why and how AA seemed to aid in people's recovery including issues surrounding AA's

claim to religiosity and spirituality as a mechanism or means to recovery. In the 90's the U.S. Institute of Medicine asked researchers to study how effective was AA and its mechanisms of behavior change (MOBC), which led to many federally funded research studies on these topics. The researcher in this study reviewed religiosity and spirituality as these related to AA and how these compared with recent research results about AA's MOBC. The researcher found that despite the Big Book's claim that religiosity and spirituality related to recovery in AA, research on MOBC showed such a relationship only among the few highly addicted members. Other MOBC included mostly social, cognitive and affective means. These MOBC reflected reports from mainstream AA members as well as later AA literature such as Living Sober. The researcher concluded AA was a free source available over longer periods of time to aid persons in recovery using similar MOBC as chemical dependency treatment.

Kelly (2017) contributed ideas for my research. The author showed me that spirituality might not be effective in eliciting change unless clients were severely addicted. Therefore, I measured the severity of their addiction using questions related to scales such as the TLFB scale (Sobell & Sobell, 1988). I also measured social support as another MOBC, which this author pointed to as a possible factor of behavior change.

In terms of looking at biological evidence in the literature for the connection between spirituality and AA, Vaillant (2014) researched AA and discovered evidence that AA was effective due to using positive emotions similar to positive psychology to promote recovery in its members. Part of AA's first three steps was recognizing a person's need to depend upon and attach to other persons and a Higher Power, and these

related to positive emotions of affection or love. AA's last two steps also promoted the need to serve others with the message in order to stay healthy yourself, and this related to the positive emotion of joy. Brain imaging researchers had found that secure attachment such as love expressed through attaching to a Higher Power or mother and child could imitate the brain activity of an addicted person. Similarly, brain imaging researchers had found that giving to a charity or joy could also imitate the brain activity of an addicted person. The researchers concluded that the positive emotions elicited by the positive emotions in AA could be a healthy substitute for alcohol addiction without the use of drugs.

Vaillant (2014) did not necessarily conduct an experiment rather than a review of other researchers' findings on the topics as well as a review of AA literature and pop culture. The researcher brought up some interesting ideas to think about and consider. The generalizability was good as the author reviewed a lot of literature from previous studies and the AA literature. There were no cultural or social context considerations.

Vaillant (2014) aided in my understanding of my research. The researcher made a connection that not all AA members used God as a Higher Power, but some chose to use the AA fellowship and its social support system as their Higher Power to aid in recovery. Therefore, I think it was imperative that I measured both spirituality and social support in my study as mechanisms related to recovery among AA members as there might be overlap in how members define spirituality in terms of a form of social support through the fellowship of AA even though this was not how my chosen scale measured spirituality (Piedmont, 2014). In addition, Vaillant (2014) discussed how AA was a

spiritual program rather than one tied to any one particular religion in keeping with AA's

principles. It might be that spirituality and social support was helping people recover in

AA due to secure attachment through love and helping others through joy. It might be a

confounding variable that social support might also need to include how members were

helping others rather than just receiving support.

In summary, the researchers of the literature reviews considered in this section

mostly supported the hypothesis that spirituality/religiosity related to protection against

or reduction in substance abuse including alcohol abuse. Overwhelmingly, the

researchers called for more specific types of research in this area to examine further this

relationship in all its forms and in all populations. Therefore, I continued in this line of

research.

Spirituality Qualitative Research Study

Besides the previous literature review articles that were mostly qualitative in

nature, I did come across one purely qualitative research study by Shamsalinia, Norouzi,

Khoshknab, and Farhoudian (2014). These authors admitted that spirituality related to

the reduction of substance abuse and enhanced recovery in past research. These

researchers examined how spiritual experiences affected recovery among addicted

persons. They collected qualitative data from 16 male and six female Iranian substance

abusers, which they used purposeful sampling to collect in order to balance the ratios of

gender and separate recovery phases. The researchers used semi-structured interviews.

The researchers found two separate themes: spirituality and recovery, and a new life

perspective. They subdivided the former into categories including religious upbringing,

religious teachings, exchange experience, and family and societal support. The later was subdivided into categories of calmness and development of spirituality. "Spirituality meaning religion" was a common thread throughout. The researchers concluded their results were useful to makers of policy, providers, families of addicted persons, and the addicted persons themselves. The researchers believed that helping addicted persons find spirituality could help them cope with substance abuse and prevent relapse. They encouraged addicted persons and their loved ones to do spirituality related therapy at substance abuse facilities, promoting addiction facilities cooperation within the different disciplines, and teaching families how important spirituality is in rearing mentally healthy children through media.

The Shamsalinia et al. (2014) study was qualitative in nature, so they formulated questions instead of starting with them. The researchers mentioned having checks and balances with outsiders in the community and otherwise for their methods, results, and research in general. Limitations in this study included small sample size with limited generalizability for that reason and also because of the qualitative nature of the study.

Shamsalinia et al. (2014) provided some ideas for my research. The emphasized the importance of including families in encouraging spirituality in substance abusers. They showed how spirituality that was first encouraged in the family and society helped foster a tendency for spirituality in these adults. Perhaps this was evidence of how social support in the form of families was also important. This might also be a cultural difference because of how much Iranian culture values family compared to traditional western cultures, and therefore I screened for race in my study. Similarly, the addicted

person showed that religiosity in the family could add to life meaning because the members had similar spiritual beliefs (Anderson, 2009). Therefore, both spirituality and social support might be tied to each other and related to my study in an enmeshed way, which I needed to factor for.

The researchers showed differences between how men and women used spirituality (Shamsalinia et al., 2014). Men tended to use spirituality only in their early recovery, and women used spirituality throughout. Women tended to migrate more to religious activities than men. The researchers found huge differences between genders in terms of how much time they spent for spirituality and committing spiritually for healing. Men used spirituality mainly only to cope with severe life stressors or grief over the loss of loved ones. Women showed more commitment to spirituality, religiosity, prayer, and worship throughout recovery compared to men. Women showed comparatively more improvement in treatment, contentment, and wellbeing as well as less substance abuse, suicidal tendencies, and anti-social behavior as related to their spirituality. Women were more grateful for God's favor and kindness in terms of their healing compared to men. Women had a deeper and more continuous spirituality and religious commitment than men did in terms of turning to these resources in relation to their needs. The researchers attributed these differences to possibly different religious upbringings of men and women. They also thought that perhaps spiritual needs of men and women differed leading to different utilization of spirituality.

Therefore, I collected extra information on gender (Shamsalinia et al., 2014). However, this might also be evidence of racial or cultural differences in gender utilization

of spirituality because these were Iranian substance abusers, and so I screened for race as extra information in my research. The researchers speculated that some of the gender differences in this group might have been due to Iranian culture that encouraged women to be involved in religious activities throughout their lives but not men. Researchers from a similar U.S. study showed that women only prayed when they were desperate in their addiction compared to this study showing they prayed all throughout their recovery in accordance with being raised in Iranian religious culture (Wright, 2003).

Lastly, Shamsalinia et al. (2014) repeatedly referred to previous research showing that having a purpose and life meaning, spiritual activities like prayer, meditation, and religious activities buffered against substance abuse among recovering addicted persons (Morjaria & Orford, 2002). I focused on spirituality including life meaning and purpose, spiritual activities, and religious activities. Similarly, the authors of this study talked about spiritual coping and spiritual growth as two aspects of spirituality in addicted persons. Therefore, I explored both aspects of spirituality in my study.

Again the Shamsalinia et al. (2014) qualitative research pointed to the positive relationship between spirituality and reducing substance use and abuse or enhanced recovery. The researchers in this article pointed to using quantitative research to further explore these concepts. Therefore, the present researcher explored this relationship between spirituality and specifically alcohol abuse through mostly quantitative means.

Spirituality Quantitative Secondary Analysis Studies

Besides qualitative research, there was a plethora of quantitative research on the topics of spirituality, religiosity, substance abuse, and AA (Shorey, Gawrysiak,

Anderson, & Stuart, 2015; Schoenthaler, Blum, Braverman, Giordano, Thompson, Oscar-Berman, & Demotrovics, 2015). Several of these studies included secondary analyses of previously collected data on these subjects. Here, I review a number of these articles relevant to my research study.

Shorey et al. (2015) emphasized the importance of examining depression in addicted clients in treatment as depression is related to treatment failure. The researchers suspected that mindfulness and spirituality might mediate the relationship between depression and substance abuse. The researchers did a secondary analysis of 105 men in residential substance abuse treatment by looking at their patient records specifically for mindfulness and spirituality with these variables' relationship to depression. The average age of these individuals was 41.03 with a standard deviation of 10.75. The researchers examined depression in terms of affective, cognitive, and physiological domains. The researchers found that there was a negative relationship between mindfulness and spirituality with depression. Mindfulness remained negatively related to depression even after controlling for age, alcohol consumption, and drug use. After controlling for these same factors, spirituality remained negatively related to only cognitive forms of depression. The researchers concluded that mindfulness interventions might help reduce substance use as well as depression in this population.

I found Shorey et al. (2015) had restrictions including not being able to determine causation because of the cross-sectional design, not knowing whether spirituality and mindfulness predicted depression over time because of a lack of a longitudinal design, limited generalizability due to no diversity and no females, and debate over how to

properly assess mindfulness as well as spirituality with their many dimensions. The researchers also admitted the lack of social and cultural contexts in their study.

Shorey et al. (2015) provided some ideas for my research. The researchers successfully used scales to measure different concepts including spirituality in their research although they used secondary analysis of records. They found that spirituality related to reduced substance abuse and reduced depression on the cognitive level. Therefore, I wanted to ensure that my scale for spirituality could detect cognitive aspects of substance abuse and depression if I chose to measure depression. This cognitive aspect might be a confounding variable if I measured spirituality in ways besides cognitively.

Shorey et al. (2015) looked at depression, spirituality, and substance abuse. Along those same lines of thinking, Schoenthaler et al. (2015) studied relapse and substance abuse as it related to spirituality with deviance. These researchers recognized that the past research had shown a connection between spirituality/religion and deviance including substance abuse. The researchers based this study on Durkheim's theory of socially expected behaviors or norms explaining the relationship between deviant behaviors such as substance abuse and religiosity or spirituality. He claimed that deviance resulted when norms were absent (anomie), and he postulated that deviance decreased in the presence of spirituality in someone's life because it promoted norms and social ties. The researchers also hypothesized that mishaps in the rewards system in the brain, including the reward deficiency syndrome, could also lead to deviance, so the

researchers explored if greater spirituality and religiosity could lessen substance abuse and relapse.

Schoenthaler et al. (2015) used the National Institute of Drug Abuse drug addiction treatment outcome study data and looked at post hoc relapse in 2,947 persons included in the 12-month post intake interviews while measuring five aspects of spirituality. The researchers found a relationship between less spirituality and greater relapse rates as well as higher spirituality with greater remission raters with the exception of crack cocaine. There was a significant relationship between cocaine, heroin, alcohol, and marijuana with preventing relapse across all five measures of spirituality including religious beliefs, religious service attendance, reading religious literature, watching religious shows, and meditation or prayer. Within all five aspects of spirituality, spiritual persons had 7 to 21% less use of alcohol, cocaine, heroin, and marijuana use compared to those who were not spiritual. In contrast, nonspiritual crack cocaine abusers used significantly less compared to their spiritual counterparts. Weekly religious service attendance related more strongly with remission compared to the other five aspects of spirituality, and this aspect was the only one involving the most social networking in line with Durkheim's social bond theory. The researchers concluded that stronger spirituality and religiosity significantly related to remission from substance abuse except for crack cocaine. Similar to 12 step sponsoring, substance abusers might find value in spiritual and religious practices such as weekly religious service attendance as it was significantly related to remission rates. Clinicians might find value in spirituality and social networking from it in substance abuse treatment.

Schoenthaler et al. (2015) had constrictions including inability to imply causation due to doing a correlational study, no comparative validity or reliability of the instruments that were originally from government wording, limits of ordinal data statistically, assumptions that religious service attendance equated to social interaction when it might not, and uncontrolled confounding variables leading to relapse. Again, because of the correlational nature of the study and dated sample, the results were not necessarily generalizable to today's population of drug-addicted persons. The researchers also did take into account differing social and cultural contexts by mentioning socioeconomic status and also the multicultural makeup of the data set.

Schoenthaler et al. (2015) provided insight to my research study. The researchers found significant relationships between spirituality and remission only for certain drugs, and they found the greatest significant relationship between spirituality and alcohol (6%-17%). Therefore, I examined alcoholics rather than all drug users. The researchers postulated that they found no such significant relationship between crack cocaine users mainly because of their very low socioeconomic status. Therefore, socioeconomic status might be a confounding variable in my study because I did not screen for it. The researchers also found that the measure of spirituality most related to social networking in terms of weekly religious service attendance showed the most significant relationship to remission. Therefore, I examined social support and including measuring similar aspects of religiosity. I looked at several measures of spirituality and religiosity instead of only general terms so I could compare results between these aspects.

On the other hand, these researchers examined dated material from the 90's, and I wanted to update findings by looking at new data from today. The researchers also mentioned that part of their rationale for studying this topic was to validate the value of 12 step support groups such as AA and Narcotics Anonymous that used spirituality in their processes for the aid of substance abusers. These researchers with their results all validated the value of doing my research.

Unlike the previous studies that examined substance abuse and spirituality over a fixed period, Moscati and Mezuk (2014) wanted to study these concepts over the lifespan and their relationship to one another. These researchers acknowledged the recent surge of research investigating the relationship between religion and health over the past few years. The researchers wished to further study the buffering relationship between religiosity and substance abuse by looking at differences in religiosity over time as they related to substance abuse. The researchers did a secondary analysis of 6203 individuals in the National Comorbidity Study–Replication data set. They explored changes over time from youth to adult ages in religiosity with their relationship to substance abuse including alcohol, tobacco, and other drugs. The researchers used multivariable logistic regression and tested for confounding variables including demographics, childhood familial dissension, and depression. The researchers found that there was a negative relationship between religiosity and substance abuse of all kinds, but this relationship was variable according to the level of religiosity in the youth years. Related to stability in religiosity throughout the lifespan, even a 2 unit religiosity reduction from youth age related to the amplified chance of illicit substance use in the previous year. Surprisingly,

a 2-unit religiosity boost also related to the amplified chance of illicit substance use in the previous year. Similar relationships formed in regard to past year and lifespan use of alcohol, tobacco, and illicit substances. The researchers concluded that great increases or decreases across religiosity over the lifespan relate to substance abuse. The researchers encouraged further research into studying the lifespan in regard to studying the relationship between religiosity and substance abuse.

Moscati and Mezuk (2014) had certain set-backs. The researchers did not ask about specifics in the lifespan but only religiosity "growing up," so there is not a definite, clear relationship between time of onset of religiosity and time of onset of substance use and abuse. Substance abuse may have begun before, during, or after the practice of religiosity in the person. The self-reporting nature of the study also left room for self-reporting error and social desirability bias. On the other hand, the use of national data made the study more generalizable.

Moscati and Mezuk (2014) contributed to my research ideas. They revealed one more confounding variable in changes over the lifespan in religiosity. Of note was the fact that even increases in religiosity over time were associated with increased substance abuse. The researchers of this study postulated that perhaps persons becoming more religious at a later stage were doing so in response to life stressors, which was a common reason to turn to religion, and these stressors were also factors that led people to abuse substances. Therefore, increased spirituality/religiosity in my study might relate to increases in substance abuse instead of decreases, and I did not track changes in spirituality over the lifespan. I watched carefully for these types of results and better

understanding of the mechanisms behind them. On the other hand, decreases in religiosity here related to increases in substance abuse, which was consistent with my hypothesis that greater spirituality would be associated with less alcohol abuse.

Another set of researchers specifically looked at adolescents and how their private or public religiosity related to protecting against substance use and how in adolescence (Salas-Wright, Vaughn, Maynard, Clark, & Snyder, 2017). These authors recognized that past research showed that religiosity among juveniles was related to substance abuse and use, but not many researchers through these research articles showed through which pathways religiosity protected against substance abuse and use. Therefore, the researchers of the present study wished to explore the connections between religiosity, seeking sensation, acceptable moral norms, and substance use among juveniles. The researchers did a secondary analysis on 18,614 juveniles' data from all over the U.S. using negative binomial regression and path analysis to explore how religiosity related to cigarette, alcohol, and marijuana use. The researchers found a moderating relationship between private religiosity between risk characteristics and substance use. Both public and private religiosity related to accepting substance use norms, and these were then related to substance use. The researchers encouraged further research into religiosity and substance abuse and use among juveniles.

Salas-Wright et al. (2017) had some set-backs and strengths. The researchers' use of such a large national sample made generalizability more feasible compared to other studies that centered on certain geographic areas. However, they measured public religiosity from only one item on a scale and ignored other nonreligiously related factors

that might have affected substance use apart from spirituality such as youth group

attendance and parenting. In addition, the researchers did not distinguish between

different denominations and religions, though other research had shown differences in

those areas. The responses came from self-report data that could be subject to social

desirability bias and reporting error. The researchers excluded individuals in institutions

in their data set. Therefore, the results might be skewed. Also, there could not be cause-

effect conclusions from the correlational data.

      Salas-Wright et al. (2017) provided valuable information for my research. They

had revealed there was yet another confounding factor in moral norms that affected

substance use behavior more than religiosity in the case of these adolescents, and might,

therefore, have similar effects in adults. Also, the researchers showed that private

religiosity had more effects on risk factors and substance abuse compared to public

religiosity at least among those with tolerant moral norms towards substance abuse and

use. Therefore, I examined both types of spirituality/religiosity.

      Similar to the previous article, another set of researchers examined how different

types of religiosity might be protective factors among adolescents and young adults

specifically for alcohol use (Porche, Fortuna, Wachholtz, & Stone, 2015). These authors

did a secondary analysis of 900 young adults 18 to 29 years old including data from the

National Comorbidity Survey Replication Study. The researchers explored how

religiosity, decisions related to religiosity in childhood and young adulthood, and

hardships in childhood all related to alcohol use. The researchers found a buffering effect

for childhood religiosity in terms of early-onset using and later alcohol

abuse/dependence. However, childhood religiosity did not advert how much childhood difficulty affected early onset of problem using when examined through linear regression. The degree of buffering against using in terms of religiosity was different according to gender, ethnicity, and difficulty in childhood. The researchers recommended the use of religious preventive treatment for young people especially in religiously oriented facilities based on these findings. The researchers also encouraged the incorporation of religiosity and spirituality into mental health treatment for those who are so inclined.

Porche et al. (2015) had constraints. Again, these researchers based the results on self-report data that could have reporting errors and social desirability bias. The reporting might also be skewed because these adults were reporting broadly about childhood attitudes and behaviors related to religiosity. The researchers based the data on dated secondary analysis, which might not apply to today's population. The researchers ignored other contributing factors to substance abuse that may be confounding variables such as peer influences. They also ignored subsets of races.

I found valuable information for my research in the Porche et al. (2015) article. Again, there is more confirmation that there was a connection between religiosity and substance abuse, particularly alcohol abuse at least among young adults. However, I recognized confounding factors including childhood adversity and religiosity that might skew results in adults. The present researchers also pointed out that females were overall more religious and this influenced their not participating in later drinking and alcohol abuse. The researchers noted that there were racial differences in alcohol abuse and religiosity. Asians and African Americans had lower rates of regular and abusive

drinking compared to Caucasians. Caucasians also had lower rates of religiosity in childhood. The researchers did not show differences between denominations on alcohol abuse level, but simply affiliating with any denomination compared to not showed lowered alcohol abuse. The researchers also showed differences according to certain types of childhood adversity in terms of substance abuse regardless of religiosity. These included such things as parental use, maternal depression, and neglect, which were all risk factors. These risk factors might be yet other confounding variables that I was not looking into. However, I studied ethnicity/race as well as gender in my study as extra information as these authors justified doing.

Unlike the previous articles that focused on adolescents, some researchers focused on studying spirituality/religiosity and alcohol abuse among adults (Krentzman, 2017; Meyers, Brown, Grant, & Hasin, 2017). One such researcher specifically looked at gender differences among these factors for persons in treatment (Krentzman, 2017). This author examined both genders for alcoholism and its relationship to spirituality and religiosity over 30 months while holding other variables constant by doing a secondary analysis. The researcher sampled 92 males and 65 females who were new in treatment and assessed them on these variables. The researcher used multiple regression to analyze beginning stats. The researcher used multilevel models to analyze the participants in the early stages of recovery over 6 months and later stages of recovery from six to 30 months. The researcher tested for seven types of spiritual and religious domains. In early recovery, women showed comparatively greater levels of other-forgiveness than men, and they showed lower levels of use of unhealthy forms of spiritual coping than

men. In later recovery, women showed significantly higher levels of increase in self-

forgiveness compared to men. The researcher hypothesized that they might attribute

these differences in unhealthy religious coping and forgiveness to gender differences in

shame and guilt complexes and how to resolve these issues. The researcher encouraged

other researchers to further explore if these spiritual differences between men and women

were beneficial to women in recovery.

Krentzman (2017) had restrictions. The sample was mostly Caucasians from the

Midwest, so there was limited generalizability. The researcher defined gender strictly in

the traditional sense of male and female, and emerging definitions of gender may affect

such research in the future. Individuals of the sexual minority had traditionally higher

substance abuse issues; therefore, this author's results might not accurately portray

individuals in sexual minorities. The author examined multiple factors including age,

drinking per day, and AA participation. However, it could not control for confounding

variables including corporate religious involvement and childhood spirituality level.

Krentzman (2017) examined factors that are important for my research study.

Unlike in this study, I gathered my own data points from participants instead of

performing a secondary analysis on others' work. I also studied multiple factors of

spirituality because as this author showed, there were some aspects that might increase

and others that might decrease. The author also demonstrated clear differences between

the genders in terms of spirituality and religiosity changes over time as these related to

alcohol abuse. Therefore, I also tested for gender differences in my participant pool

along the lines of these same variables for extra information in the study. The author

might be pointing to another confounding variable in my research including feelings of

shame or guilt, which might account for gender differences in spirituality, to begin with.

I also did not test changes over time, and the simple passage of time might affect

spirituality levels of certain types of spirituality and religiosity.

Similar to the previous article, Meyers et al. (2017) recognized that religiosity

buffered against alcoholism and other health concerns. They also recognized that past

research showed that this relationship appeared stronger among African Americans and

Hispanics in contrast to Caucasian Americans, but no author had specifically shown this

relationship for sure. These researchers did secondary analysis of National

Epidemiologic Survey of Alcohol Related Conditions data of 21,965 individuals from

2004-2005 to explore how public religiosity and intrinsic religiosity related to alcohol

consumption and alcoholism as they related to whether a person was African American,

Hispanic, and Caucasian. They measured public religiosity by religious service

attendance and size of the religious social group as well as intrinsic religiosity by the

importance of beliefs. The researchers found that public religiosity correlated with

alcoholism. Greater service attendance correlated with lower alcoholism rates and this

relationship was greater among African Americans compared to the other racial groups.

For Caucasians, greater levels of intrinsic religiosity correlated with lowered levels of

alcohol use, and this relationship was stronger for this group compared to other races.

The researchers concluded that among U.S. adults, greater self-reported public religiosity

buffered against risk for alcoholism. African Americans might have more protection

through public religiosity and Caucasians as well as those Hispanics frequently attending

religious services might have more protection through intrinsic religiosity from alcoholism and alcohol use. The researchers attributed the differences among the different racial groups to the different cultural drinking norms and religious entities.

Meyers et al. (2017) had confines. They collected the original data from lay interviewers rather than clinicians, and they based the results on self-report. Therefore there might be self-report bias and social desirability bias as well as other types of skewing of the data. There was also attrition among the original participants resulting in perhaps a lower rate of the disorder reported. The correlational nature of the study could not imply causation. The researchers used the race and ethnicity options that the U.S. Census board used. These options were very encompassing in nature rather than specific and did not account for persons belonging to multiple groups. The researchers also ignored other nonreligious aspects that might contribute to alcohol use and abuse including family, societal norms about using, and genetical or other related factors.

Meyers et al. (2017) contributed to my understanding for my research study. The researchers showed that there were differences between different races and ethnicities in regard to both religiosity and how this related to alcohol use and abuse. Therefore, I studied different aspects of religiosity/spirituality, and I collected extra information for different racial groups for alcoholism. These researchers brought up another confounding variable in that they measured religious social support, but I did not look specifically at religious social support, which in this study did relate to alcohol use and abuse. I also did not examine the reasons why different races might have different types of religiosity or how these both related to alcohol use and abuse.

In summary, most of the researchers of the quantitative secondary analysis studies presented in this section again confirmed a strong relationship between various types of spirituality/religiosity and reduction in substance abuse including alcohol abuse (Krentzman, 2017; Meyers et al., 2017). This finding was confirmed over the lifespan, in different age groups, across genders, and among different races/ethnicities though in various degrees and forms. However, many of these researchers used data that was older instead of recent, which pointed to the need for more direct data collection as I did in my study.

Spirituality Quantitative Direct Analysis Studies

Unlike the previous set of articles, several researchers did a direct analysis of their own newly collected data (Diaz, Horton, & Malloy, 2015; Wilcox, Pearson, & Tonigan 2015). These quantitative primary analysis studies explored the relationship between spirituality/religiosity and substance abuse or alcohol abuse with various other variables also factored in. Most of the researchers again supported that there was a positive relationship between spirituality and reduced substance use.

One set of researchers looked at attachment style, spirituality, and depression among those in substance abuse treatment (Diaz et al., 2015). These authors noted that in the past researchers found that attachment and spirituality buffered individuals in substance abuse treatment from getting depression. The authors tested both of these protective factors at the same time in this study, unlike previous studies that examined either one or the other in relation to depression among substance abusing clientele. Specifically, the authors studied how secure or insecure attachment, spirituality in terms

of life purpose and meaning, and felt relationship with God related to depression among addicted persons. The researchers used a cross-sectional design, sampled 77 persons in substance abuse treatment, and included the use of self-report questionnaires. The researchers analyzed the data using hierarchical multiple regression. The researchers found that secure attachment and higher life purpose and meaning significantly related to lower depression. Life purpose and meaning predicted depression better than other variables. The researchers concluded that clinicians might want to discuss attachment in treatment, but they might want to really focus on life purpose and meaning to increase positive outcomes in treatment. The researchers suggested future research might use a larger sample, look at attachment more comprehensively, and look at how to increase life purpose and meaning among the addicted population.

Diaz et al. (2015) had restrictions including small sample size, limited generalizability because the sample came from one facility, limited generalizability because most of the clients were nonHispanic Caucasians and a lesser functioning clientele, insufficient examination of the various aspects of attachment because of the scale chosen, lack of control group leading to no causation implications, and not enough clients who had a dismissing attachment style who were least likely to seek out treatment. The researchers did not consider differing social and cultural contexts in this study.

Diaz et al. (2015) helped provide ideas for my research. They had an interesting scale for spirituality and religiosity, the Spiritual Well Being Scale, which I may have used if I could not have obtained the ASPIRES. In particular, I also looked at existential meaning and purpose in life as aspects of spirituality that I tested for because these

aspects of spirituality acted as a buffering agent against depression and addiction in various studies. These scales all included these aspects of spirituality as well as other aspects mentioned in this study that I could compare to other studies. In particular, these researchers found that relationship with God and the perceived image of God did not affect depression and outcome in treatment. The researchers make the point that 63% of addicted persons in the study had depression, which might be a confounding factor leading to failure in AA. They brought up issues of attachment that affected how addicted persons related to their Higher Power or God, which in turn might affect their recovery. Therefore, attachment might also be another confounding factor both for spirituality and success in AA. The researchers also noted that in the past research there were some effects of marital status that might be something that might be yet another confounding factor in my study. Namely, being married had a buffering effect against addiction.

Similar to the previous study, other authors from another study examined the relationship between long-term AA attendance and spirituality on depression for alcoholics (Wilcox et al., 2015). Here, the authors used quantitative correlational longitudinal methods to study the effects of reducing alcohol consumption, attending AA, completing the 12 steps, and spiritual progression on depression levels of alcohol addicted AA participants. They measured drinking and AA attendance with semi-structured interviewing using several scales. Using these tools, the authors repeatedly measured 250 new AA attendees at intervals over 24 months. Among the 85% of the AA members who remained in the study, the authors found that a reduction in drinking

correlated with decreased depression levels over time. After controlling for formal treatment and drinking habits, the authors demonstrated that attendance in AA, completion of 12 step work, and spirituality also each correlated with a reduction in depression over time.

Wilcox et al. (2015) had both strengths and limits. They used scales that were valid and reliable according to empirical research testing in previous studies. They used a large number of participants to gain credibility, validity, reliability, and generalizability for their study. They had a mixture of different cultures, genders, socio-economic and marital statuses represented in the study. However, the authors had an attrition rate of 15%, and these participants might have reported different results than those who remained in the study. The authors also did not do an attrition analysis. The authors might have compromised generalizability of the study because they excluded members with extensive AA experience, but many AA members actually cycle back and forth through AA as they struggle in their ongoing recovery. Their diverse sample was 40% Hispanic, which may prevent generalizability to other parts of the country with a different race ratio. The results came from self-report, and the participants might not have answered truthfully. The authors neglected to ask the participants about their use of anti-depressants and formal depression treatment that might have affected depression rates. Lastly, the authors only asked participants about general 12 step attendance but not specifically about AA attendance though they recruited only AA participants at the beginning of the study.

Wilcox et al. (2015) provided research into whether AA attendance, 12 step work, and spirituality impacted depression. In the past, other research on AA only focused on studying the associated drinking reduction and recovery. The authors encouraged others to use similar research methods to further study the impact of these variables on depression, other mental health disorders, and addiction recovery. Researchers could use the results of this study to better motivate recovering alcohol addicted individuals' participation in AA to help with their often co-occurring depression. Clinicians could use the results to better design counseling recovery groups modeled after the AA model including the spiritual and depression aspects. The research could justify the qualitative exploration of the relationship between AA attendance, 12 step work, spirituality, depression, and addiction recovery among AA addicted members. Similarly, I examined the relationship between spirituality and sobriety as a measure of success in AA among addicted members. The researchers of this study showed that there was a relationship between those two variables. I also used scales to measure some of the variables though not through interviewing.

Another set of researchers focused more on how lifetime AA attendance might act as a predictive factor of spiritual gains as these related to relapse and recovery (Tonigan, McCallion, Frohe, & Pearson, 2017). These authors examined how AA attendance over the lifespan related to gains in spirituality for alcoholics searching for help. They sampled 246 alcoholics involved in two out of the total three locations associated with the Relapse Replication and Extension Project. The participants were 63% men, almost 40% single, and 34 years old on average with a standard deviation of about 8 years. The

researchers used the AA Involvement questionnaire to ascertain AA attendance over the lifespan, used the Religious Beliefs & Behaviors Questionnaire to ascertain spirituality, and used Form 90 to ascertain percent days abstinent and drinks per drinking day. Initially, participants involved with AA longer also had higher alcohol impairment, but age was not relative to these factors. The longer AA history related to higher levels of AA participation. Spirituality positively mediated the relationship between AA and percent days abstinent as well as drinks per drinking day. However, this mediation level was not different between different levels of AA lifespan participation. Long AA attendance over the lifespan did not affect the level of AA related spirituality. The researchers found value in the level of lifespan AA participation because it had a predictive relationship to how and how much participants continued in AA participation.

Tonigan et al. (2017) had constraints. The criteria for the participants greatly limited the sample and might prevent greater generalizability. The researchers measured the variables over several spans of 2 months each, but spirituality was measured using a scale only at the start, six, and 12 months. This discrepancy might have resulted in skewed results especially when examining changes occurring in spirituality near the onset of initial AA participation. The researchers also admitted that their choice of how to define variables including AA history might have skewed results such as not including whether or not participants were working the 12 steps.

Tonigan et al. (2017) aided in my understanding for my own research study. Their use of Form 90 was similar to the questions I used to measure of sobriety in my study. The researchers revealed that spirituality mediated the relationship between AA

participation and sobriety as measured by percent days abstinent and drinks per drinking

day. However, the researchers found that the level of lifespan participation did not

determine differences in spirituality. I considered these points when doing my study.

These researchers measured different types of spirituality and religiosity just as I did

including feelings about God and prayer or meditation. They found all these types of

spirituality had an impact on the relationship between variables in the study. The

researchers recommended further research into more specific subtypes of the types of

spirituality they listed such as the specific types of prayer.

Yet other researchers examined specifically religious support and struggle as

these factors predicted the quality of life in AA while moderated by the length of

abstinence (Zarzycka, Ziółkowska, & Śliwak, 2017). These authors examined the

relationship between religious comfort and struggle with life quality in AA. They also

examined the interactive relationship between the amount of abstinence, religiosity, and

life quality. The researchers sampled 100 AA participants. The researchers used the

Religious Comfort and Strain Scale and Worthington and the Quality of Life

Questionnaire for Adults. They analyzed the data using correlation and found that

religious comfort related positively to life quality while negative thoughts about God

related negatively to life quality. Amount of time abstinent moderated this relationship.

More specifically, the results showed that AA members having greater lengths of

abstinent and more religious comfort also had the greatest life quality.

Zarzycka et al. (2017) had constraints. This was a Polish sample of participants.

The researchers' use of correlation did not allow for causal inferences, and this cross-

sectional design did not allow for the capture of changes over time. There was lots of variation in age and length of abstinence among the participants, and commonly religiosity changes over the lifespan, so these results might have been skewed. These researchers could not capture changes specific to a person's stage on the 12 steps for the participants. All the factors mentioned limited generalizability to the whole population of AA members. The way the researchers defined abstinence time in terms of months might have conflicted with some participants whose abstinence started when they first started AA. Therefore, these two variables might have confounded the results.

Zarzycka et al. (2017) contributed information that was valuable for my study. The researchers collected their own data as I did. The researchers also used scales to measure the variables in the study as I also did. The researchers revealed some more confounding variables for my study including negative aspects of religiosity such as having a punishing or harsh image of God. Persons might claim to be spiritual in my study but have a negative relationship with God, which actually hindered their life quality as well as their sobriety. Length of abstinence also moderated the relationship between religiosity and sobriety, so length of abstinence might also confound my results instead of the other way around with the factors I studied, such as perceived social support that was an aspect of life quality, as I hypothesized for my study.

To further explore spirituality similar to the previous studies, another set of researchers studied how different dimensions of spirituality related to decreased drinking in AA (Krentzman, Strobbe, Harris, Jester, & Robinson, 2017). These authors acknowledged that past research had found a connection between increased spirituality

and participation in the spiritual AA program. However, they also acknowledged that those not in AA sometimes use spirituality in their recovery. The researchers aimed to look at new territory by exploring connections to spirituality among those decreasing drinking who are not in AA.

The present researchers examined alcohol and AA-related behaviors as they connected to seven spiritual dimensions (Krentzman et al., 2017). They studied spirituality among 364 alcoholics five times over 30 months using multilevel models. At 6 months, the researchers examined how drinking and AA behaviors predicted future spirituality. Lowered drinking corresponded to more life purpose, forgiveness of self, and spiritual/religious practices after controlling for AA behavior. More participation in AA involvement connected to greater positive religious coping, daily spiritual experiences, forgiveness of others, and spiritual/religious practices after controlling for drinking. Neither factors predicted directions for spirituality. The researchers identified patterns of greater life purpose and forgiveness of self for alcoholics that practiced abstinence or were less severe in their drinking. Simply drinking less affected dimensions of spirituality associated with greater experience and maturation. AA connected to dimensions of spirituality that were part of the 12 steps and that were moldable. The researchers concluded that this information could influence recovery choices and help build the theoretical framework behind how spirituality changes during recovery over time.

Krentzman et al. (2017) helped me better understand some information related to my research study. These researchers examined how different dimensions of spirituality

were connected to AA involvement and reduced drinking. I similarly examined several

different aspects of spirituality because some might increase and some might not because

of AA involvement. Unfortunately, in the current study, I did not explore how reduced

drinking without AA involvement among addicted persons also affected spirituality.

Unlike the previous studies, some researchers chose to explore how prayer among

AA members related to neural brain imaging related to cravings as measured by fMRI

scans (Galanter, Josipovic, Dermatis, Weber, & Millard, 2017). The authors of this study

recognized that past research had shown that persons addicted to alcohol with cravings

prior to membership in AA often lost such cravings or greatly reduced them after being in

AA for many years. The researchers hypothesized that these members use of prayer in

AA might account for such a phenomenon, but prior research had not examined the brain

neurology behind this theory. The researchers examined how brain neurology correlated

to lowered cravings after AA prayer among long-term sober members. The researchers

sampled 20 such AA members and used self-reporting as well as functional magnetic

resonance imaging (fMRI). They studied the brain neurological reaction to normally

craving projecting pictures after three different grouping situations: after reading AA

prayers, after reading unrelated news events, and after the passive viewing of the pictures.

The researchers analyzed the data using random-effects robust regressions between the

main effect of the three conditions and the effect between main effects and self-report

scales. The researchers found that the prayer condition when compared to the other two

showed lower self-reports of craving, and increased certain neural brain activity. In other

words, AA prayer was associated with less craving as well as increased neural pathways related to attention and emotional control.

Galanter et al. (2017) had some constraints including using a convenience sample, small sample size, and therefore limited generalizability. The researchers indicated the need to replicate the study with a larger sample size. They also used regression analysis, which could not imply causation. The researchers had a diverse sample to represent the typical diversity in AA.

Galanter et al. (2017) contributed information to my research. I studied prayer as one aspect of spirituality in my study because I hypothesized that prayer and spirituality related to success in AA. Cravings might hinder success in AA as past researchers had shown cravings related to relapse. Therefore, participants' having cravings might be a confounding factor in my study that I did not account for. The researchers in this study also demonstrated that affiliation with AA or nonAA persons were not related to diminished cravings as much as prayer. Therefore, I was curious as to how much my studying social support along with spirituality showed any such relationship. These researchers used a survey instrument to measure spirituality just as I did.

One other study of interest that was somewhat related to the topics previously mentioned but indirectly involved some research on co-dependents of alcoholics who attended self-help groups and how their religious/spiritual values related to their levels of hope and life meaning (Wnuk, 2015). The author here examined how different types of religiosity related to life meaning and hope. The researcher sampled 40 persons in an Al-Anon support group in Poland. The researcher used the Santa Clara Strength of

Religious Faith Questionnaire, Daily Spiritual Experience Scale, Religious Coping Scale,

one-item question scales related to prayer frequency and religious service attendance

(mass), Purpose in Life Test, and the Herth Hope Index. The results were that positive

religiosity, prayer frequency, religious service attendance, and spirituality were key

aspects in relation to life meaning and hope. The frequency of spiritual experiences,

prayer, mass attendance, and feelings on life meaning all mediated positive religiosity

and associated coping. Positive religiosity mediated all these aspects as these related to

stress levels, the frequency of prayer, mass attendance, and level of hope. Wnuk (2015)

had restraints. The participants were Polish, it was a small sample taken from only one

Al-Anon meeting, and the study was correlational in nature. These were all limiting

factors for generalizability. The scales were the result of self-report, and this fact might

have skewed results due to social desirability bias and misreport. I found valuable

information in the Wnuk (2015) article. It was interesting to see that spirituality also held

value among a sister program of AA, Al-Anon membership. Again, here I saw the value

of looking into various aspects of spirituality. I also collected data directly through scales

as this researcher did. This researcher tied the spirituality into meaning in life, which was

my theoretical basis. I did not be test for mediation variables, but perhaps mediation

might be a confounding factor among my variables as shown here.

Lastly, this section includes some research information as related to the scale that

I used for my measure of spirituality and religiosity called the ASPIRES (Piedmont,

2014). The author, Piedmont, created a scale for measuring spirituality and religious

sentiments to use with a variety of populations including substance abusers as well as the

nonreligious and nonspiritual. This ASPIRES scale measured both spiritual transcendence and religious sentiments. It was at a seventh-grade reading level so that even noneducated persons could easily comprehend the scale. The scale measured aspects of spirituality and religiosity that are universal to all major faith traditions, which made it applicable to a wide range of persons. Piedmont and his associates have tested this scale cross-culturally with promising results despite being originally normed on mostly undergraduate, Caucasian women. The researchers showed acceptable to very good levels of all forms of validity and reliability in both the short and long forms of the scale. There was also a computerized version available. The researchers have used the scale to study a variety of constructs including the impact of spirituality and religiosity on addictions recovery.

Piedmont (2014) has tested his instrument on a variety of cultural and religious groups, making this scale very generalizable. He has also ensured that his entire scale and portions of it were all very valid and reliable, which added to generalizability. His research goal was making a scale that would measure diverse forms of spirituality and religiosity. He used research methods used to test this scale. The researcher did not delve into excessive detail about how to replicate this research methodology because he summarized the details about the scale's properties in this article. The researcher based his formulation of the scale on related spirituality research as well as on a panel of diverse cultural and religious persons who contributed to its formation. Although the original scale was normed on mostly female Caucasian undergraduates, the scale was retested multiple times on diverse populations and age groups (Piedmont, 2012). The

researcher contributed to the research in this field by making a scale that studied spirituality and religiosity that applied across faith traditions and cultures. There might have been some researcher bias as the founders of the scale were involved with spiritual research and might have been spiritual and religious themselves. The researcher demonstrated that the scale was a reliable and valid measure of spirituality and religiosity from the information provided.

Piedmont (2014) pointed to the importance of using sound research methods to ensure that a scale was valid and reliable as well as applicable to diverse cultures and ages when measuring spirituality or otherwise. I used the ASPIRES because it is multi-religious, multi-spiritual, and multicultural in nature. I used this scale in my research study because it was also sound in terms of validity and reliability. According to the researchers with their associated research, the ASPIRES appeared to accurately measure the construct of spirituality and religiosity as well as do this consistently. The researcher used this scale to even measure these constructs among those who were nonspiritual and nonreligious. Therefore, this scale seemed like a good choice to measure spirituality among addicted AA members because it was unknown whether they were spiritual or religious and the nature of their faith background. The ASPIRES was conveniently available in a computerized form, which was conducive to the planned online survey method of this current study. The former research showed that other researchers used the ASPIRES successfully on addicted populations, which made the scale a tangible option for this current study.

In summary, these researchers of quantitative primary analysis studies seemed to again point to the positive relationship between spirituality/religiosity with reduced substance abuse including alcohol abuse (Krentzman, 2017; Meyers et al., 2017; Wnuk, 2015). Many of these researchers emphasize how this relationship showed up through the positive characteristics of recovery in various forms. Therefore, these researchers that used designs closely related to my plans in general, whether literature reviews, qualitative, or quantitative all mostly added to my rationale for reexamining this relationship with my sample and justifying my research. I wanted to add to the existing body of knowledge by specifically looking at different previously unexplored aspects in depth including race, gender, and being mandated to treatment as extra information in my research study.

Social Networks, Social Support, Substance Abuse, and Alcoholics Anonymous

Another major component and predictor variable of the present study involved social networking and perceived social support as these related to the outcome variable substance abuse and AA. Therefore, the current researcher searched for such related articles. Most of the researchers of these studies showed a positive relationship between increases in social networks or perceived social support with a reduction in substance abuse as these also related to AA (Black & Chung, 2014; Galanter, 2014; Ten Have, De Graaf, Van Weeghel, & Van Dorsselaer 2014).

Social Support Literature Review Studies

It was sometimes again useful to look at past research to inform the present research and give future direction (Black & Chung, 2014). Some researchers chose to

review previous research through literature review to discover relationships between perceived social support or social network with substance abuse and AA (Black & Chung, 2014; Galanter, 2014). These researchers again showed a positive relationship between the increase in social network and decrease in substance use.

In one such literature review, Black and Chung (2014) found that previous research findings showed that addicted adolescents had small to modest success in substance abuse treatment with equal success across different types of treatment, and these researchers also showed that the addicted persons could not maintain these successes over the long run. The researchers reviewed research in hopes of finding some interventions that might help improve treatment outcomes in this population by examining the change mechanisms involved in treating both adults and adolescents, ages 11 to 18. The researchers honed in on known effective methods for adolescent treatment. Their review included experimental studies involving intervention mediators. The researchers found that literature about the change mechanisms of therapy was very sparse for adults and adolescents in substance abuse treatment. There were only four adolescent articles, and these included having a positive social network, motivation to stop using, and positive family authority figures as mediators of treatment outcomes. The researchers did not support therapy as a change mechanism, but these other change mechanisms instead despite therapy modality. The researchers concluded that these findings might be due to the lack of specific definitions and measurements for treatment change mechanisms. They suggested future research might examine neuroscientific

change mechanisms in the brain related to treatment success and different types of treatment adaptable to individuals' needs for recovery.

Black and Chung (2014) did a review of the literature so there might have been some constraints on implying causation in this study because they did not collect any direct data. They also admitted that because there was such a lack of literature on their topics of choice, the results might not be conclusive. However, the authors gave some future directions about the need for research in this area studying change mechanisms or the how of treatment for substance abuse for adolescents and adults.

Black and Chung (2014) provided valuable information for my research. One of the change mechanisms for this population was positive social support. This support might also be a change mechanism for adults, and I examined this mediator in the form of perceived social support among alcohol abusers in AA and how it related to success in AA. Similarly, in one of the articles that these researchers reviewed, the authors measured motivation to not use, another change mechanism related to positive outcomes in treatment, through attendance in 12 step meetings. Perhaps the persons I studied in my research were already motivated to change because of their attendance in AA, so this might be another confounding variable. Again, I checked for the age of the participants in my study as extra information because this study, unlike authors from a similar study with the elderly, showed that positive social support did affect treatment outcomes.

Almost in response to the previous study, another researcher doing literature review looked at the neuroscientific social and cognitive aspects of substance abuse and the mechanism of AA (Galanter, 2014). This author acknowledged that over the long-

term and during recovery, AA members altered their thinking and conduct. The researcher recognized that these changes could be explained neuroscientifically at the social and cognitive level because they are reflective of physical changes in the brain. In this study, the researcher aimed to explore up-to-date research related to these areas in order to aid better understanding of these changes. The researcher used review of the literature and built hypotheses for further testing on these concepts. The researcher first summarized how illicit drugs affected the brain. Then the researcher discussed brain imaging and how various mechanisms affected certain areas of the brain. These included mirroring and mentalizing as these related to empathy and mutuality. The researcher hypothesized that these two mechanisms might represent social interaction and influence in regard to the AA community. In addition, the researcher reviewed the mechanisms of integration and memory retrieval as part of AA membership as they relate to storytelling, self-image development, and development of values. The researcher proposed a model for acquisition of a Higher Power. The researcher concluded that the mechanisms of change involved with AA membership were far more complicated than what the reviewed research could represent and that there was a need for further research. However, despite this limited data, the researcher concluded that the review was valuable for better understanding how brain functioning related to the changes occurring in recovering AA members. The researcher encouraged further research on how neuroscience relates to the 12-step recovery program to better understand these changes.

Galanter (2014) admitted that there were many restrictions to this study. In this article, the researcher simply reviewed the literature giving ideas for future research.

Therefore, there was not yet any cause-effect proven relationships between variables. However, the researcher did provide ideas that the literature presented as common mechanisms in AA including spirituality and social interactions with aspects of both that related to my study. Therefore, Galanter (2014) informed my study. I further explored some of the common mechanisms listed for change in the study that the researcher hypothesized might show effects on sobriety or recovery in AA. These included spirituality as a relationship to a Higher Power and social support including social interactions, and I further examined these concepts in my study. Perhaps the information from my study might lead to further experimental research on whether these variables were associated with sobriety as a measure of success in AA recovery through brain imaging. That neuroscientific research needed to first have a correlational basis such as through my research to justify it. Therefore, this article gave me some direction for my research.

Social Support Qualitative and Mixed Methods Studies

Some researchers went beyond literature reviews and conducted qualitative research exploring the relationship between social networks or perceived social support with substance abuse (Melander, Tyler, & Schmitz, 2016). These researchers gave some direction for further quantitative research studies. They generated theoretical ideas and hypotheses to test further. One such study by Melander et al. (2016) recognized that homeless youth often concurrently abuse substances and admitted previous research had examined this issue with its health effects. The researchers of this study used interviews to explore the relationship between 19 of these youths' social support and norms for

substance abuse. All participants were age 16 to 21, and the researchers found four aspects of substance abuse in the social support including substance choices, substance safety, encouragement or discouragement, and substance use condoning. The researchers helped aid in understanding these youths' experiences of social support and perceived substance use norms for further study.

Melander et al. (2016) admitted to having constraints. These included small sample size with the qualitative exploratory nature of the study; the cross-sectional nature preventing the study of how social networks change over time; overrepresentation of women, LGBT, and youth in the sample in order to study HIV risky behaviors; and researcher bias because of looking for certain themes in the interviews crafted by the research questions. Again generalizability was limited for the mentioned reasons. The researchers did take into account differing social and cultural contexts.

I found value in the Melander et al. (2016) study for my research. The researchers pointed out that social networks for substance abusers could be helpful or detrimental in encouraging or discouraging substance use through peer pressure. Therefore, when I studied social support, I kept in mind that not all types of social support were beneficial. The researchers also found that among some social networks certain types of drugs were considered acceptable such as alcohol and marijuana while other types like heroin and crack cocaine were not. Therefore, these were confounding factors to consider when I studied alcoholics and support networks.

In another similar mixed method study, Osilla, Kennedy, Hunter, and Maksabedian (2016) reported that past research showed that social networks could be

either a good or bad influence on substance abuse and risky HIV behaviors among the homeless. These researchers made a computer-based social support motivational interviewing four-session class designed for homeless adults preparing to move out into independent housing. The researchers explored how well the workers and homeless participants perceived this intervention was at a certain supportive housing organization using repetitive beta testing. There were three male and three female workers, and there was eight male (seven African American, one Hispanic) as well as three female (two African American, one Hispanic) homeless participants. The homeless persons were substance abusers and had participated in HIV risky behaviors. Prior to the implementation of the intervention, the researchers held a focus group with the workers to determine how best to proceed with implementation for maximum reception. The researchers used semi-structured qualitative interviews after administering the intervention to get satisfaction reports from the homeless participants.

Osilla et al. (2016) found three themes in the interviews including that the intervention was useful in conversing about their social support, the visual representations were more useful to them rather than simply discussing social support, and the intervention encouraged them to positively change substance use and HIV risky behaviors. The researchers were the first to develop such an intervention with the help of the Housing First workers and homeless participants that included a motivational interviewing tool exploring the nature and makeup of social support networks. The researchers concluded that visuals were helpful with the motivational interviewing topical discussion about social networking to encourage changing a person's social network.

There were some restrictions in the Osilla et al. (2016) study. These included the small, purposeful sample size, using only a specific subset of the homeless population transitioning into permanent housing from supportive housing, and no ability to make claims on the effectiveness of the intervention because of the qualitative nature of the study. Therefore, there was limited generalizability of the findings. The researchers did take into account differing social and cultural contexts.

I found valuable information to use in my research from the Osilla et al. (2016) study. The authors showed how researchers could implement helping participants recognize problems in their social networks so they could change from unhealthy to healthy social networking in the future. They also recognized that providing visuals through the information on social networking was particularly helpful, so this was something to consider in my study to provide some kind of visual representation of the participants' social networking to help them decide to change unhealthy networking. The researchers also showed that not all social networks were beneficial to addicted persons in recovery but some were actually detrimental, so this was another confounding variable in my study that assumed social support was always beneficial.

Social Support Quantitative Secondary Analysis Studies

Unlike literature reviews and qualitative research, some other researchers chose to use quantitative methods (Ten Have et al., 2014; Sacco, Bucholz, & Harrington, 2014). In particular, they chose to use quantitative secondary analysis methods where they analyzed data that was previously collected. These researchers for the most part found a connection between social networking and perceived social support with substance abuse

but the results were contradictory to expected findings of relating to reduced substance use, and authors from one study examined how persons could increase social networking to keep from abusing substances.

One such study by Ten Have et al. (2014) recognized that there was a gap in the literature examining the relationship between mental disorders and violence in the research on the general population. The researchers here tried to bridge this gap by examining separate kinds of violence, making adjustments for victimization by violence, and keeping in mind the previous research with its limitations. The researchers did secondary analysis of data obtained through the first two rounds of the Netherlands Mental Health Survey and Incidence Study-2 (NEMESIS-2), which was a national general population face-to-face survey of 18- to 64-year-olds. The total sample size was 6646 persons. The violence categories included both physical violence and psychological violence with an emphasis with violence done to significant others, children, or other people. The researchers measured the DSM-5 mental disorders through the Composite International Diagnostic Interview Version 3.0 (CIDI 3.0). The researchers found that psychological violence was significantly more prevalent than physical violence, but both types of violence were equally associated with mental disorders. The researchers then controlled for sociodemographic factors and found most of the major groups of common mental health diagnoses were associated with violence. The largest relationships were between externalizing disorders such as chemical dependency, impulsivity, and antisocial personality. After controlling for violent victimization, negative life stressors and social network, most diagnoses no longer significantly related to violence. However, substance

use, especially alcohol use, was still significantly related to most of the different groups of violence. The researchers concluded that violence related to common mental illness types were due to outside causes besides mental disorders except in the case of substance abuse.

Ten Have et al. (2014) were unique in their research in that they examined how mental health related to both psychological and physical violence. Their limitations of the study included that it was in the Netherlands for Dutch speakers, violence of both kinds was from self-report, which might not always be accurate, and secondary analysis did not necessarily allow for causation conclusions. In addition, the researchers admitted that despite the findings that persons having mental disorders also had a greater likelihood of being violent, most mentally ill persons were not violent.

Ten Have et al. (2014) informed my study. These researchers found that after controlling for several factors including social support, most individuals' violence was accounted for. Among the exceptions to that rule were persons with substance use disorder and in particular alcohol abuse. If such persons were still violent despite having social support, I might also guess that social support did not help these persons stay sober either. This information was contrary to what I had hypothesized in my study. Therefore, I kept this information in mind when comparing my study's results to this one's on the relationship between social support and sobriety.

Similar to the previous study, Sacco et al. (2014) studied how stressors, perception of stress, social support network, and alcohol abuse related to each other among 4,360 alcoholics 60 years old and older in the National Epidemiologic Survey of

Alcohol and Related Conditions (Wave 2; 2004–2005). Among both genders stressors

related to alcohol abuse, but stressors only related to men for being a victim of crime.

More stress perception related to lower alcohol abuse for women but higher alcohol

abuse in men. The researchers concluded that stress related to alcohol use differently

between the genders. The Sacco et al. (2014) study had many constrictions including the

use of retrospective and self-report measures, and gender differences might exist in the

way men and women respond to stressful events in regard to alcohol, to begin with. For

example, men might turn to alcohol use and women might turn away from it.   The

information in the Sacco et al. (2014) study was useful for my research. The researchers

found that social support did not relate to alcohol abuse among older adults of both

genders. Therefore, I included age as part of the demographics section of my survey for

extra information because relationships between social support and lowered alcohol

abuse might not be apparent in the older generations but might be apparent in younger

generations. The researchers of this study thought that perhaps these findings were due

to older adults having friends who also use alcohol and these friends actually encourage

them to likewise use alcohol. In addition, life stressors might be a confounding variable

affecting alcohol abuse in my participants just as they were in this study. Unlike these

researchers, I used similar methods to measure variables in an actual sample of

participants rather than looking at secondary data and doing an analysis.

 Although the previous study's researchers showed that only certain types of social

networking were beneficial for addiction recovery, other researchers showed that it was

possible to change persons' social network positively to benefit their recovery among

dually diagnosed addicted incarcerated women (Nargiso, Kuo, Zlotnick, & Johnson, 2014). These authors concluded from past research that incarcerated women's social support availability was a mystery especially for those in danger of not succeeding including those having both depression and substance abuse disorders. The researchers of this study examined 60 such dually diagnosed incarcerated women utilizing both mental health and substance abuse treatment to learn about the characteristics of their social support including support strength, characteristics, type, and those which were able to transform in prison and outside of prison. The researchers analyzed the data using descriptive statistics and paired-tests. They found that these participants usually believed they had persons in their support network that were moderately accessible. Over one-fourth had no regular support network. While in prison these women significantly expanded their social network in terms of support and decreased the number of substance users in their network. Upon release, these women kept these gains and actually increased their positive social network. The researchers suggested that for dually diagnosed women in prison, it was possible to positively change their social support network while in prison and continue that change upon release. The researchers advised that clinicians use this information to target social support for these women during treatment. Nargiso et al. (2014) had restrictions. The researchers used secondary analysis. Limitations included small sample size, limited generalizability for that reason and also because it was a mostly Caucasian sample from one prison facility, and no ability to understand why and how social support helped these women due to the correlational nature of the study. Nargiso et al. (2014) had important information to

contribute to my research. The researchers used the MSPSS to measure social support among these participants who also were substance abusers. I kept in mind that social support might actually decrease in early recovery because addicted persons might cut off persons in their network that they formerly used drugs and alcohol with. Such a reduction might actually increase their sobriety. These researchers measured this aspect with another scale called the Important People and Activities Measure (IPA). In addition, depression also seemed to affect sobriety levels, so this was an additional confounding factor. These researchers made the point in the review that substance abuse was a problem because it related to reincarceration, crime, lack of gainful employment, and victimization. Therefore, finding ways to eliminate substance abuse was beneficial to society both financially and healthwise for the addicted persons.

Social Support Quantitative Direct Analysis Studies

In line with further quantitative research, some researchers chose to do a direct analysis of new data that they collected themselves (Monahan, Rhew, Hawkins, & Brown, 2014; Zhou et al., 2017). Some of these researchers found evidence to support the positive relationship between social networking or perceived social support with reduced substance use, and others showed that only certain types of support were so associated. I explored these articles as they related to my study. Monahan et al. (2014) admitted that adolescents more than other age groups tended to both be delinquent and abuse substances concurrently. The researchers in this study explored what developmental pathways occurred concurrently in about 2000 6th to 10th graders. They analyzed how peer delinquency and substance abuse related to abstinence, delinquency,

substance abuse, and the co-occurrence of these variables. They observed that these adolescents started out abstinent, graduated to delinquency, and transitioned to co-occurring delinquency and substance abuse. Once at this last stage, the youth would not likely return to previous stages. Peer pressure affected delinquency specific to particular domains in the earliest stage when the youth moved from abstinence to delinquency or substance use. Peer pressure more generally increased the level of delinquency or substance use or reframing from such behavior. Monahan et al. (2014) had restrictions. Limitations in this study included using measures of self-report that might have been unreliable especially with the adolescent population, using different time spans for measuring substance abuse (past 30 days) and delinquency (past year), not measuring the degree of involvement with such activities, and only gathering participants from small to medium size towns. All these factors might limit generalizability. The authors did not so much take into account differing social and cultural contexts.

I found the Monahan et al. (2014) study helpful for my research. One confounding variable that came up in my study in light of this research was that peer relationships might be detrimental to recovery rather than supportive. In this study, peers that used substances influenced the participants to use substances. I also dealt with self-reporting bias because self-report was not always accurate just as this study also hypothesized. Another confounding variable might be the developmental problems that co-occur with substance abuse like they did in this study. I could not know if these or other factors influenced substance abuse or if social support and spirituality alone were strong enough to buffer against it. Although these researchers conducted their study on

adolescents, it was possible for similar confounding variables to apply also to the adult population. Therefore, I collected age as extra demographic information in my research.

Unlike the Monahan et al. (2014), other researchers have examined social networks and support among the general adult population such as Zhou et al. (2017). They used a cross-sectional analysis to examine the relationship between perceived and received social support with these other factors with participants from two methadone maintenance treatment clinics that had private and public funding and were the largest of such clinics in Xi'an, China. The researchers found that patients with higher levels of social support had significantly higher scores on the health-related quality of life measures. The researchers controlled for individual characteristics and found the significant factors predicting health-related quality of life were good family support, ability to communicate, a service time that worked well with their schedule, reasonable charge rate for services, and higher levels of perceived social support. The researchers concluded that both received and perceived social support could predict health-related quality of life among patients in methadone maintenance treatment. Therefore, clinicians should consider social support variables to help clients manage their health and other interventions for these types of methadone maintenance treatment clients. However, the sample was Chinese, so these results might not apply to Western populations such as the United States. I used Zhou et al.'s study as a guide to consider whether direct social support was a confounding or contributing factor to sobriety in my study because I only studied perceived social support.

Some researchers have also looked at the lack of empathy among drug abusers and its relationship to social networking such as Preller et al. (2014). The researchers examined this social cognition deficiencies through mental perspective and empathy among both occasional and abusing cocaine users. They also examined how these factors related to actual life functioning socially. The researchers sampled 100 such cocaine users, including 69 recreational, 31 dependent, and 68 control participants. The researchers used the Multifaceted Empathy Test, Movie for the Assessment of Social Cognition, and Reading the Mind in the Eyes Test. To assess the size of the participants' social support network, they used the Social Network Questionnaire. Cocaine users of both types had lower levels of emotional empathy but equal levels of cognitive empathy compared to the controls. Dependent cocaine users had lower levels of mental perspective taking. Both types of cocaine users committed more crimes and had less social support. There was an inverse relationship between higher cocaine use and lower numbers of social support. Less mental perspective taking was inversely related to higher levels of cocaine use. The younger the participants started use of cocaine, the greater the impairment of empathy. The researchers concluded that cocaine users had life functioning related social cognition impairments and drug users should deal with these factors in treatment and prevention. Based on Preller et al.'s findings that more cocaine use related to less social support and more crime related to less social support, I included perceived social support as a possible factor contributing to success in AA. However, I did not study the relationship between perceived social support and empathy or mentalizing because they might be confounding variables.

Other researchers looked at related factors such as the types of social support that drug abusers had such as Atadokht, Hajloo, Karimi, and Narimani (2015). These authors recognized that family emotional situations and perceived social network could relate to treatment or relapse in substance abuse. The researchers of this study sought to understand how familial emotional expression and perceived social network predicted relapse outcome. The researchers used descriptive-correlation. The sample was 80 randomly selected persons from cluster sampling of referred persons at the substance abuse treatment facilities in Ardabil in 2013 to 2014. The researchers used the expressed emotion test and the MSPSS. The researchers analyzed the results with the Pearson's correlation coefficient and multiple regression analyses. The researchers found positive correlations between familial emotional expression and relapse rate and found a significant negative correlation between perceived social network and relapse rate. Analyzing the multiple regression showed perceived familial social network, and familial emotional expression significantly accounted for 12% of the total variance of relapse rate. The researchers concluded that the findings could affect substance abusers, their families, and substance abuse workers at treatment facilities to employ familial emotional expression and perceived social network of substance abusers to reduce relapse rates.

The Atadokht et al. (2015) article was important for my study. The researchers used the same measure (MSPSS) to study perceived social support that I used in my study. The authors found perceived social network related to lowered relapse rate. Therefore, I also surmised that similarly perceived social support related to greater levels of sobriety and success in AA. I also considered that familial emotional expression might

be a confounding factor from the results of the present study in my study that actually contributed to success or failure according to sobriety in AA.

In line with the previous study looking into types of social support, Kidorf, Latkin, and Brooner (2016) explored having nonusing family and friends as personal social support for opiate-addicted persons seeking treatment, and these individuals being willing to invite these outside persons to treatment as part of their recovery support network. The researchers sampled 355 such persons at a medically accommodated community treatment facility in Maryland. They used surveys to find persons having such nonusing social support. The researchers found that 98% of those sampled had at minimum one such nonusing person for social support, and the average was 3.7 such persons. On average most of these addicted persons lived within 1.8 miles of these persons. A little over 25% of the nonusing social support persons had a previous history of substance abuse, and about one-tenth of these persons were currently in treatment for it. The number of nonusing social support persons was different according to several characteristics at baseline. Almost 90% of the sampled individuals were open to asking at minimum one such nonusing person in their support system to aid their recovery in treatment. The researchers concluded that utilizing nonusing friends and family might aid addicted persons through community social support. Though Kidorf et al.'s sample was limited, they showed that females, African Americans, coupled persons, and those in treatment longer had more nonusing social support. Therefore, I included collecting information on the variables of gender and ethnicity when measuring social support as well as spirituality. The researchers also suggested that addicted persons might expand

their nonusing social support network through 12 step support groups and religious services attendance. Therefore, I studied social support in the context of recovery in AA and also studied spirituality including attendance at religious services.

Some researchers chose to specifically study how social networks related to addiction recovery such as Kelly, Stout, Greene, and Slaymaker (2014). These researchers acknowledged that past research had shown that social networking was important in substance abuse recovery. The researchers also recognized that past research on the addicted adult population had shown that self-help groups such as AA were helpful in recovery because of social support changes these brought about. The researchers hypothesized that such self-help groups might be even more useful for young adults because they normally surrounded themselves with nonsober social networks, and they recognized that no one had previously studied this phenomenon. The researchers hoped to use this research to help further the rehabilitation services of such addicted young adults and further the knowledge of how changes occur in recovery. The researchers sampled 302 young adults ages 18-24, about one-fourth female, and almost completely Caucasian in a residential treatment facility testing for treatment efficacy at intervals of 1, 3, 6, and 12 months. The researchers questioned them about their 12-step group attendance, their social support including the level of relapse risk of friends, and treatment assessment variables including the percentage of abstinence days or the percentage of hard drinking days. The researchers used hierarchical linear models for social risk changes over the periods of time and lagged meditational analyses testing the relationship between attending 12 step groups with recovery through social risk changes.

The researchers found participants had greater numbers of high-risk friends at the beginning of their treatment, but these declined over time while low-risk friends increased over time. Surprisingly, this increase in low-risk friendship support was not related to 12 step attendance, so that 12 step group participation was not a mediator in this case of treatment outcome. The researchers concluded that young adults benefitted from 12 step group attendance in their recovery, but this benefit was not directly through social support. The researchers thought that this disparity might be due to fewer young adult age persons available to be friends with young adults attending 12 step meetings. The researchers suggested doing further research on how exactly social support and 12 step programs help young adults in recovery.

Kelly et al. (2014) mentioned that their research might have limited generalizability due to their using only one 12 step oriented rehabilitative facility in the Midwest with a sample that was mostly Caucasian and male. Therefore, results might not generalize to persons of other cultures, other facilities, or other parts of the U.S. The researchers also acknowledged that their use of their chosen instrument to measure social support might not be applicable or appropriately adaptable to the addicted population.

I found the information from the Kelly et al. (2014) article useful for my study. I inquired about the age of my participants as extra information because this study showed that young adults did not benefit from social support via AA, but other research showed that older or middle age adults might benefit from social support in AA. Age might, therefore, be a confounding variable reflecting how and whether social support influenced success in AA. I also kept in mind that my chosen instrument measuring

social support did not distinguish between high-risk and low-risk social support in terms of addiction. Therefore, this might be yet another confounding variable. My participants might have higher levels of social support and yet not be benefiting from AA or otherwise progressing in recovery due to having the wrong types of social support from high risk for addiction individuals. The researchers here also used a certain Form 90 that was similar to my chosen measure of questions related to scales using a calendar, such as the TLFB, to determine sobriety and otherwise success in AA (Sobell & Sobell, 1988).

Similar to the previous study, other researchers did a pilot study of addicted young adults living at residential facilities in Australia (Mawson et al., 2015). These authors based their correlational, cross-sectional design study on previous theory and research supporting the argument that part of addictions recovery depended on changing a person's identity through relationships between social self, social associations, recovery capacities, and life worth. They measured these variables using a demographics questionnaire and multiple scales. The authors examined twenty persons of young adult ages 18–21 living in substance abuse residential treatment settings. They enlisted these participants from four youth substance abuse treatment places including three detoxification and one psychosocial rehabilitation places in Victoria, Australia. The authors interviewed them about the substance use of groups in their social associations and measures of life worth, recovery capacities, and social self. They used zero-order Pearson correlations along with descriptive statistics to analyze results between the variables at one point in time. Groups with lower levels of substance abuse had higher recovery capacities, higher nonusing group associations, and found that nonusing groups

were of greater importance in their social associations. Higher levels of identifying with and giving importance to nonusing groups related to higher levels of life worth, but placing higher importance on using groups related to reduced life worth. Therefore, the researchers found evidence that social-self related to recovery capacities and life worth.

Mawson et al. (2015) admitted there were confines to their study. The sample size was very small; therefore, researchers could not generalize the results. However, the researchers fully admitted that this study was only a pilot study. The authors recommended that a larger scale follow-up study was necessary before reaching conclusive results about their research questions. The researchers admitted they also might not be able to generalize findings to addicted persons outside of Australia who were not young adults and living in residential facilities. In other words, the authors concluded that cultural differences might exist in addicted persons outside of Australia, and the participants' experiences might differ from those living outside of residential facilities in the general addicted population.

Mawson et al. (2015) was invaluable for my research. They used survey methodology and used several scales to measure different variables including a demographic survey. I used similar methods, scales, and a demographic survey portion. The researchers began examining the relationship between social self, including social support networks, and recovery in this pilot study. They found that social support was positively related to sobriety. Similarly, I expanded on this study to examine on a large scale the relationship between social support and sobriety as a form of success in AA.

In line with the previous studies, still other researchers specifically studied drinking as it related to social networking influences among college students including Reid, Carey, Merrill, and Carey (2015). These authors set out to study if among college students social support was related to starting and continuing reduced alcohol consumption after alcohol treatment intervention. They also set out to determine if these individuals having riskier social support would have better outcomes when having an in-person professional therapist rather than a computer treatment modality. The researchers sampled 316 mandated college students that were 63% male. They answered questions about their social network including drinking preferences and attitude towards the participant's reducing drinking. The researchers randomly selected individuals to receive one of two treatments including either the brief motivational intervention, which was counselor driven, or alcohol edu for sanctions, which was computer driven. The researchers used latent growth models, and after controlling for baselines, they studied social support influencing initial alcohol reduction during the heaviest week, highest blood alcohol concentration, outcomes at 1 month, and maintenance of alcohol reduction from 1 to 12 months.

Reid et al. (2015) found a participant's social network's alcohol consuming status related to initial reduction and highest blood alchohol concentration. Social network's acceptance of change in the participant's drinking status related to reducing beginning consequences. Social support acceptance related to all variables at maintenance. Both treatment conditions showed similar outcomes when the social support seemed very acceptable to the participant. In contrast, when participants viewed less acceptance in

social support, the educational intervention was significantly more related to negative

outcomes compared to the brief intervention. More specifically, return to previous

drinking levels was significantly greater in the educational condition compared to the

brief motivational condition in terms of when participants felt their support was less

accepting. The researchers concluded that how social support related to reduced drinking

or behavioral modification and what interventions might improve outcomes was vital for

alcohol treatment.

Reid et al. (2015) acknowledged several restrictions in their study. The reports

were self-reports so the data might not be an accurate representation of the students'

experiences. The researchers also acknowledged that they took the data from one

campus, from a mostly Caucasian sample, and a campus that did not have a big Greek

influence. These factors might endanger generalizability. The students were also

mandated to treatment so they might not represent the general student population.

Reid et al. (2015) taught me important information for my study. The researchers

showed that social network had more influence on drinking outcomes even when

compared to different treatment modalities. I, therefore, studied social support. They

also surmised that being mandated to treatment might affect outcomes as these students

were all mandated to come. Therefore, on the side, I studied whether being mandated to

come mattered in terms of success in AA as well. A confounding variable that this study

brought up was how accepting of treatment or how risky a social support network was.

Here these differences greatly affected outcomes for drinking. I assumed that these might

affect my variables in my study as well, but my measure of social support did not ask

about these factors. These researchers also brought up the fact that longitudinally there were significant changes in returning to previous drinking behavior at different points and different levels. I was unable to study these factors as I only studied drinking in the past and at one point.

As many of these researchers mentioned previously included the possible confounding variable of social desirability bias in reporting on surveys and interviews in their research, some researchers particularly studied this phenomenon as it related to self-reports of health, substance abuse, and social network factors among a sample in Baltimore, Maryland (Latkin, Edwards, Davey-Rothwell, &Tobin, 2017). These authors understood how social desirability bias might affect the accuracy of self-report data and lead to inaccurate findings in research. These researchers explored how social desirability response bias related to self-reports of psychological health, chemical dependency, and social support among a community sample of inner-city substance users in Baltimore, Maryland. They sampled 591 opiate and cocaine-addicted persons between 2009 and 2013. The researchers changed items before including them from the Marlowe-Crowne Social Desirability Scale in the actual survey. The researchers administered this survey face-to-face and through the audio computer self administering interview. The researchers found highly statistically significant differences in social desirability response bias depending upon depression levels, drug user stigmatization, physical health, recent substance use, Alcohol Use Disorders Identification Test scores, and social support network size.

Latkin et al. (2017) found that the relationship between health service utilization measures and social desirability bias was insignificant. Social desirability bias was significantly associated with recent using and using stigma even after controlling for the Center for Epidemiologic Studies Depression Scale (CES-D) scores. Social desirability bias did not relate to prior research study enrollment. The researchers concluded that social desirability bias related to certain important health factors and these were unrelated to depression. They also concluded there was a need to decrease social desirability bias, and ideas for doing so included wording and prefacing questions, delineating participants' roles, and dealing with why certain participants were prone to social desirability bias. Latkin et al. (2017) provided valuable information for my research. These researchers helped me recognize that despite my best efforts, the addicted participants surveyed might not be honest in their answering because of fear of the stigma despite the promise of anonymity. This study also took place in Baltimore, Maryland, and I recruited participants from that area and other areas in Maryland.

Lastly, as part of this section on social networking and perceived social support, this current researcher thought it would be important to review the major scale that she used for her research study, namely the MSPSS by Zimet et al. (1988). These researchers describe how they created this self-report scale measuring perceived social support. They tested the scale on 136 female and 139 male volunteer university undergraduate participants in introductory psychology classes at Duke University. They used confirmatory factor analysis, one-way ANOVA, Cronbach's alpha, correlations, and descriptive statistics to discover the relationships between groups, reliability, and validity

of the scale. The three subscales addressing family, friends, and significant other as

sources of support show good factorial validity. The scale also showed good internal and

test-retest reliability and moderate construct validity. The researchers predicted and found

that higher perceived social support on the scale related to lower depression and anxiety

according to the Hopkins Symptom Checklist. The MSPSS showed some gender

differences in that men showed a greater relationship between perceived social support

and depression than women, although this was not a significant difference. However, a

one-way ANOVA showed women scored significantly higher on the MSPSS in general

and in reporting support from friends and significant other while men scored significantly

lower on the depression and anxiety on the Hopkins scale. The authors concluded that

the MSPSS was valuable for use as a research instrument in measuring perceived social

support. They suggested that researchers could use the MSPSS in a variety of settings,

which could imply use with the substance abusing population to test for perceived social

support.

Zimet et al. (1988) formulated the MSPSS to measure perceived social support by

using a large sample to norm the scale on and covering various aspects of perceived

social support. They drew on previous research regarding social support when

formulating the scale. They tested the scale for all aspects of validity and reliability.

However, they originally normed their scale on mostly Caucasian undergraduate

psychology students, so the scale might not be as generalizable as stated. Later

researchers showed successful application of the MSPSS with other cultures and age

groups (Zimet, Powell, Farley, Werkman, & Berkoff, 1990). They also demonstrated

significant differences in the reporting practices on the scale between genders, so differences might appear between tested women and men. The researchers' used the ANOVA methodology to measure findings as they deemed appropriate. Although the researchers concluded that others could use the scale universally, researchers should consider the limitations listed previously before making that choice.

Zimet et al. (1988) showed the importance of measuring various forms of social support. Therefore, I used this scale that was tested thoroughly for validity and reliability to measure social support. However, the researchers also showed gender differences in perceived social support. Therefore, I measured social support and collected extra information about genders. The scale seemed viable for measuring social support among addicted adults.

In summation, the section on social support and social networking showed that some types of social support and networking were related to increases in addiction recovery and some were not (Kelly et al., 2014; Kidorf et al., 2014; Mawson et al., 2015; Reid et al., 2015). Some researchers shed hope that individuals might be able to change their social networking for the better. Other researchers showed that certain age groups showed greater benefits from social support while others showed the opposite. However, for the most part, there seemed to be some connection between social support and networking with recovery.

Spirituality, Social Support, and Substance Abuse

The authors of previous articles looked at spirituality, social support, and demographics separately (Krentzman, 2017; Kelly et al., 2014; Kidorf et al., 2014;

Mawson et al., 2015; Meyers et al., 2017; Reid et al., 2015; Wnuk, 2015). However, I

aimed to examine these aspects in combination, so it only made sense to look at articles

with researchers that studied these multiple aspects at the same time. It was difficult to

find too many articles in recent times that incorporate all these aspects together. The

following articles are what little research I could find and access (Bassuk, Hanson,

Greene, Richard, & Laudet, 2016; Cucciare, Han, Curran, & Booth, 2016;

Mohammadpoorasl, Ghahramanloo, Allahverdipour, & Augner, 2014; Petrova,

Zavarzina, Kytianova, & Kozyakov, 2015; Witbrodt, Kaskutas, & Grella, 2015).

Certain researchers did literature reviews to study these aspects such as Bassuk et

al. (2016). These authors did a literature review of nine articles related to peer-delivered

recovery support services in the U.S. for substance abuse. The researchers' objective was

to evaluate the effectiveness of this modality for treating substance abuse and related

recovery or maintenance aspects. Although the researchers acknowledged that the

studies had some methodological flaws, they still concluded that there was strong

evidence for the benefit of such services in regard to addiction recovery for the substance

abusing individuals involved. The researchers also reviewed related limitations to the

study and future researcher ideas.

Bassuk et al. (2016) acknowledged several constrictions to their study. First,

most of their studies lacked a control group of comparative treatment modality to

compare the peer recovery group to. The role of the peer recovery worker was often

poorly defined. They only reviewed nine studies and acknowledged the need for more

research in this field. Most of their studied participants were concurrently enrolled in

formal treatment for substance abuse, which may have biased the results.

The Bassuk et al. (2016) study was useful for my study's information. The

researchers showed that there was value for peer recovery support groups, and AA is one

type of peer recovery support group. In the study, participants attending such groups

showed a decrease in substance abuse over time in multiple studies. Therefore, again

there seemed to be a good rationale for studying sobriety outcomes in AA as a possible

means to reduction in alcohol abuse among participants. However, these researchers did

not offer any reasons as to why participation in support groups might have resulted in

lowered substance abuse. Therefore, I studied whether social support and spirituality

contributed to how AA might increase sobriety among participants. I did not answer the

researchers' call for studies using experimental methods, but I did answer their request

for studies examining support groups that are not part of formal treatment.

Other researchers performed qualitative research on these aspects including

Witbrodt et al. (2015) who acknowledged that six percent of Americans consider

themselves recovering addicts, but there was a lack of research on the definition of

recovery and differences between definitions of recovery. The researchers used

secondary latent class analysis to examine an online survey called "What is Recovery" to

form five typologies from 39 questions on recovery. They compared the characteristics

between these typologies based on different aspects of recovery. They found that 4912

fit the 12 step traditionalist; 2014 fit the 12 step enthusiast; 980 fit the secular; 1040 fit

the self-reliant; and 382 fit the atypical categories. The researchers found that the most

important factors distinguishing the groups from each other were abstinence from using,

spirituality, and social networking followed by age and length of recovery. Each

category of participants had different elements and different relationships to the aspects

of recovery but all five viewed self-honesty, managing negative feelings while staying

sober, life enjoyment, and personal growth as important. The researchers concluded that

recovery had differing meanings for different people and persons identified with different

recovery aspects. Therefore, many factors define recovery as others also have

researched, and researchers should consider these factors when developing recovery

programs in terms of professionally, personally, and culturally to best fit clients' needs.

 Witbrodt et al. (2015) had some confines. They stated that findings could not

generalize to all those in recovery necessarily despite using a large sample size. The

researchers based these findings on either survey or interview self-reports so they might

have had social desirability bias or self-reporting error.

I found the Witbrodt et al. (2015) article useful for my study. I needed to consider

the confounding factor of what definition of recovery my participants hold as

contributing to their success in AA. For example, the 12 step traditionalist group

reported higher adherence to sobriety, spirituality, and social support compared as aspects

of their recovery when compared to the atypical group. I did not know if my participants

were succeeding because of their definition of recovery or because of their spirituality

and perceived social support. At least, I also looked at whether participants were

mandated to come to treatment as an aspect of whether they succeeded and this might

distinguish individuals with differing definitions of recovery than the 12 step traditionalist or enthusiast, which might constitute the rest of the participants.

Other researchers did quantitative primary analysis of these factors in their studies including some researchers studied sample populations outside the U.S. and others inside the U.S. (Mohammadpoorasl et al., 2014; Petrova et al., 2015). Most found again the expected results that social support as well as religiosity along with other factors were positively related to greater recovery and reduced addiction in the samples.

A set of researchers studied these factors in a Russian sample (Petrova et al., 2015). These authors reviewed research on what factors hold the greatest efficacy in treating and rehabilitating substance abusers and characteristics of these individuals relating to sobriety. The researchers believed that organizing such a model guiding substance abuse treatment was essential. The researchers through analyzing the literature review found several aspects affecting maintenance of sobriety including biological aspects such as health, and co-occurring disorders; psychological aspects such as coping methods, distractions, control, and aggression; treatment aspects such as program length, measures or forms of rehabilitation, and admission criteria; social aspects including family network, children, and drug-free environments; and spiritual aspects including praying for help to a Higher Power. The researchers then sent questionnaires about these aspects that included the study of a variety of treatment programs including nonconventional 12 step, confessional, and conventional. There were five sets of participants including 945 total participants that consisted of both specialists and substance abusing persons in these different types of treatment. The researchers

concluded that aspects relating to long-term sobriety were both outside or social as well as inside or personal. When substance abusers were not using substances, they had less social and mental issues, personal social and mental character traits were better, and all these combined helped them maintain sobriety. The participants reported that small groups, addiction teaching, writing about feelings, mental health groups or individual counseling, exercise, spirituality such as faith or prayer, work, and learning from substance abuse treatment graduates were the most effective for their rehabilitation. The researchers recognized that substance abuse treatment is complicated and involves multiple aspects of recovery including biological, mental, social and spiritual.

Petrova et al. (2015) had some limits. They used self-report questionnaires, so there might be some participant bias there in false reporting and social desirability bias. Their participants were from all over the Russian Federation, but these results might not apply to a U.S. population because of different cultures. Each of the different types of treatment centers had some similar and some different results from the others. The researchers used the research to pick what factors to include in the surveys, but perhaps there were other unstudied factors also influencing results.

I found value in the Petrova et al. (2015) study for my research study. I also wanted to choose a survey method to learn more about my factors and their relationship to success through sobriety in AA. Two of the factors the researchers studied in this study were social support including family support and supportive environment as well as spirituality in the forms of prayer, relationship to a Higher Power, and religious service attendance. I studied all these in my study, and these researchers showed there was a

relationship between these factors and sobriety in the long-term. The researchers also showed that 12 step facilities had some overlapping factors with other types of treatment facilities in terms what related to sobriety. The researchers revealed that there were several factors, even those I was not going to study in my research, which might relate to sobriety, and these might be confounding factors in my study.

Another set of researchers studied these same factors in an Iranian sample, namely Mohammadpoorasl et al. (2014). These researchers recognized that past research had shown that substance abuse among young adults was a growing public health concern. The researchers' objective was to better understand alcohol and drug abuse rates and associated issues among Iranian college students. The researchers randomly sampled 1,837 college students in Tabriz in the spring of 2011 and surveyed them with a questionnaire asking about their smoking, sexual conduct, substance abuse, religious beliefs, and parental or familial support. The researchers found that between 7.7 and 8.0% of the sample had used alcohol in the last 30 days or ever used drugs in their lifetime. After controlling other variables, the researchers found that living in a dorm rather than at home with parents and having a higher level of religiosity protected against lifetime drug use. In contrast, being a man, living in a single home rather than at home with parents, smoking, alcohol use, hookah smoking, and practicing unsafe sexual behaviors related to being at risk for lifetime drug use. The researchers concluded that overall use of alcohol or drug abuse was low among Iranian college students, and this study pointed to some of the related characteristics. The researchers encouraged the use of these findings to better design treatment for substance abuse for college students.

Mohammadpoorasl et al. (2014) had some restrictions. They used self-report

questionnaires that were possibly prone to self-reporting error or social desirability bias.

This was an Iranian sample, so the results might not carry over to a U.S. population with

a different cultural background. The researchers could not imply causation as this study

only looked at relationships and not cause-and-effect.

Mohammadpoorasl et al. (2014) helped me with information for my study.

Again, these researchers showed there was a definite protective factor in religious or

spiritual beliefs that I studied in my research. However, I studied alcoholism rather than

illicit drugs. I did not know if I would find other results. These researchers also showed

that in some cases living in a dorm rather than parental family houses was protective.

Therefore, I wondered if certain types of social support such as familial support were not

as helpful in recovery compared to others such as friends who might be in the dorm. I

also wondered if confounding variables might be as factors such as sexual behavior,

smoking, and gender. I included gender in my study for extra information because as

these authors showed there was a difference between males and females in terms of the

level of risk to use substances. I also collected information on race as the authors

conducted this study in another country, so there might be racial differences regarding the

relationships between these main variables of spirituality, social support, and sobriety.

Yet other researchers studied these factors in a rural multi-state U.S. sample

(Cucciare et al., 2016). These authors acknowledged that past researchers had shown a

protective connection between religiosity and perceived social support with severe

addictive disorders among adults. The researchers explored if religiosity and social

support related to lowered levels of stimulant addiction over 3 years among rural addicted persons who were never in treatment. The researchers used respondent-driven sampling methods to get 710 participants from three mostly rural states. The researchers repeatedly interviewed these participants every 6 months over a 3 year period. The researchers found that there was an inverse relationship between religiosity and methamphetamine or cocaine use. Even after holding covariates constant, there was still an inverse relationship between religiosity and crack cocaine use, but there was a positive relationship between religiosity and methamphetamine use for a small part of the sample. There was a positive relationship between social support and methamphetamine or powder cocaine use, but there was an inverse relationship between social support from nondrug users with methamphetamine use. The researchers concluded greater religiosity might help some rural addicted persons decrease their addiction over time, but more research was needed to examine how religiosity relates to drug use over extended periods of time particularly for methamphetamine users and those still untreated. The researchers also concluded that social support could actually be detrimental to addicted persons using methamphetamine and powder cocaine use long term for rural untreated addicted persons.

Cucciare et al. (2016) acknowledged several confines to their study. Their use of snowball sampling might have led to more severe drug users who knew other drug users at the same level of use; therefore, the results might not generalize to the entire addicted population. However, the researchers used three different rural states to gather data, which added to generalizability. Their sample was mostly Caucasian, single, and male,

but almost a third was African American, and almost 40% was female. The multiple

measurements over 3 years added to the generalizability. The researchers also excluded

persons who did not have a viable address, so leaving out potential populations of

homeless and other such persons. They collected data was from about a decade before so

that current generalizability was questionable.

Cucciare et al. (2016) shared valuable information to inform my research. The

researchers found that certain types of religiosity, namely believing oneself to be

religious and church attendance related to lowered drug use among certain types of drug

users. However, other types of tested religiosity did not show such a connection or

relationship. Therefore, I tested for various forms of religiosity and spirituality. I also

tested these among alcohol-dependent persons, so I did not know if I would find a

connection. A very small part of the sample of methamphetamine users actually had an

inverse relationship between religiosity and drug use at the final interviews of the study.

The researchers hypothesized that these users might lack available treatment resources,

be too ashamed to seek help, or were not receiving the help they need through their

religiosity and are not looking elsewhere for help. These may all be confounding factors

in my study in terms of the relationship between spirituality and success in AA. These

researchers also showed that addicted persons benefited from social support coming from

nonusers but not from users. Therefore, there might be a confounding variable in my

study because I did not test for the type of support, either from users or nonusers.

Support from users in this study was actually detrimental to recovery among these

addicted persons. The researchers pointed to the need for 12 step support groups to reach

this vulnerable population and help them build healthy support networks of nonusers. This study also showed some differences between Caucasian and African Americans on these measures; therefore, I included ethnicity as an extra information measure in my study.

Again, there were only a few articles that I could find in which the researchers studied all of the factors I was interested in together (Bassuk et al., 2016; Cucciare et al., 2016; Mohammadpoorasl et al., 2014; Petrova et al., 2015; Witbrodt et al., 2015). These authors supported that the factors I wished to look at related positively to each other in this research. These researchers together showed the importance of further studying these concepts with new data to compare to previous findings and add to the research base.

Summary

The literature review is an important part of doctoral study (Rudestam & Newton, 2015; Yob, 2010). This section presented the searching methods used and my literature review. It included articles under the subheadings of theoretical foundation, 12 step facilitation, demographics and substance abuse, spirituality and substance abuse, and social support and substance abuse, as well as a last section combining the latter three subsections. The literature showed support for a relationship between spirituality and substance abuse or 12 step recovery, social support and substance abuse or 12 step recovery, and various demographic features and substance abuse or 12 step recovery (Kelly et al., 2014; Kelly & Greene, 2014; Kelly & Hoeppner, 2013; Kidorf et al., 2014; Krentzman, 2017; Lê Cook & Alegría, 2015; Mawson et al., 2015; Meyers et al., 2017;

Reid et al., 2015; Reif et al., 2014; Wnuk, 2015; Young, 2012). However, there was less

recent literature including recent or new data on these topics and also little data including

all concepts that I wished to cover in my study including spirituality, perceived social

support, gender, race/ethnicity, being mandated or not to AA, and success in AA in terms

of sobriety (Bassuk et al., 2016; Cucciare et al., 2016; Mohammadpoorasl et al., 2014;

Petrova et al., 2015; Witbrodt et al., 2015). I aimed to collect new data on these

combined variables. The next chapter, Chapter 3, on methodology will outline how I did

so through an anonymous online survey and initially multiple regression analysis of the

data though I later switched to logistic regression.

Chapter 3: Research Method

Introduction

The purpose of this quantitative study was to determine the relationship between spirituality/religiosity and perceived social support with success in AA in terms of sobriety level. The original research design was a correlational study with a multiple regression statistical analysis, but I used logistic regression instead because the original assumptions for multiple regression were not met and there was a need for additional data collection to meet the minimum number of nonsober participants to run this analysis (see Field, 2013). This study's purpose included using an anonymous online and later paper-pencil survey. I originally examined the relationship between spirituality and social support among current or former AA members residing in Maryland and later nationally while collecting extra information for gender, race, and if a member was mandated to come (see Creswell, 2009; Rudestam & Newton, 2015). Unlike other recent studies, I used direct data gathering rather than secondary analysis of outdated data from other studies.

In this chapter, I discuss the study's methodology. The Methodology section is an essential part of the dissertation process (see Creswell, 2009; Miller, 2003; Rudestam & Newton, 2015). In this chapter, I describe my methodology including the research design and rationale; population, sampling, procedures for recruitment and data collection; instrumentation and operationalization of constructs; threats to validity including ethical procedures; and a summary.

Research Design and Rationale

In this section, I discuss the research design and rationale for my study. The section outlines all major parts of the design including the variables, the design with its connection to the research questions, the population, sampling with sampling procedures, recruitment and data collection, and instrumentation and operationalization of constructs. I also describe the data analysis plan along with changes made to the research design with rationale for these changes.

Variables

One of the predictor variables was spirituality or religiosity, which was defined as closeness to God, finding meaning in life, or religious activities/rituals as measured by the score on the ASPIRES (Piedmont, 2014). The other predictor variable was perceived social support, which I defined as believing in having a network of persons that help an individual's well-being as measured by the score on the MSPSS (Zimet et al., 1988). The outcome variable was success in AA as defined by sobriety according to AA literature (AAWS, 2018) as measured by the totaled score relating to sobriety from a few questions on the demographic section based on ideas from scales such as the TLFB (Sobell & Sobell, 2008).

I collected demographic information for gender, race/ethnicity, and whether someone was mandated to come to treatment in addition to ensuring that participants were 18 years old or older, had Maryland residency, and had AA membership. I defined gender as on the ASPIRES as male or female (Piedmont, 2014). People were able to check one of the following race/ethnicity options as mentioned at the beginning of the

ASPIRES scale: Arabic, Asian, Black, Caucasian, Hispanic, or Other. Separately, there

was a simple *yes* or *no* question regarding whether participants were age 18 or older, had

Maryland residency and AA membership, and whether they were mandated to come to

AA treatment (see Creswell, 2009; Rudestam & Newton, 2015). I used the first three of

these yes/no questions to screen participants for the survey; a simple message would

appear on the screen requesting that they stop taking the survey if they answered *no* to

any of these three questions. The ASPIRES also had a fill in the blank question about

age (Piedmont, 2014).

Research Design and Connection to Research Questions

The original research design was a correlational study with a multiple regression

statistical analysis. I chose this design to examine the specific predictive relationship

between variables leading to success or not in AA through quantitative survey research

methods. The design originally involved an anonymous online survey to collect new data

to work with instead of doing secondary analysis of outdated data as most recent research

on these topics have done (Creswell, 2009; Feigenbaum, 2013; Kelly & Greene, 2014;

Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015; Rudestam &

Newton, 2015). I also wanted to know how well these variables predict sobriety in AA.

Surveys allowed for participants to answer more honestly on sensitive subjects

such as their substance abuse histories without as much pressure as in interviews about

social desirability bias (see Creswell, 2009; Rudestam & Newton, 2015). Using an online

format for the anonymous survey gave the participants the most freedom to answer

honestly about these questions without fear of being judged negatively for past behavior

so that they might not answer truthfully in other settings. I believe that doing this allowed me to find out more accurate answers compared to doing in person interviews.

I also included demographic information about adult age, gender, race/ethnicity, and whether a person was mandated to treatment because these variables in the research had influencing outcomes for addiction to better describe my sample (Creswell, 2009; Feigenbaum, 2013; Kelly & Greene, 2014; Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015; Rudestam & Newton, 2015). This study involved using well-known valid and reliable ASPIRES, MSPSS, and questions about sobriety related to scales such as the TLFB to measure spirituality, perceived social support, and success in terms of sobriety in substance abuse treatment (Piedmont, 2014; Sobell & Sobell, 2008; Zimet et al., 1988). The survey format included a demographic section including questions that were not incorporated already in the ASPIRES on race, gender, and age (see Creswell, 2009; Rudestam & Newton, 2015). The demographic questions included a yes or no question, with an option for prefer not to answer, on being 18 years old or older, having Maryland residency, having AA membership, and being mandated to treatment. The demographic questions also included three questions related to sobriety as outlined later in this chapter. Therefore, I chose a correlational research design with multiple regression analysis using an online survey to answer my research questions (see Creswell, 2009; Rudestam & Newton, 2015).

Time and Resource Constraints

There were some time and resource constraints of using an online survey (see Creswell, 2009; Rudestam & Newton, 2015). Originally, I wanted to leave my survey

open until I reached the minimum number needed for my research, but I had to close the survey with only 69 respondents that were viable after soliciting 600 places due to time constraints. I did so after consulting with my chair to obtain permission to close the survey (see Field, 2013). Those who did not have access to the web through computers or did not know how to use computers might not have been able to take the survey, which might have reduced or constricted numbers. On the other hand, the anonymous nature of the survey might have encouraged those who might not participate in more intimate interviews to share their information honestly without restraint on this sensitive topic of addiction. It was convenient to take a sampling from multiple locations, which might have resulted in a more diverse range of people taking the survey who might not otherwise have come in person to take it with an interviewer. The survey was also cost effective.

Design Choice Consistency with Need to Advance Knowledge in Discipline

In my study, unlike most previous research, I used raw new data. This gave me the chance to further the counseling addictions discipline by looking at modern-day alcoholics (see Creswell, 2009; Rudestam & Newton, 2015). Therefore, the information in my study is more likely to apply to today's alcoholic population than these other studies did. I also used anonymous online surveys, which allowed collection from people who might not have answered honestly in interviews about their alcohol use.

<div align="center">

Methodology

</div>

This section outlines the methodology for my study. It includes subsections for the population, sampling, recruitment and data collection procedures, instrumentation and

operationalization of constructs, and data analysis plan along with changes made to the methodology as well as the data analysis plan. I lay out the methods in detail with justification for each part used in my study.

Population

The original research project population included sampling from the total adult population of former or current AA members in Maryland who had either succeeded or not succeeded in AA in terms of achieving full abstinence from alcohol or, in other words, sobriety. I chose Maryland mainly because I am a Maryland resident who can easily access Maryland substance treatment facilities, spread the word to Maryland AA members, and share information about my survey with mental health professionals dealing with potential participants. The estimated current U.S. population of AA members as of January 1, 2016 was 1,262,542 (AAWS, 2016).

Sampling and Sampling Procedures

Sampling type, drawing procedures, and frame. The original sample was only adult Maryland residents who were former or current members or attendees of AA. Because AA values anonymity for its members, in my research project, I had to use only nonprobability convenience sampling due to Maryland AA constrictions regarding getting volunteers by attending any area groups (see Creswell, 2009; Rudestam & Newton, 2015). The AA office prohibited soliciting the leaders of the groups to enlist them in distributing surveys. Instead, in this study, I solicited volunteer survey-takers by posting survey flyers and through word of mouth using the recruitment methods outlined in the following sections. My sampling strategy included snowball sampling when

participants enlisted other qualified participants (see Creswell, 2009; Rudestam &

Newton, 2015). However, I could not use the ideal probability sampling because of the

restrictions for soliciting directly from AA or group leaders. Other nonprobability

sampling techniques did not apply well to my quantitative study because they fit better

with qualitative studies.

Power analysis for sample size. With the estimated national AA population in

the U.S. as of January 1, 2016 at 1,262,542 members, 92 participants were indicated as

necessary with G*Power using a linear multiple regression fixed model with a single

regression coefficient for 80% confidence, medium effect, with .05 alpha error for two

predictor variables and one outcome variable (AAWS, 2016; Buchner, Faul, & Erdfelder,

n.d.). These are the standard confidence and error levels for social science research. I

chose a medium effect size because to detect a small effect would require a large sample.

I was not interested in only finding a large effect, so medium seemed to be the correct

balance between the two.

Procedures for Recruitment, Participation, and Data Collection

Recruitment. I originally solicited participants through flyers placed at 20 local

chemical dependency counseling clinics after asking permission to do so at these clinics.

I asked my licensed mental health professional friends to distribute survey information to

their clients or clinics. These licensed professionals were those defined by the Maryland

Department of Health's Board of Professional Counselors and Therapists to be able to

diagnose and treat mental health issues including drug and alcohol issues listed in the

DSM-5 (Board of Professional Counselors and Therapists, n.d.). I also used my 5,000

member church's social media called the Realm where all members could sign up on the site to receive e-mail notifications or search out the want ads on the Realm themselves if they were interested. I informed the leaders of the counseling ministry of my church to refer appropriate people. I also sought out community centers where they held AA meetings and other 12-step meetings to post my flyers and included telling my friends who are alcoholics about the survey to spread the word to their friends about it. The hope was that through these methods and snowball sampling of participants and friends informing other friends to take the survey, there would be enough participants. I included general word of mouth as a method to get my survey information out. I put on the flyers to "tell a friend" who met the criteria for the survey to take the survey to get more participants.

The survey flyer provided a link to the survey on SurveyMonkey. The participants could take it at their leisure, and there were no reminders as the survey was completely anonymous. I left the survey open online for participants to be able to log in until I reached the minimum number of participants I needed for my survey. I periodically checked to see if enough number of participants took the survey. I did not allow the survey to continue past the 1-year IRB approval time length.

The survey took about 30 minutes to complete. Once participants logged into the survey, they could see the informed consent form. Next, they were prompted to answer a few demographic questions including three questions about sobriety based on scales such as the TLFB (Sobell & Sobell, 2008). Then they took the ASPIRES, which included the rest of the demographic questions (Piedmont, 2014) and the MSPSS (Zimet et al., 1988).

Lastly, they had a short debriefing with referral information for resources to deal with drug and alcohol issues if they were still struggling as detailed later in this chapter.

    Informed consent. The informed consent included several items. On the first page of the survey, I provided information about who was qualified to take this survey including being a Maryland resident, current or former AA member, and 18 years old or older. I specified that I was the main researcher in the study and a doctoral student at Walden University. I briefly explained the background information including that this study was research on spirituality, social support, and sobriety in AA. I explained that agreeing to this study included being invited or willing to take a 30-minute survey that was anonymous and online. I explained that the study was voluntary, they could accept or turn down the invitation, no one would know of their participation or lack thereof, they could stop at any time, and there would be no follow up to the study survey. Briefly, I explained any minimal risks or benefits. I provided a few of resources, which I list in more detail in the Debriefing section. I explained there was no reimbursement for taking this survey. I explained that the survey was private and anonymous, but I would share the study results with the public, and I would keep the data secure and not destroy it for at least 7 years. I also provided contact information for me and my dissertation chair through our Walden University e-mail addresses and an advocacy number for the research participant advocate at my university that they could contact if concerned. I indicated they could print or save this consent for their records. I made it clear that clicking the provided link that takes them to the survey implied informed consent.

I briefly informed the participants of the nature of the research. However, informing the participants of this information may have skewed the results, but I discuss this limitation to this self-report survey further in the analysis post-data collection. In addition, a major form of recruitment of participants was through snowball sampling, and I did not wish for them to share too much information with others taking the survey that might influence the results of the participants (see Creswell, 2009). However, by providing this information, the participants could make a fully informed choice about whether to take the survey and the possible minimal risks involved. They would likely know the nature of the research anyway because I included as required the titles of the used instruments in the survey itself and the questions tailored to the topics I was studying.

I also gave information at the end and the beginning for assisting clients that might need help with drug and alcohol issues, so I believed the risks were minimal. The participants could also stop taking the survey at any time they wished to if they felt overwhelmed by any of the questions, especially those related to their using alcohol. I gave them no compensation; therefore, there was no pressure to finish the survey because of compensation that might harm the participant.

I stored the data using a flash drive. This had a code to enter in before opening it, and no one else knew this code except me. The data were anonymous; therefore, there was minimal risk of tracing the information back to the original participants. I keep the flash drive under lock and key in a cabinet in my room. I will destroy this data after the 7 standard years of social science research. Any information passed to my dissertation

team was sent via secure e-mail and data entry through the Walden website. When the

information was ready to share with the public, I shared it in a way that ensured that the

information was not traceable to individual participants. Therefore, I shared it as

collective data only by sharing the information as a whole to my dissertation team or

through published works in peer-reviewed journals as well as providing my e-mail for the

results given to survey takers and other interested parties.

Demographic information collection. Please refer to Appendix A for the

original demographic section and refer to instrumentation and operationalization of

constructs and specifically the demographic questionnaire for a detailed summary of this

section. The demographic information collection included confirmation of Maryland

residency, confirmation of AA membership, confirmation of adult age of 18 years old or

older, whether participants were mandated to come to treatment, confirmation of sobriety

over the last 90 days with details, race/ethnicity, actual age, and gender (Creswell, 2009;

Piedmont, 2014; Rudestam & Newton, 2015).

Data collection. I originally used SurveyMonkey to post a survey consisting of

the parts that I outlined later including the demographic questionnaire, ASPIRES, and

MSPSS (Piedmont, 2014; Sobell & Sobell, 2008; SurveyMonkey, 2017, Zimet et al.,

1988). Participants logged in and took the survey. After I obtained the needed

participants with the modified number as agreed to by my chair, I closed the survey so

that no more persons could take the survey (see Field, 2013). SurveyMonkey is a

confidential, secure, internet-based administrator for online surveys (SurveyMonkey,

2017). It included encryption and data protection. No one could trace the takers of the

survey through this administrator. I chose this platform because I heard from colleagues

that it was easy to use for both the participants and the administrators, confidential, and

secure.

I had access to the data as long as I needed it for the research I was performing

(SurveyMonkey, 2017). As mentioned, I will destroy the data after 7 years as is the

standard in social science research. No one except me had access to it with the

exceptions of my dissertation team when we needed to manipulate the data during the

research process.

Debriefing. At the end of the survey, participants were offered information to get

assistance if they were struggling with alcohol and drug addiction issues including the

Substance Abuse and Mental Health Services Administration (SAMHSA) website, the

AA and Narcotics Anonymous website and hotline number, and some local chemical

dependency treatment centers (SAMHSA, n.d.; AAWS, 2018; Narcotics Anonymous

World Services, 2018). Here again, I provided information to contact me if they had any

questions including my e-mail address at Walden University, and I included the name of

my dissertation chair with his contact information. I also included my IRB number from

Walden (09-21-18-0434216). I additionally encouraged participants to e-mail me at the

provided e-mail address to access the final results of the dissertation. Because of the

anonymous nature of the survey, no other follow up was required.

Instrumentation and Operationalization of Constructs

The survey consisted of three parts. The survey included computerized versions

of a short demographic questionnaire, the ASPIRES, and the MSPSS (Bradburn,

Sudman, & Wansink, 2004; Piedmont, 2014; Sobell & Sobell, 2008; Zimet et al., 1988).

The ASPIRES and MSPSS are psychosocial scales, and I designed the demographic

questionnaire based on the TLFB and similar scales and consultation with my dissertation

team (Groves et al., 2009; Piedmont, 2014; Sobell & Sobell, 2008; Zimet et al., 1988).

        Assessment of Spirituality and Religious Sentiments (ASPIRES). Please refer

to Appendix B for the original licensing agreement with Dr. Ralph Piedmont, the creator

of ASPIRES. No permission was granted to include the actual ASPIRES Scale itself in

my dissertation because of the copyright. The ASPIRES scale measures religiosity or

spirituality utilizing a subjective-continuum closed-ended question format (Bradburn et

al., 2004; Groves et al., 2009; Piedmont, 2014). Most of the questions ask for answers in

a Likert-scale format. This format allows for score conversion from participants'

subjective ordinal answers to quantifiable number scores regarding the measurable

variables, and this research looked at the strength of a person's attitudes on this scale (See

Bradburn et al., 2004; Groves et al., 2009). For example, several questions have rankings

from 1 to 5 where 1 is strongly disagree, 2 is disagree, 3 neutral, 4 is agree, and 5 is

strongly agree (Bradburn et al., 2004; Piedmont, 2014). Other questions are in this

format but with the agree and disagree categories in the opposite direction. Some

questions are about set numbers of times for reading religious literature or prayer. Still

other questions ask about how often in set increments a person attends religious services.

Some questions ask about the level of intimacy with God and felt union with God. The

final totaled scores on the scale determine the person's rank for religiosity or spirituality.

The ASPIRES takes 10 minutes to complete and consists of 35 items including 23 on spiritual transcendence subscale and 12 on the religious sentiments subscale (Piedmont, 2014). Total scores on the ASPIRES range from 35 to 245 (Piedmont, 2014). Higher scores on the ASPIRES mean that the person is more spiritual or religious and lower scores mean they are less spiritual and religious. There are 7 total scores: Religiosity, Religious Crisis, Prayer Fulfillment, Universality, Connectedness, Total Religious Sentiments, and Total Spiritual Transcendence. The spiritual transcendence domain involves facet subscale questions on prayer fulfillment or joyful feelings from connecting with the transcendent, universality or believing in a universal life nature, and connectedness or believing in connecting with a greater human reality (Piedmont, 2014). For example, the ASPIRES asks about a person's feeling of a personal connectedness to a deity and meaning in life (Piedmont, 2012). The religious sentiments domain consists of facet subscale questions on religiosity or involving oneself in religious behaviors, and religious crisis or quarrels with a deity or faith community (Piedmont, 2014). For example, the ASPIRES asks about frequency of reading religious literature and praying (Piedmont, 2012).

Researchers have translated the ASPIRES in multiple languages and used it successfully with people of multiple racial and ethnic groups including Hispanics, African-Americans, Caucasians, Asians, and Middle Easterners to measure spirituality and religiosity (Brown, Chen, Gehlert, & Piedmont, 2013; Piedmont, 2014). Researchers have used the ASPIRES with people of diverse faith traditions including Jews, Christians, Hindus, Buddhists, Muslims, and the religious traditions of aboriginal Canadians to

measure spirituality and religiosity (Piedmont, 2012). Researchers have successfully

used the ASPIRES with alcoholics, with both genders, and with all adult ages over 17

(Piedmont, 2012). Researchers can use ASPIRES with persons who are less educated as

well (Piedmont, 2014). Therefore, the ASPIRES was valid for use with AA participants

who were of all adult ages, both genders, diverse races, all educational levels, and of all

different spiritual backgrounds (Feigenbaum, 2013; Piedmont, 2012; Kelly & Greene,

2014; Young, 2012).

Besides the previously mentioned, the ASPIRES is valid and reliable in many

ways (Piedmont, 2012; Piedmont, 2014). The ASPIRES showed satisfactory to high

internal consistency reliability for both subscales (Spiritual Transcendence, $r =.86-.95$;

Religious Sentiments, $\alpha = .78$ to .89), and it showed high reliability for the total scores (α

$=.93$); however, the connectedness section has low internal consistency from.60 to .54

(Piedmont, 2012; Piedmont, 2014). When compared to other gold standard measures of

religiosity and spirituality, the ASPIRES had high criterion-based validity (Piedmont,

2012; Piedmont, 2014). The ASPIRES had high construct validity when comparing it to

scales measuring other variables such as personality, purpose in life, self-esteem, and

pro-social behaviors , for significant percentage of explained variance, median $r^2 = .15$,

range = .03-.30 (Piedmont, 2012; Piedmont, 2014). The ASPIRES also had high

construct validity in that it appears to measure what it says it does because in one study

there was deattenuated correlation of .71 between the dimensions of spiritually and

religiosity (Piedmont, 2012; Piedmont, 2014).

Multidimensional Scale of Perceived Social Support (MSPSS). Please refer to

Appendix C for the actual MSPSS instrument. The MSPSS scale measures perceived

social support utilizing a subjective-continuum closed-ended question format (Bradburn

et al., 2004; Groves et al., 2009; Zimet et al., 1988). The questions ask for answers in a

Likert-scale format. This format allows for score conversion from participants'

subjective ordinal answers to quantifiable number scores regarding the measurable

variables, and this research looks at the strength of a person's attitudes on this scale (see

Bradburn et al., 2004; Groves et al., 2009). For example, each question has rankings

from 1 to 7 where 1 is very strongly disagree, 2 is strongly disagree, 3 is mildly disagree,

4 is neutral, 5 is mildly agree, 6 is strongly agree, and 7 is very strongly agree (Bradburn

et al., 2004; Zimet et al., 1988). The final totaled scores on the scale determine the

person's rank for perceived social support.

The MSPSS has 12 questions, and it measures perceived social support in regard

to the three subscales of friends, family, and significant others (Zimet et al., 1988).

Scores range between 12 to 89 points. Participants can complete the MSPSS in five

minutes, and it is easy to use. For example, a question is whether a person feels they

have enough close friends. This research uses the total score to measure perceived social

support. In order to get the total score on the MSPSS, a person takes the total tabulated

score of the questions and divides it by 12, or the total number of questions to find the

mean score (Zimet, 1998). To find the score for each of the three subsections, it is the

same process except that a person adds up the scores for the questions relating to each

subsection, and then a person divides by four because there are only four questions per

subsection relating to friends, family, and significant other. The friends questions are

questions 3, 4, 8, and 11. The family questions are 6, 7, 9, and 12. The significant other

questions are 1, 2, 5, and 10. Using an alternative approach with the scale response

descriptors for guidance, the average scale score 1 to 2.9 could be low support, 3 to 5

could be moderate support, and 5.1 to 7 could be high levels of support (Zimet et al.,

1988).

Researchers have successfully used the MSPSS to measure perceived social

support for racially diverse adults of both genders and all ages (Zimet et al., 1990). Some

of these populations include South Asians, Caucasians, Hispanics, and African

Americans (Yoshioka, Gilbert, El-Bassel, & Baig-Amin, 2003; Zimet et al., 1990).

Therefore, the MSPSS could adequately measure perceived social support for AA

members of diverse races, diverse adult ages, and both genders (Zimet et al., 1988).

The MSPSS is both valid and reliable (Zimet, 1998; Zimet et al., 1988). The

MSPSS had high internal reliability between subsections using alpha scores; alpha scores

for subscales for significant other (α =.91), family (α = .87), friends (α = .85), and the

total scale (α = .88) were good (Zimet et al., 1988). The MSPSS had high test-retest

reliability when retesting participants with the scale after 3 months including subscale

values for the friends, family, and significant other scales being .85, .75, and .72

respectively (Zimet, 1998; Zimet et al., 1988). The test-retest reliability for the entire

MSPSS scale was .85 (Zimet, 1998). The internal consistency of the MSPSS among six

studies of 13 groups had Cronbach's coefficient alphas of between .77 to .92 (M = .87).

Of these the family subscale had .78 to .98 ($M = .88$), friends had .79 to .94 ($M = .88$),

and significant other had .79 to .98 ($M = .88$) Cronbach's coefficient alphas.

The MSPSS had high criterion-related validity when comparing it to other

measures of perceived social support using factor analysis (Zimet et al., 1988). The

MSPSS had high construct validity when comparing it to outside measures of depression

and anxiety that presumably had an inverse relationship to perceived social support; the

family subscale was significantly inversely related to depression and anxiety ($r = -.24, p$

$< .01; r = -.18, p < .01$); the friends subscale significantly inversely related to depression

($r = -.24, p < .01$); the significant other subscale was slightly inversely related to

depression ($r = -.13, p < .01$); and the total scale was significantly inversely related to

depression where $r = -.25, p < .01$ (Zimet, 1998; Zimet et al., 1988). Therefore, the

MSPSS's subscales appeared to actually measure what they intended, and these subscales

support content validity because they are exhaustive in terms of social support (Zimet et

al., 1988). The scale was also moderately positively correlated with the Network

Orientation Scale (Zimet, 1998).

Demographic questionnaire. The original demographic information included

confirmation of adult age of 18 years old or older, confirmation of Maryland residency,

confirmation of AA membership, whether participants were mandated to come to

treatment, and confirmation about sobriety over the past 90 days (see Creswell, 2009;

Rudestam & Newton, 2015). I asked these in the form of a yes or no question format

with an option to answer prefer not to answer. I used the first three of these questions to

screen participants for the survey. After listing these three questions, I provided a brief

statement requesting that participants answering no to any of these three questions stop taking the survey as they did not meet the criteria to take the survey while thanking them for their participation.

There were also two questions asking about number of days someone had drank over the last 90 days and the average number of drinks someone had drank on those days in number format. The latter had an explanation of what constitutes a drink. I based the three sobriety questions on information gathered through scales such as the TLFB that are well known as psychometrically sound scales for measuring sobriety in the field as well as from consulting with my dissertation team as mentioned later (Sobell & Sobell, 2008).

The rest of the demographic information including a blank answer left to fill in a person's actual age, the race/ethnicity by set categories, and gender according to male/female were part of the ASPIRES assessment (Piedmont, 2014). Most of these questions are standard categorical closed-ended response questions to simplify the calculations (See Bradburn et al., 2004). I simply borrowed the question listed in the ASPIRES about race and listed several races including Arabic, Asian, Black, Caucasian, Hispanic, and Other as simply categories to check off without further specification (Bradburn et al., 2004, Piedmont, 2014). I examined these factors only as extra information and not in the major calculations themselves but simplified the information for future research using this data (see Bradburn et al., 2004; Groves et al., 2009).

The answers to these questions are valuable for future research because some previous researchers have shown differences between gender, race, and whether participants are mandated to attend AA with success in AA according to sobriety (Kelly

& Hoeppner, 2013; Lê Cook & Alegría, 2015). For this questionnaire, I had both my research committee member, Dr. Michelle Perepiczka, and my dissertation chair, Dr. Jeremy Linton, as experts in the field review the development of my questions to ensure diversity and ethical best practices, literacy and readability, and best formulation of the question language (see Creswell, 2009; Rudestam & Newton, 2015).

Data Analysis Plan

The research originally employed multiple regression analysis to test the hypothesis to discover whether a relationship existed between spirituality/religiosity and perceived social support with success in AA in terms of sobriety (see Groves et al., 2009). The analysis examined the differences between the mean scores on the ASPIRES measuring spirituality, MSPSS measuring perceived social support, and the totaled score from the sobriety questions on the demographic questionnaire measuring success in AA, or basically measured both the predictor and outcome variables, to discover if scores differed significantly to measure the relationships between these variables (Groves et al., 2009; Piedmont, 2014; Sobell & Sobell, 2008; Zimet et al., 1988). This type of analysis involved two predictor variables and one outcome variable (see Creswell, 2009; Groves et al., 2009). The predictor variables or input variables of spirituality or religiosity as scores on the ASPIRES, and perceived social support as scores on the MSPSS fit into the criteria for categorical or continuous variables (see Creswell, 2009). The outcome variable must be continuous, and success in AA as measured by sobriety in terms of scores on the three sobriety questions based off of scales such as the TLFB was continuous (see Creswell, 2009). Because of the multiple research studies in the

literature review, I also collected extra information for future research because of the

differences found in a number of studies in regard to gender, race, and being mandated to

treatment. However, I did not calculate these particular variables as part of my analysis

for this dissertation. I had to switch to logistic regression analysis. Please refer to the

assumptions and running analysis section for my rationale for doing so and both the

assumptions and steps to running the analysis.

Software. The software I used to analyze the data is the Statistical Package for

the Social Sciences (SPSS). More specifically I used IBM SPSS Statistics for Windows,

Version 24.0. I entered the data into this statistical software to complete the data

analysis.

Data cleaning and screening procedures. The first step in the data analysis was

to screen and clean the data I obtained from SurveyMonkey (SurveyMonkey, 2018).

There were a few things I did to prevent problems and ensure clean up of the data

(Perepiczka & Flamez, 2011). First, the majority of the questions were close-ended on

the survey, which could help prevent errors. The exception was that participants had to

plug in the actual average number of drinks per day and number of days drank over the

last 90 days on the sobriety questions based off of scales such as the TLFB, but this too

left less room for questionable answers due to the straightforward nature of the task

(Sobell & Sobell, 2008).

Then the next step was to screen the data for missing points and also outliers

(Perepiczka & Flamez, 2011). In order to identify missing and outlying data at the end of

the collection time, I did three things. I did an overview scan of the data while also

looking at the frequency charts. I ran measures of central tendency and counted the total number of responses while comparing these to the total number of possible responses in the sample. And I reviewed invalid or responses that were missing as well as outliers.

In order to deal with the extreme or outlying scores, I eliminated them (see Field, 2013). I identified outlying scores as those that were above the z-score of 3 or below the z-score of -3, and these were the standardized scores based on the bell curve. I graphed the scores to identify these outliers.

In order to deal with missing data, I did a few things (Perepiczka & Flamez, 2011). I replaced the data with the mean or median score. If the data was from the demographic questions, I simply left it blank such as race, gender, and being mandated to treatment, or age. This seemed like the easiest method to deal with the demographic information as I was only collecting that information on the side and not as any of my major variables for analysis. I stated the number of unavailable answers in my final analysis. If I had an excess of participants compared to what I needed to complete the study, then if there were only a few participants missing data, those data sets I eliminated from my final calculations completely because I did not need more than the agreed upon 69 total participants from my chair to reach my analysis minimum standards (see Field, 2013).

Model assumptions and running analysis. Next, originally I ran the statistical analyses using the Pearson correlation and multiple linear regression on SPSS (see Field, 2013). However, I did not include the multiple regression and original Pearson

correlation in the final analysis because the model assumptions were not met, so there were insufficient power for the sample size I obtained.

I then opted to run a logistic regression instead after consultation with my committee, and I did so subsequently after collecting the minimum needed 20 nonsober participants to run this analysis (Concato et al., 1995; Creswell, 2009; Field, 2013; Paduzzi et al., 1995; Rudestam & Newton, 2015). Please refer to the section titled Logistic Regression Analysis outlining my reasons for changing the analysis and how I concurrently changed and expanded my data collection to accommodate those changes.

The assumptions of the logistic regression included the following (Concato et al., 1995; Field, 2013; Paduzzi et al., 1995). Unlike linear regression, there was no need for a linear relationship to exist between the independent and dependent variables, normal distribution of the residuals, homoscedasticity, or for the dependent variable to be either on an interval or ratio scale. However, binary logistic regression required the dependent variable to be binary meaning a yes or no, 1 or 0 answer (categorical). I defined my dependent variable as either 0 for sober, and nonsober for any nonzero score on the demographic questions asking about sobriety. In other words, I converted the sobriety scores from continuous to binary as mentioned before (see Creswell, 2009; Rudestam & Newton, 2015).

Each data point needed to be independent of the other, or each data point could not be overlapping coming from repeated measures or data that is matched up. This point held true for my analysis. The independent variables needed to have minimal to no multicollinearity between them, or they could not be overly correlated amongst

themselves. I tested for this assumption after the fact. The independent variables needed to have linearity and as well as their log odds. The log odds and the independent variables needed to have a linear relationship. I also had to test this assumption after gathering the data. There needed to be a relatively large sample size with a minimum of 10 data points per independent variable. Therefore, in my study I used two independent (predictor) variables, so I needed a minimum of 20 data sets needed for my analysis.

There were several steps to running the logistic regression and doing the analysis of the data after cleaning the data using the steps outlined previously (Concato et al., 1995; Field, 2013; Paduzzi et al., 1995). First, I checked the residuals for influential cases and outliers and eliminated such cases as outlined in the data cleaning processes mentioned. I ran boxplots and stem and leaf plots to eliminate outliers. Iran classification plots including Hosmer-Lemeshow goodness of fit, Casewise listing of residuals, and Confidence Intervals (CI) of Exp (B) to determine the goodness of fit of the model.

Next I checked for the linearity of the logit by looking at the interaction of the log of the (ln (predictor)) for each predictor variable (spirituality and perceived social support) compared to the log of the outcome variable of sobriety after transforming the original variables to the log variables and running a logistic binary regression (Concato et al., 1995; Field, 2013; Paduzzi et al., 1995). I was only interested in whether the interaction terms were significant in the analysis. Next, I ran a linear regression to check for multicollinearity between the variables in my study by clicking collinearity diagnostics under the statistics tab including the VIF and tolerance scores as well as the

eigenvalues. I then ran the binary logistic regression using the enter method of both

predictor variables to find which of the variables was the best fit for my study in terms of

prediction and saved the associated diagnostics. I checked for the significance of the chi-

square statistic for the model to determine if it was influential on the dependent variable.

I reported Cox and Snell's and Nagelkerke's R^2 as a measure of effect size

(Concato et al., 1995; Field, 2013; Paduzzi et al., 1995). I reported the *b*-values, which

show the probability that a data point will be in one category of the outcome variable or

another in terms of a change in the outcome compared to a one unit change in the logit of

the predictor variable. I also reported the Wald statistic, which told me whether the b

coefficient in terms of the predictor differed significantly from zero, which in term would

have translated to it make a significant prediction towards the outcome variable. I

reported under the classification table, the goodness of fit of the model according to the

percentage of scores correctly predicted for each outcome and overall using the logistic

regression model presented. Lastly, I looked at the odds ratio or the change in odds to

explain how the model improved my ability to predict the results based on the findings.

Here, I looked at whether my odds were greater than one meaning that a certain outcome

was more likely than the other, or less than one where the same outcome was less likely

than the other in each case as the predictor increases. I reported the confidence interval,

showing that if both sides of the interval were above 1 there was more likelihood of a

certain outcome coming true compared to not. If the lower limit was below 1, the

observation might be opposite to what we predicted. I also looked at the histograms to

make sure that my scores clustered at mostly two ends of the graph to represent the

binary outcome variable well. I will further discuss these steps in Chapter 4.

Descriptive statistics. The next step was to run descriptive statistics for the data

and to get a fuller picture of the variables in the study (see Field, 2013). To describe my

participants, I presented statistics on age, gender, race/ethnicity, spirituality level,

perceived social support level, and sobriety level. I ran measures of central tendency

including the mean, standard deviations, medians, modes, range, minimum scores, and

maximum scores for the predictor and outcome variables. This I did to better understand

the full picture of what I had studied in my research for these variables.

In the descriptive analysis, I examined the Pearson product-moment correlative

relationships between each predictor and outcome variable especially looking for

multicollinearity (see Field, 2013). The Pearson correlation coefficient was to show the

strength of the relationship between two variables by looking at how linear or not that

relationship is (see Field, 2013). This linearity can show researchers if there is a positive

relationship between variables (closer to +1) or a negative relationship between variables

(closer to -1). Positive relationships indicate that as one variable increases, the other one

also does. Negative relationships indicate that as one variable increases, the other

decreases.

Logistic regression analysis. I initially intended to run a multiple regression

analysis to answer the main research question of my study, but later I had to change the

plans (see Field, 2013). I had to change my analysis to logistic regression because of my

lack of enough participants who were nonsober in my original data collection and

because the assumptions were not met for the multiple regression analysis (see Creswell, 2009; Rudestam & Newton, 2015). The main difference between this analysis and the multiple regression analysis mentioned was that I converted the outcome variable of sobriety to a binary variable after data collection. Here sober was represented by a score of 0 and nonsober was represented by any other score besides 0 on the questions asking about amount of drinking over the last 90 days and number of average drinks on those drinking days. This new definition of sobriety was in keeping with AA literature that defines sobriety as total abstinence from using alcohol (AAWS, 2018).

I justified the change to logistic regression analysis after consulting with my committee because it would require less collection of nonsober participants (see Field, 2013). I was unable to collect more than 4 nonsober participants in my first round of data collection and logistic regression would require only 20 total nonsober participants collected on the dependent variable to run the analysis compared to numerous more needed to run the multiple regression analysis because I had collected data for 65 sober participants originally after soliciting about 600 places in Maryland (Concato et al., 1995; Peduzzi et al., 1995). According to these two landmark studies I would follow the "rule of ten" or the "events per variable (EPV)," which entails that for each predictor variable in a logistic regression there should be a minimum of 10 data points or participant data. In my case, I had two predictor variables so I would need 20 participants in the nonsober group to run the logistic regression analysis to meet my minimum sample size. Therefore, I continued my data collection until the minimum number of nonsober participants were met to perform a logistic regression.

To meet my needed quota for nonsober participants, I expanded my survey population and sampling to include national AA members as well as including a paper-pencil format of the survey (see Creswell, 2009; Rudestam & Newton, 2015). The flyer replaced the qualifying question of Maryland residency to U.S. residency. In my recruitment, I included listservs of students and professional mental health and substance abuse workers that my dissertation chair Dr. Linton used in Indiana, and I originally planned to recruit from various AA forums listed on websites having several such forums though I later did not need to do so to meet my minimum number of nonsober participants (Online Intergroup AA, n.d.; Live AA Meetings Online, n.d.). For the paper-pencil version, I specifically targeted facilities where persons might be most likely to be nonsober and in treatment such as hospitals and detoxification facilities and similar drug and alcohol facilities on the SAMHSA list of drug and alcohol clinics after consulting with my committee to do so (see Field, 2013; SAMHSA, 2018). Please refer to the section ethical considerations about the details of how I kept the paper-pencil surveys anonymous and confidential as well as the changes I made to the informed consent forms.

My paper-pencil surveys and the nationally expanded online surveys had the same information I was soliciting from the original online survey with minor modifications made to the demographic questionnaire (see Creswell, 2009; Rudestam & Newton, 2015). Although I left the question the same about Maryland residency, I changed the qualifying statement after the first three questions to state that if someone said they were not AA members, not 18 years old or older, or not a U.S. resident, then they could not continue with the survey because they did not meet the inclusion criteria. Refer to Appendix D for

this modified demographic questionnaire. Additionally, please refer to Appendix E for the modified licensing agreement with Dr. Piedmont that included permission to distribute the paper-pencil version of the survey that included the ASPIRES.

Hypotheses and research question restated. Here, I summarize my null and alternative hypotheses. I also restate my research question with details. Null hypothesis: There is no statistically significant predictive relationship between both spirituality and perceived social support with success in AA support groups among AA members. Alternative hypothesis: There is a statistically significant predictive relationship between both spirituality and perceived social support with success in AA support groups among AA members. Research question: Is there a statistically significant predictive relationship between both spirituality and perceived social support with success in AA support groups among AA members?

Please refer to the variables section and instrumentation section previously mentioned for the detailed description of the variables and the instruments or other questions used to measure these variables (Piedmont, 2014; Sobell & Sobell, 2008; Zimet et al., 1988).

Threats to Validity

In this section, I discuss threats to validity for my study. The section includes a discussion of threats to external, internal, and construct validity. Here, I also suggest methods to deal with these threats in my study.

Threats to External Validity

  This research also had limitations including threats to external validity, which refer to generalizing research results incorrectly to other populations, environments, and times frames (See Groves et al., 2009). Participants taking the survey were volunteering to do so; therefore, any results obtained might not have applied to other AA members who were not apt to volunteer to take surveys, or there was self-selecting bias (see Bradburn et al., 2004; Frankfort-Nachmias, Nachmias, & DeWaard, 2008; Groves et al., 2009). The results might not generalize to the entire population of AA members because the participants were picked locally (See Groves et al., 2009). Even when I later expanded the study to include a national sampling, I had no way of monitoring where people were taking the survey from, so they may have been clustered in one area. The results might not generalize to all AA Members because of the small sample size and extraneous factors to success, and the results might not generalize to all minorities because they might be underrepresented in the research results (See Frankfort-Nachmias et al., 2008). However, these limitations will be discussed in the results section and taken into account as I must do the best I can with the time limitations I have for collecting the data. I also tried to aim for getting enough participants to discover a medium size effect with a reasonable error margin and confidence interval according to the standards in social science research.

Threats to Internal Validity

  There were many limits to internal validity in this study, which refer to incorrect assumptions relating the collected data back to the study population (See Frankfort-

Nachmias et al., 2008). Because correlational designs do not directly manipulate variables and cannot control for all extraneous variables as in a true experiment, there are limitations on interpreting the results of the study (see Creswell, 2009; Rudestam & Newton, 2015; Tuckman, 1999). Researchers could not determine whether the predictor variables caused the outcome variables in this case (see Creswell, 2009; Rudestam & Newton, 2015). Because the study was correlational in nature and there was no experimental or control group, a person could not tell for sure that the predictor variables of spirituality and perceived social support are actually affecting the outcome variable of success in AA as measured by sobriety (see Frankfort-Nachmias et al., 2008).

Therefore, the validity was questionable regarding whether the study measured what it claimed to measure (see Creswell, 2009; Rudestam & Newton, 2015). For example, does spirituality and perceived social support actually lead to success in AA? Extraneous factors such as concurrent enrollment in chemical dependency treatment might have been confounding results and validity because these might be contributing to success in AA rather than the two predictor variables.

For similar reasons, reliability or whether results are replicable is also questionable because the design did not involve controlling the extraneous variables among participants (Creswell, 2009; Rudestam & Newton, 2015). Possibly using a larger sample size might help maintain validity and reliability because differences among individuals skew the results less in larger groups. The research involved explanations in the discussion about the limitations of validity and reliability so that readers would not misinterpret the results to equal causation.

I also studied three common control variables including gender, race, and being mandated to treatment to help with the validity and reliability of results (See Creswell, 2009; Rudestam & Newton, 2015). Unfortunately, among human participants, researchers could not use a true experiment to study real-life circumstances in this case (See Creswell, 2009; Rudestam & Newton, 2015; Tuckman, 1999). In addition, the lack of random sampling of the population might lead to incorrect assumptions about the population because I could not assume that the sample fairly represented the entire population.

I could not involve direct manipulation of the variables such as spirituality level or level of perceived social support among participants as in a true experimental design; therefore a correlational design worked best to measure the relationship between these predictor variables and the outcome variable of success in AA (See Creswell, 2009; Rudestam & Newton, 2015; Tuckman, 1999). This design allowed observation of participants in their natural setting instead of the controlled environment of an experiment, so it added to generalizability as well as reliability and validity of these results to the general population. Similarly, a correlational design could incorporate testing for the extra variables of gender, race, and whether a person was mandated to treatment. Looking into these other variables added to the generalizability of the design.

Threats to Construct Validity

There were lots of threats to construct validity in this study (See Frankfort-Nachmias et al., 2008). Participants might have answered dishonestly because of social desirability bias, so the results might be invalid (see Bradburn et al., 2004; Groves et al.,

2009). This aspect might have been particularly true with persons who took the paper-pencil versions of the survey, which I personally distributed at the facilities I solicited. Participants might have been bored and answered questions quickly instead of thinking through the questions, so results might have also been invalid for that reason. I assumed that the ASPIRES and MSPSS measured what they said they measured, but they may not have and would have made the results invalid (See Groves et al., 2009). What AA members defined as spirituality might not have aligned with what ASPIRES defined as spirituality, so AA members that considered themselves spiritual might have still appeared unspiritual and have thrown off results. I also assumed that perceived social support according to the MSPSS was what AA members defined as perceived social support, but they may have defined it differently and so appeared not to have perceived social support when they actually felt they did have it and so made results skewed. The sobriety questions based on scales such as the TLFB may not have measured sobriety accurately because they relied on self-report of drinking days and drinks per drinking days over a set period of time.

Unfortunately, researchers cannot determine for sure who is taking an anonymous survey, so some participants might not have fit the criteria the survey asked for or may have lied on the surveys (See Creswell, 2009; Rudestam & Newton, 2015). Therefore, the research might not be measuring what it says it measures in terms of validity, and it might not be replicable in terms of reliability. I stated the guidelines clearly about who is to take the study and used a larger sample size to help compensate for possible reliability and validity issues.

This study involved using well-known scales to measure spirituality, perceived social support, and demographic questions about sobriety (Piedmont, 2014; Sobell & Sobell, 2008; Zimet et al., 1988). The scales as mentioned previously were the ASPIRES, the MSPSS, and the sobriety questions based on scales such as the TLFB. The mentioned scales have good validity and reliability, so results could be more trustworthy than some past research (See Creswell, 2009; Rudestam & Newton, 2015). This helped with construct validity. These instruments compared well as to what they measure when scored next to other gold standard instruments in the field.

Ethical Considerations

This section involves discussion of ethical considerations. It includes agreement to gain access to participants or data, treatment of human participants, and treatment of data. I include Institutional Review Board permissions.

Agreements to Gain Access to Participants or Data and Treatment of Human Participants

As outlined before, I originally obtained my data through anonymous online surveys presented through the secure online server, Survey Monkey. I recruited participants as detailed previously in the recruitment section through posting flyers at local area chemical dependency clinics and facilities housing several anonymous meetings, through my church, through word of mouth, and my mental health professional colleagues. I never made known direct contact with my participants, but they anonymously took my survey online and were encouraged to tell their friends who also meet the criteria to take the survey. Some exceptions to this rule were a handful of my

alcoholic friends who agreed to take my survey and did not mind sacrificing their anonymity. However, for this subgroup, I still did not know who was the individual participant taking the survey as I did not check the answer set until the very end of the data collection process.

Informed consent, as previously outlined, included a brief page at the beginning of the survey stating thank you for taking the survey, that participation was voluntary and anonymous, a person could stop taking the survey at any time, taking the survey implied informed consent for me to include the results in my research for public knowledge, no compensation would be given for the survey-taking, brief statement of the use of the study for my dissertation research, brief description of the nature of the survey, acknowledgement of a debriefing at the end including resources for support in chemical dependency treatment with my contact information and my chair's, encouragement to e-mail me to access the final results, request that all questions be answered fully, request that answers not be shared with others, and a request that the survey takers ask friends meeting the criteria to take the survey. I did not conduct any pilot study. Again, data collection was through anonymous online surveys. There was no follow up meetings with the survey takers as these were anonymous participants. The participants and the public can e-mail me to obtain the results when the dissertation results are later published in any relevant journal or posted to the Walden website.

Later, when I expanded my data collection to paper-pencil surveys, I made direct contact with individuals taking the survey at the detoxification, hospital, or other chemical dependency facilities I solicited to do paper-pencil surveys at. I reviewed the

informed consent with the potential participants to make sure they especially understood the voluntary nature of the survey, the inclusion criteria, and that they could stop at any time without any punishment. I screened who to approach in the first place by working closing with the staff of the facilities to prevent harming possibly overly vulnerable participants. This way I prevented any coercion from staff to make participants take the surveys and preserved anonymity by simply giving the surveys to the participants and collecting them randomly in an envelope after insuring there was no identifiable information on the paper version. I had letters of cooperation with these facilities to do so. Therefore, the survey was still kept completely anonymous and adhered to the same guidelines as mentioned previously. As for those surveys given at the national level, these were all still completely online and anonymous using survey monkey.

Later, the modified version of the informed consent online included U.S. residency rather than Maryland residency as a requirement to take the survey (See Creswell, 2009; Rudestam & Newton, 2015). The paper-pencil version of the informed consent also was slightly modified in that way along with direction that taking the paper-pencil survey was implied informed consent to taking the survey and replacing online survey with paper-pencil survey. I stated that I would not collect the names, locations, or other identifying information of the participants to prevent any issues of anonymity or confidentiality being broken.

Institutional permissions. I obtained permission through Walden University's Institutional Review Board to do my study. They reviewed it for any ethical and technical issues. Here is the IRB approval number: 09-21-18-0434216 and it expires on

9/20/19. I also submitted an updated proposal with the modifications and changes to the procedures, an updated change in procedures form, and an updated original ethics IRB Form D when submitting my numerous changes in procedures for expanding my study nationally and also to a paper-pencil format.

Ethical concerns with recruitment materials and processes and how to address. The anonymity took care of most of the ethical concerns with recruitment as no one was forced to take the survey and if they did take the survey, no one would know who took it or not as it was their responsibility to take it at their leisure at a computer or other electronic device of their choosing that had internet access. I included informed consent as outlined previously, and even with the later changes in data collection, as outlined again previously, there was still preservation of anonymity as outlined in the agreements to gain access section previously.

Ethical concerns with data collection. I specified on the flyers, in the actual survey on the entrance page, and by word of mouth the restrictions for the survey takers listed previously including that they must be former or current AA members, Maryland residents, and 18 years old or older. The concern was for those who might not qualify to take the survey and be at risk of harm. I also gave information at the end of the survey as mentioned before about referral places such as the AA hotline and SAMHSA for information to help those seeking or needing chemical dependency help after taking the survey as mentioned previously in the appropriate section on debriefing (AAWS, 2018; SAMHSA, n.d.). I did not anticipate any major harm done to participants through the nature of the survey, but in case of such, that is why I included the referral information.

In addition, I informed the participants in the informed consent of their ability to stop taking the survey at any time without penalty so that there was no coercion as well as no incentive such as compensation to keep them taking the survey to their own harm. The only major change in the second round of data collection was to expand the survey nationally, but even the informed consent was essentially the same with minor changes, so no further risks are implied as outlined in the previous sections. I reviewed the debriefing and informed consent with the paper version participants to ensure they understood the material. I directed participants who required additional help to both the resources in these forms and to the facilities' staff to assist them. I only approached potential participants that the staff at the facilities said were appropriate and not overly vulnerable to avoid harming any participants.

Treatment of Data

  Anonymous and document protection. This actually protected the participants' rights to privacy of the protected health information. I needed to ensure participants' anonymity by ensuring that participants' surveys could not be traced back to the original participants through protecting the original documents under double lock and coding participants' scores by numbers alone after collecting them from the anonymous survey site, which will make the actual surveys untraceable to the original participants because of survey coding technology (see Bradburn et al., 2004; Groves et al., 2009). I will destroy the data after the set period of time set by the University to keep data post research date. The research had to pass the inspection of the institutional review board to ensure the research was not violating the participants' human rights (see Bradburn et al.,

2004; Groves et al., 2009). The research ensured that the research did not coerce participants into taking surveys and gave participants the freedom to decline participation at any time (see Bradburn et al., 2004; Groves et al., 2009). Please refer to the previous sections outlining my treatment of the paper-pencil versions of the survey to preserve anonymity. After collecting the paper surveys in the envelope randomly, I imputed the surveys into Survey Monkey and then collected the data from there while shredding the originals after scanning them to my protected flash drive to preserve document protection.

Summary

The purpose of this quantitative correlational research study was to use quantitative survey research methodology. This study's purpose included specifically utilizing an anonymous online survey and later paper-pencil survey with logistic regression analysis. The study examined the predictive relationship between spirituality level and level of perceived social support with success in or benefit from AA support groups. It examined this relationship among addicted current or former AA members residing in Maryland and later nationally while collecting extra information for gender, race, and if a member was mandated to come (See Creswell, 2009; Rudestam & Newton, 2015). It used two scales and a demographic questionnaire to obtain the data points for analysis. This chapter summarized the details of the research design and methodology. The following chapter will explain the actual data analysis and results of the data collection from the surveys in my research study.

Chapter 4: Results

Introduction

The purpose of this study was to examine the predictive relationship between spirituality level and perceived social support level with success in or benefit from AA support groups. I used a quantitative research design was a correlational study where I used a logistic regression analysis. I examined this relationship among current or former AA members residing in Maryland and nationally while collecting extra information for gender, race, and if a member was mandated to come. My study had two hypotheses and one research question pertaining to whether there is a statistically significant predictive relationship between both spirituality and perceived social support with success in AA support groups among AA members. In Chapter 4, I review the results of the study. The main sections include data collection, treatment or intervention fidelity, results, and the summary.

Data Collection

The data collection is the first step to reporting the results in any research study (See Creswell, 2009; Rudestam & Newton, 2015). In this section, I briefly describe how I collected the data for my research. I describe the time frame with recruitment and response rates, discrepancies in the data collection, baseline descriptive characteristics and demographics, representativeness of the sample compared to the population, and the univariate analysis results.

Time Frame/Recruitment/Response Rates

The time frame for the data collection was a total of 14 weeks. I originally

intended 1 month for data collection but extended the time due to lack of survey

response. Due to a lack of sufficient nonsober respondents to run my analysis, I had to

reopen my survey and continued data collection through both the online and the paper-

pencil version until I reached the minimum number of nonsober participants to run a

logistic regression analysis. This was within the 1-year boundary for the IRB approval.

The total number of respondents came to 126 participants who started the survey, but

only 84% of these completed the full survey according to the Survey Monkey webpage. I

input the paper-pencil survey answers into Survey Monkey to make data analysis easier

and to calculate these final numbers. The actual recruitment was about 600 places with

varying number of persons in each, but I had to discard several incomplete response sets.

The final number of viable participant data sets came to 93. After each set of data

collection, I contacted all the people I had e-mailed out my survey flyers to for them to

withdraw the flyers and discontinue solicitation as well as informing the paper-pencil

version locations to stop distributing these surveys.

Discrepancies in Data Collection

The discrepancies in the initial data collection from the plan presented in Chapter

3 were that I had planned originally to collect 92 participants, but I was initially unable to

do so. Therefore, I solicited not only from about 271 the SAMHSA website listing

substance abuse clinics within a 50 mile radius of my home, my church with their

counseling ministry, and a couple of community centers housing AA meetings but also

from AA Intergroup Lists for both West Central Maryland (about 75 sites) and Baltimore

(about 273 sites). I also expanded my data collection to include national participants

online, a paper-pencil version of the survey at some facilities within 50 miles of my

home, and two listservs that my dissertation chair had access to for students and

professional colleagues in Indiana. I distributed the paper-pencil versions of the survey at

facilities that were more likely to house nonsober participants such as detox, inpatient,

and hospital facilities. I listed the actual numbers of total and viable data sets for

participants in the previous section titled Time Frame/Recruitment and Response Rates.

Baseline Descriptive Characteristics and Demographics

There were several baseline descriptive and demographic characteristics of the

sample. I used snowball sampling and nonrandom nonprobability sampling to obtain

participants (Creswell, 2009). I made participation completely voluntary. The criteria I

set for the participants was that they were current or former AA members, adults of at

least 18 years old or older, and Maryland and U.S. residents. I did not set any limits

besides those mentioned for race/ethnicity, age, or gender. However, I did collect

information on all these variables. I also was able to collect extra information on

religious affiliation because it was a question that was automatically included in the

ASPIRES (Piedmont, 2014).

There were a total of 86 Maryland residents and seven nonMaryland residents in

the final data set. All 93 respondents who I included indicated they were current or

former AA members because I chose not to include the data where the participants either

indicated they were not current or former AA members or preferred not to answer that

question. Of the 93 participants, only three reported being mandated to come to AA and two preferred not to answer the question, and 88 participants were not mandated to come to AA. Tables F1 to F4 (see Appendix F) show the numbers of participants in each category I analyzed in the final total sample of 93 participants.

Table F1 shows that in the final sample 41 (44.1%) participants were male and 52 (55.9%) were female. Table F2 shows that there were a variety of age groups among the final 93 total respondents ranging from age 19 to 82 with a mean age of 50.68 ($SD =$ 13.932), median of 54, and mode of 60. Table F3 shows that in the final sample one person (1.1%) did not respond to the race/ethnicity question, eight (8.6%) were Black, 80 (86%) were Caucasian, one person was Hispanic (1.1%), and three (3.2%) were of the Other category, and no one else in the other race/ethnicity categories of Arabic or Asian responded.

As part of the ASPIRES assessment, there was a question regarding participants' religious affiliation that included 15 different religious groups. As seen in Table F4, one person (1.1%) did not respond, there were 10 (10.8%) Catholic, six (6.5%) Lutheran, four (4.3 %) Methodist, four (4.3%) Episcopalian, two (2.2%) Unitarian, five (5.5%) Baptist, six (6.5%) Presbyterian, 30 (32.3%) Other Christian, two (2.2%) Buddhist, six (6.5%) Atheists/Agnostic, and 16 (17.2%) Other Faith Tradition. There were no Mormon, Jewish, Muslim, or Hindu respondents represented in the study.

Representativeness of Sample of Population

Some evidence exists as to how representative the sample is of the descriptive of the population of AA members in the United States from information from the 2014 AA

Membership Survey (AAWS, 2014). However, some barriers to accurate representation were that although I expanded to national solicitation, only seven of my 93 participants were nonMaryland residents, and I solicited mostly from sites within a 50 mile radius of my home in Maryland. Most of my participants were sober, but there was a mixture of both sober and nonsober participants in the final sample, and AA membership is made up of both sober and nonsober people who are seeking assistance to get sober (AAWS, 2014). According to this same survey, 27% are less than 1 year sober, and 73% are between 1 and over 20 years sober. There was also a disproportionally high number of women in the sample, which is not true in the actual AA population that has about 38% members who are female and 62% that are male. The racial make-up in AA nationally is 89% Caucasian, 3% Hispanic, 4% Black, 1% Native American, 1% Asian, and 2% Other, which was well in line with my sample. However, racial make-up is different depending on where in the country someone is from. In the Baltimore area, according to the most recent U.S. Census Bureau information, 63% are African American, 27% are Caucasian, 5.3% are Hispanic races, and the remaining small percentages make up mixed races, Asian, and Native American. Therefore, it is unknown if my sample accurately represents the dynamics of AA meetings in Baltimore city (U.S. Census Bureau, n.d.).

Only three participants of the 93 reported being mandated to attend to AA meetings, which is not typical of today's AA population that has a mixture of mandated and nonmandated persons (AAWS, 2014). More specifically, 12% come to AA from the judicial system, 13% from a counselor or mental health professional, 32% from a treatment facility, 2% from a correctional facility, and 4% from either a medical

professional or employer/fellow employee. However, 32% come to AA through another

AA member, 30% are self-motivated to come, and 27% from a family member.

Therefore, the external validity was questionable for the larger population because I used

nonprobability sampling. Use of a paper-pencil version may have somewhat increased

external validity by helping to include some participants who were not tech-savvy and

did not have access online whether because of finances, educational lack, or otherwise to

computers and other such devices to take online surveys (Creswell, 2009).

Univariate Analyses Results

After consultation with my committee, we decided that there was no need for

univariate analyses of the predictor variables of the total ASPIRES scores or total MSPSS

scores due to only doing the same logistic regression analysis for each individual variable

(see Field, 2013). There was also no need for univariate analyses of the race and

religious affiliation demographic variables because there was a lack of sufficient numbers

in each of the many categories to have enough power to run an analysis. For example, in

the race variable, most of the participants were Caucasian. Of the three categories of

participants that were nonCaucasian, each category had insufficient numbers of

participants to run the analysis. The same was true of the religious affiliation categories

where several categories had few if any participants and a few categories had many

participants.

The two remaining demographic variables of gender and age were potential

candidates to include in the logistic regression analysis because gender had sufficient

numbers in each of the two categories and age was a continuous variable. However,

these variables did not qualify for inclusion in the final model because of the univariate analyses. For gender, the Pearson Chi-square test in Table G1 (see Appendix G) showed there was not a significant difference in the outcome variable (i.e., sober/nonsober) based on participant gender (see Field, 2013). Yates Continuity Correction (see Table G2 in Appendix G) indicated an Asymptotic Significance value of 1.000. This was a nonsignificant finding because the number is greater than .05. Therefore, there was not a significant difference in outcome by gender alone, so there was no need to include gender in the logistic regression model.

For age, the descriptive statistics showed the age data was substantially nonnormal, justifying its noninclusion in the logistic regression model (see Field, 2013). More specifically, skewness and kurtosis values between -2 to +2 are acceptable. As shown in Table G3 (see Appendix G), the skewness and kurtosis for age in my sample were -.392 and -.373. For additional support of this conclusion, a Kolmogorov-Smirnov significance level above .05 indicates normality. However, in Table G4 (see Appendix G) for this age data, the significance level here (.001) was far below that, showing drastic nonnormal distribution.

Survey Fidelity

Survey fidelity is an important part of reporting the results of a study (See Creswell, 2009; Rudestam & Newton, 2015). In this section, I will discuss the survey fidelity in my study. I will discuss how well I administered the survey as planned and any involved challenges as well as any adverse events related to the survey.

Survey Administration

As mentioned earlier, I could not administer the online survey as planned due to the recruitment issues. Challenges that prevented planned implementation included that people were unwilling to complete the survey that had been using alcohol. I removed several data sets of persons who stopped taking the survey after they answered *yes* to the questions of using alcohol in the last 90 days and in what amount. Only four participants who were nonsober continued on to finish the survey. I also had to drop several participants from the final data set because whether they were sober, they did not complete a substantial portion of the survey. My initial survey attempts did not yield an adequate number of participants. Thus, I expanded to include national residents in my participant pool and to using paper-pencil versions of the survey to obtain more nonsober participants to run my analysis.

There were many challenges with the paper-pencil data collection. Many of the paper-pencil version participants misunderstood the directions, so I collected more data that were not viable because of either large sections of missing data in the individual responses or participants were not at least 18 years old and were not current or former members of AA. I also collected some more data from sober participants, though I specified that I was looking for nonsober participants according to the revised guidelines given to me from the IRB as I had already collected ample sober participants. I input all the data in SPSS and then later removed data from participants who did not meet the inclusion criteria. I also noticed that many people seemed to misunderstand the last question about sobriety regarding the number of drinks one drank on an average drinking

day. Some of the number answers in this question were high and unrealistic, which might have indicated that they thought I was asking about the average drinking over all the past 90 days they drank instead of on each drinking day. This is a question that could be clarified in future research projects.

Adverse Events

Some adverse events occurred while soliciting for the survey during the online data collection. One place that I solicited to take the survey declined due to their feeling that there was no representation from Native Americans in the survey, which might mean no government support. They also raised issues with only representing gender through male and female, as many of their clients were of the LGBTQ community and would not feel comfortable subscribing to either category. I agreed to bring this information to the attention of the creator of the ASPIRES assessment whose answers to these two questions I was borrowing as part of my demographic questions in my survey. I discovered that he had worked with both populations before using the ASPIRES with some adjustment to the survey (Horn, Piedmont, Fialkowski, Wicks, & Hunt, 2005; Piedmont, 2014).

Some people also reacted negatively when I was soliciting participants specifically for AA. They felt that AA valued anonymity and I should not be soliciting from that population. They did not feel that the survey was appropriate to take because they feared in some cases repercussions whether for their job and perhaps being able to stay in the clinics they were receiving treatment.

I did not experience any additional adverse events while completing the paper-pencil version of data collection. It may have helped that the staff at the facilities

directed people to me who would be willing to take the survey. Most people involved were interested in the research and expressed gratitude that I came to solicit surveys from them.

Results

In this section, I review descriptive statistics, the evaluation of statistical assumptions, statistical analysis findings, as well as related tables and figures.

Descriptive Statistics

This section includes the descriptive statistics that appropriately characterize the three main variables: spirituality, perceived social support, and sobriety.

Spirituality/religiosity. In this study, I used the total score on the ASPIRES scale to measure spirituality/religiosity (Piedmont, 2014). Some of the question items were reverse coded to get the correct total summed scores. The entire ASPIRES scale can range from 0 to 184 points with higher scores indicating higher levels of spirituality and religiosity and vice-versa. Scores ranged from 84 to 163 (Range = 79). In my study, the mean score was 132.58 (SD = 14.550), the median was 133, and the smallest mode score was 123 (multiple mode scores existed). This indicated that the sample was relatively highly spiritual and religious. Table H1 (see Appendix H) includes the descriptive statistics of spirituality/religiosity through the ASPIRES scale in the final data collection.

Perceived social support. I used the total score on the MSPSS to measure social support (Zimet, 1988). A person can calculate this score by summing up the scores of each of the questions and dividing by 12. The scores range from 0 to 84 because each

question is worth between 0 and 7 points. Higher scores indicate more perceived social

support and vice-versa. In my final data set, the total MSPSS scores had a range of 6

points (1 to 7), a mean score of 5.337 (*SD* = 1.259), a median score of 5.75, and mode

score of 5.75. Zimet (1988) suggests using the scale response descriptors as a guide to

score this instrument where scores of 1 to 2.9 are low support, 3 to 5 are moderate support,

and 5.1 to 7 are high support. Therefore, according to this standard, on average with a mean

score of 5.304, my respondents had high levels of perceived social support. Please refer to

Table H2 (see Appendix H) for descriptive statistics on perceived social support through the

MSPSS.

Sobriety. I measured success in AA through sobriety using two questions in my

demographics section. These questions were based on the TLFB (Sobell & Sobell,

2008). One question asked for the number of days a person had drank alcohol over the

last 90 days in number format. The other asked for the average number of drinks taken on

those days in number format. I found my total score by adding the two numbers together.

Initially, the higher the number, the less sober a person was, and vice-versa. The

traditional format of the TLFB was in the form of a calendar that asked these two

questions with respondents first identifying their drinking days and average drinks on

each of those days on a calendar. However, because Survey Monkey did not support a

calendar format, I was forced to modify how I would assess for sobriety (SurveyMonkey,

2017). Therefore, after consulting with my dissertation chair, I was able to shorten this

part of the survey by reducing it to only a few questions with a numeric answer format

along with a general yes/no question about sobriety (see Field, 2013). This appeared to

be psychometrically aligned with the basic premises of the TLFB and similar research in general (Sobell & Sobell, 2008).

For the logistic regression analysis, I calculated sobriety according to a binary format where a score of zero meant totally sober and any other score was nonsober (see Field, 2013). Before conversion of this variable to this binary format there were two questions summed together that made up this total score measuring sobriety. The sobriety demographic questions total had a range of 180 points (0 to 180), a mean score of 18.65 (*SD* = 39.699), median and mode score of 0. Therefore, this information showed that some respondents were completely sober and some were not during the last 90 days.

The question on average drinking days had a range of 90 points (0 to 90), a mean score of 12.33 (*SD* = 26.089), median and mode score of 0. This showed that on average, most respondents were sober most days in terms of not drinking during the last 90 days on any given day. The question on average drinks on drinking days had a range of 100 points (0 to 100), a mean score of 6.31 (*SD* = 17.451), median and mode score of 0. This showed that on average most respondents were not drinking at all and if they did drink only drank on average a little bit (6.31 drinks) on those days. The total number of sober persons having a score of 0 total for both questions was 62 (66%) , and the total number of nonsober persons having any score besides 0 total for both questions was 32 (34%), in terms of converting this variable to a binary variable. Refer to Table F5 (see Appendix F) for the sober/nonsober binary variable percentage breakdown.

Correlations between variables. Refer to Table H3 (see Appendix H) for the summary descriptive statistics between all three variables of total ASPIRES score, total

MSPSS score, and total Sobriety Demographic Questions score. I did not need to do correlations to test for multicollinearity between the variables because the Sobriety Total Score was converted to a binary variable. I explain further tests for multicollinearity in later sections.

Statistical Assumptions

I tested for the following assumptions for logistic regression analysis (Concato et al., 1995; Field, 2013; Paduzzi et al., 1995). First, I eliminated incomplete data sets with excessive missing data points. I also removed sets that did not meet my initial criteria of participants who were former/current AA members, U.S. residents, and at least 18 years of age. This left me with 94 participants. I created variables that summed the scores for the ASPIRES, and took the average scores for the MSPSS as directed to in the instructions for each instrument (Piedmont, 2014; Zimet et al., 1988). Next, using the explore function in SPSS, I plotted stem and leaf plots as well as box and whisker plots of the two predictor variables (the total ASPIRES score for spirituality and the total MSPSS score for perceived social support), which automatically generated which scores were the outliers (Hoaglin & Inglewicz, 1987). After consulting with my research committee member, we decided to follow Hoaglin and Inglewicz's recommendations to eliminate any outlier that was greater than the upper quartile plus 3 times the interquartile range, which was automatically marked by SPSS. In my research, there was only one such case among the ASPIRES scores (data set 3), and the MSPSS scores all fell in the acceptable range. I eliminated that one participant's data set. Therefore, I was left with 93 total participants. Refer to Table I1 (see Appendix I) for these descriptive statistics prior to the

last outlier elimination. Refer to Table I2 (see Appendix I) for these descriptive statistics prior to the last outlier elimination.

Next, I checked for the linearity of the logit by looking at the interaction of the log of the (ln (predictor)) for each predictor variable (spirituality and perceived social support) compared to the log of the outcome variable of sobriety after transforming the original variables to the log variables and running a logistic binary regression (Concato et al., 1995; Field, 2013; Paduzzi et al., 1995). I was only interested in whether the interaction terms were significant in the analysis. Please refer to Table J1 (see Appendix J) for the results of this logit binary regression analysis where the binary variable of Sobriety (0 for sober, all other scores for nonsober) is the outcome variable. Here it was obvious that that both interaction terms were nonsignificant ($p > .05$), showing that there was no violation of linearity of the logit (Ln(TotalASPIRES) x ASPIRES, $p = .440$; Ln (MSPSS) x MSPSS, $p = .095$).

Next, I ran a linear regression to check for multicollinearity between the predictor variables in my study by clicking collinearity diagnostics under the statistics tab including the VIF and tolerance scores as well as the eigenvalues (see Field, 2013). In addition, Table J2 (see Appendix J) shows the results of the collinearity diagnostics. The tolerance values for spirituality (ASPIRES) was .937 and for social support (MSPSS) was .937. These were acceptable values as these were greater than the standard .10 cut off point. The VIF scores for spirituality was 1.067 and for social support was 1.067. Again these were acceptable values because these were below the 10 cut off point.

Statistical Analysis Findings

For the logistic regression, I ran a binary logistic regression with the outcome variable of sober/nonsober (binary variable of Sobriety) and the predictor variables of Total ASPIRES (Spirituality) and Total MSPSS (Perceived Social Support). I compared the original model without the addition of the predictor variables to the model of spirituality and perceived social support by sobriety. The null hypothesis model, without adding any other predictor variables, indicated that the model predicted the sobriety category (i.e., sober/nonsober) in 66.7% of cases. The alternative hypotheses model, with the two predictor variables included, also predicted 66.7% of cases regarding the outcome of sobriety. Thus, percentage of prediction did not improve with the inclusion of the predictor variables. I reported Cox and Snell's R^2 (= .089) and Nagelkerke's R^2 (= .124) as a measure of effect size. These findings indicated that between 8.9% and 12.4% of the variance in the outcome variable of sober/nonsober could be explained by the predictor variables of spirituality (Total ASPIRES) and perceived social support (Total MSPSS) together. I reported the odds ratio to measure effect size. The full model including both predictors was significant, $\chi2$ (2) = 8.712, p = .013.

I also ran classification plots including Hosmer-Lemeshow goodness of fit, Casewise listing of residuals, and confidence intervals (CI) for Exp(B). Please refer to Table J3 in Appendix J (see Field, 2013). I will explain more about the residuals and CIs later. For the model, the Hosmer-Lemeshow statistic was nonsignificant, showing the goodness of fit of the model (Model 1, $\chi2$ (8) = 10.125, p = .256).

The Wald statistic indicated whether the B coefficient in terms of the predictor differed significantly from zero, which would make a significant prediction towards the outcome variable (Table J3 in Appendix J; Field, 2013, Pallant, 2010). Here, the Wald statistic was 4.898 for Total ASPIRES and 1.608 for Total MSPSS. Therefore, the predictor variable of Total ASPIRES was a significant predictor of sober or nonsober because of the significance level ($p = .027$) being less than .05. In contrast, the predictor variable of Total MSPSS was a nonsignificant predictor of sobriety or nonsobriety because of the significance level ($p = .205$) being greater than .05.

Table J3 in Appendix J shows the *b*-values (Total ASPIRES, $b = -.039$; Total MSPSS, $b = -.236$), which show the probability that a data point will be in one category of the outcome variable or another in terms of a change in the outcome compared to a one unit change in the logit of the predictor variable (see Field, 2013, Pallant, 2010). Therefore for each predictor, as these predictors increased (Total ASPIRES or Total MSPSS), the likelihood of being sober increased. To be more precise, the logit of the outcome variable of sobriety equates to the natural logarithm of the odds of the outcome occurring.

In terms of the odds ratio for Total ASPIRES ($Exp(B) = .962$), this finding indicates that participants higher in spirituality and religiosity were .9 times more likely to be sober (Table J3 in Appendix J; Field, 2013, Pallant, 2010). The size of the effect was small. For Total MSPSS ($Exp(B) = .790$) for Total MSPSS), the finding was not significant. Therefore, the model improved the ability to predict cases correctly

compared to when there were no predictors in the case of the ASPIRES (spirituality and religiosity) only but not in the case of the MSPSS (perceived social support).

Lastly, there was no casewise list produced because there were no remaining outliers in the results (see Field, 2013, Pallant, 2010). Therefore, no residuals were produced for outliers (Zresid scores above 2). The stem and leaf plot also showed that there were no outliers in the model.

<div align="center">**Summary**</div>

Summary of Answers to Research Questions

In my final analysis, I gathered a survey sample of 93 total participants after cleaning the data to examine the predictive relationship between spirituality and perceived social support with success in AA in terms of sobriety. I had mixed findings. The classification tables for the model including the two predictors was nonsignificant in that it did not improve the ability to correctly classify cases as sober or nonsober compared to the model prior to addition of the predictors. The MSPSS (perceived social support) was not a significant predictor of the outcome variable of sobriety. However, the whole model with the predictors was significant per the chi-square results and odds ratio with the significance level for the ASPIRES (spirituality and religiosity) in predicting sobriety. These results were found using the data I collected using the ASPIRES, MSPSS, and Sobriety Demographic Questions based on the TLFB (Piedmont, 2014, Sobell & Sobell, 2008; Zimet et al., 1988). Based on the binary logistic regression, and after meeting the assumptions for this analysis, I decided to reject the null hypothesis

based on the findings that the model was significant overall. However, in terms of the odds ratio, the size of the effect was small.

Based on my experiences with this data collection I will further explain my theories about what may have been the reason for the findings and how might future researchers improve their data collection methods on other data studying similar concepts in Chapter 5. In other words, I explain my findings from the logistic regression analysis. Here, I provide further interpretations of my findings in Chapter 4. I discuss my study's limitations and implications counselor training and future research.

Chapter 5: Discussion

Introduction

The purpose of this research was to examine the predictive relationship between spirituality level and perceived social support level with success in AA support groups. I continued data collection until I reached a sufficient number of nonsober participants and ran a logistic regression analysis to determine the relationship between these factors. I examined this relationship among current or former AA members residing in Maryland and national residents while collecting extra information for gender and race as well as whether a member was mandated to come. Findings from the logistic regression analysis included mixed findings. The classification tables for the model including the two predictors was nonsignificant in that it did not improve the ability to correctly classify cases as sober or nonsober compared to the model prior to addition of the predictors. The MSPSS (perceived social support) was not a significant predictor of the outcome variable of sobriety. However, the whole model with the predictors was significant per the chi-square results and odds ratio with the significance level for the ASPIRES (spirituality and religiosity) in predicting sobriety. Based on the binary logistic regression, and after meeting the assumptions for this analysis, I rejected the null hypothesis based on the findings that the model was significant overall. However, in terms of the odds ratio, the size of the effect was small. In Chapter 5, I discuss the study and the results. Chapter 5 also includes the interpretation of the findings, limitations of the study, recommendations, implications, and the conclusion.

Interpretation of the Findings

An important part of the discussion section of any study is the interpretation of the findings (See Creswell, 2009; Rudestam & Newton, 2015). In this section, I discuss my interpretation of the findings of my research. I review how the findings relate to the knowledge in the discipline and the theoretical framework.

Ways Findings Confirm, Disconfirm, or Extend Knowledge of Discipline

My findings both disconfirm and confirm previous findings that mostly indicated a statistically significant and in some cases predictive relationship between spirituality, social support, and success in AA or sobriety regarding substance abuse (Kelly & Greene, 2014; Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et al., 2015; Reif et al., 2014; Young, 2012). In my study, spirituality was a significant predictor according to the Chi-square and odds ratio of success in AA in terms of sobriety; however, perceived social support was a not a significant predictor. In addition, the overall model did not classify the sober/nonsober cases any better than before the addition of the two predictors to the model.

There may be a few reasons for my findings not aligning with previous research. First, several of these studies included large samples of outdated datasets as part of secondary analysis. My study involved primary analysis of current data that showed that a relationship existed between spirituality and sobriety but not between perceived social support and sobriety. Second, some previous studies showed that certain types of social support, such as between former or current substance abusing companions, were detrimental to sobriety (Melander et al., 2016; Osilla et al., 2016). This may explain my

findings of no relationship between social support and success in AA if some participants' social support was detrimental or beneficial to their recovery as past researchers have found. On the other hand, my sample may have been too small to show a relationship between perceived social support and success in AA due to the final effect being only a small one even in the relationship between spirituality and success in AA (see Field, 2013).

Another possible reason for differing results is that my definitions of spirituality and perceived social support may be different than what was in previous research. The ASPIRES and MSPSS only include certain aspects of both spirituality/religiosity and perceived social support that AA members may not adhere to in their personal definitions of the concepts (Piedmont, 2014; Zimet et al., 1988). Perhaps my data will encourage researchers to extend knowledge of the discipline by collecting large samples to retest whether a relationship exists between these variables among AA members or other substance abusers. These researchers may define these variables in different ways than I did, which AA members may prefer over those in the two scales I used in this study. They may also study success in AA differently than I did by measuring other variables besides just sobriety measured by a few questions on a survey. In particular, these researchers may find a relationship exists between certain types of social support that are beneficial to recovery not based on sources that are detrimental to recovery such as substance abusing relationships as past researchers have found (Melander et al., 2016; Osilla et al., 2016).

Analysis and Interpretation of Findings Compared to Theoretical Framework

In terms of analyzing and interpreting findings in the context of my theoretical framework, my findings supported my theory partially (Chen, 2006; Frankl, 1992). In the meaning of life or logotherapy theory, people find life meaning to help cope with life stressors through various means including spirituality and social support. These coping methods produce life meaning and can help prevent mental disorders such as substance abuse. Because my study showed a statistically significant relationship between spirituality and success in AA in terms of sobriety, this predictor variable might be a source of meaning in life that help people in AA cope with life stressors such as substance abuse of alcohol. On the other hand, because my study showed no statistically significant relationship between perceived social support and success in AA in terms of sobriety, this predictor variable might not be a source of meaning in life in this case. However, because the model including both predictors did not classify the cases as sober/nonsober better than the original model without the predictors, these two predictor variables might not be sources of meaning of life to help persons remain sober in AA. Alternatively, there may be other definitions that AA members use to define spirituality and perceived social support that were not presented in my study through the ASPIRES or MSPSS that did provide meaning in life to help these individuals cope with their substance abuse (Piedmont, 2014; Zimet et al., 1988).

Limitations of the Study

Every study has limitations, and it is essential to discuss these as part of the discussion (See Creswell, 2009; Rudestam & Newton, 2015). In this section, I describe

the limitations of the study. I discuss limitations to generalizability, trustworthiness,

validity, and reliability that arose during the study.

Limitations to Generalizability and Trustworthiness

The study may have limited generalizability for several reasons. For example, I

could not prove that survey takers met the criteria for alcoholism, AA membership, adult

age, and Maryland or U.S. residency. Therefore, I was unsure if I was studying the

intended population because there was no way to prove who were the survey takers and

their honesty. However, dishonesty may also be a problem with in-person surveys or

interviews due to social desirability bias among dishonest participants. My anonymous

survey helped participants avoid fear of judgment because I would never know who took

the survey unless the person shared that information with me. Even in my paper-pencil

versions, I ensured that my survey participants did not put any identifying information on

their completed surveys and used an envelope to collect these surveys to preserve

anonymity. Therefore, although I met these survey takers in person, I did not know who

took which survey, though they could still have been influenced by social desirability

bias of wanting to please me as the researcher.

Other factors affecting generalizability is my small sample size, measuring only

medium effect size, snowball sampling, and nonrandom nonprobability sampling. Too

much of the sample may have been friends soliciting other friends to take the survey or

clusters of persons in the same geographic location. These Maryland and U.S.

participants might not have represented all AA members. The voluntary nature of the

survey did not necessarily attract AA members who were not likely to participate. This

fact may have been especially true because I did not offer any financial or other compensation to take my survey, and I advertised it as 30 minutes long. However, survey takers were only needing about 10 minutes to take the survey, which might have encouraged more people to take it had it been advertised as such.

Finally, there was a skew in gender with too many females to males, race/ethnicity with too many Caucasians, and very few were mandated to come which was not always typical of AA meetings. These factors might have affected the generalizability of the results to other populations that included more males, more minorities, and those who were mandated to come.

Limitations to Validity

There were several limitations to internal validity for this study. My study lacked an experimental or control group, so I could not assume that the predictor variables caused the outcome variable (See Creswell, 2009; Rudestam & Newton, 2015). Therefore, there might be other explanations for success in AA besides the predictor variables. Dishonest participants may have also skewed the results. Voluntary participants having self-selecting bias might not represent the actual AA population. Participants with social desirability bias might also have skewed the results. Therefore, I may not have been measuring what I claimed to measure in my study in terms of validity. I tried to promote honest answering by emphasizing the confidentiality and anonymity of the survey in the informed consent at the beginning of the survey as well as not collecting identifying information on the surveys and using envelopes to collect the surveys anonymously, which were inaccessible to the staff at the facilities. I sought to get a

sample size for finding medium effect to try to remedy some of these problems, but I did not get the number of participants I desired in the data collection, so this also may have skewed results further. I did a nonexperimental survey design, and maturation, instrumentation, mortality, and diffusion of treatment did not affect internal or external validity.

Threats to external validity. This research also had limitations including threats to external validity, which refers to generalizing research results incorrectly to other populations, environments, and times frames (see Groves et al., 2009). Again, self-selecting bias among these voluntary participants may have skewed the results compared to others who might not volunteer to take a survey but who also were members of AA (see Bradburn et al., 2004; Frankfort-Nachmias et al., 2008; Groves et al., 2009). The picking of geographically local and possibly geographically clustered national participants, small sample size, and insufficient minority racial representation might have prevented generalizability to the entire population of AA members (see Frankfort-Nachmias et al., 2008; Groves et al., 2009). I tried to remedy these issues using a sample size to discover a medium size effect with a reasonable error margin and confidence interval according to the standards in social science research.

Threats to internal validity. There were many limits to internal validity in this study, which refers to incorrect assumptions relating the collected data back to the study population (See Frankfort-Nachmias et al., 2008). My study's correlational design prevented direct variable manipulation and lacked control for extraneous variables as in a true experiment, so there were limitations on interpreting the results including no proof of

causation (See Creswell, 2009; Rudestam & Newton, 2015; Tuckman, 1999). In other words, there was no experimental or control group, so I could not prove that the predictor variables of spirituality and perceived social support were directly affecting the outcome variable of success in AA as measured by sobriety (See Frankfort-Nachmias et al., 2008). Therefore, the validity was questionable in regard to how well my study measured what it claimed to measure (See Creswell, 2009; Rudestam & Newton, 2015). For example, it was not clear whether spirituality and perceived social support led to success in AA or were outcomes affected by extraneous factors including concurrent substance abuse treatment. A larger sample size might have helped maintain validity because differences among individuals skew the results less in larger groups.

In my research, I also examined three side common control variables including gender, race, and being mandated to treatment to help with the validity of results (See Creswell, 2009; Rudestam & Newton, 2015). However, I was unable to perform a true experiment among these human participants in AA (See Creswell, 2009; Rudestam & Newton, 2015; Tuckman, 1999). In addition, my nonrandom nonprobability sampling might have led to incorrect assumptions about the AA population because I unsure whether the sample fairly represented the entire population.

Because I could not directly manipulate the variables of spirituality level or perceived social support level as in a true experiment, I chose a correlational design to measure the relationship between the variables in this study (See Creswell, 2009; Rudestam & Newton, 2015; Tuckman, 1999). This design allowed me to capture participants in their natural setting instead of an experimental controlled environment, so

it added to both generalizability and validity of the study. My correlational design could incorporate testing for the extra variables of gender, race, and treatment mandating, which further added to generalizability. However, I did not retest my participants, so regression may have affected internal validity.

      Threats to construct validity. There were many threats to construct validity in this study (see Frankfort-Nachmias et al., 2008). Participants' dishonesty, social desirability bias, boredom, and quick responding may all have contributed to invalid or skewed results (see Bradburn et al., 2004; Groves et al., 2009). I assumed that both the ASPIRES and MSPSS measured what they said they measured, but if these scales did not then the results would be invalid (See Groves et al., 2009). Additionally, AA members' definitions of spirituality and perceived social support might not have aligned with what these scales and my demographic questions defined as these concepts, which may have skewed results. My questions on sobriety based on the TLFB may have measured sobriety, including the transformation into a binary variable, inaccurately because they relied on self-report of drinking days and drinks per drinking days over a set period. For example, some persons answered that they drank over 50 drinks for average drinks per drinking day, which is a significantly high number.

      Further, I could not be sure who was taking the anonymous survey and whether they fit the survey criteria or were dishonest. Therefore, my research might not be measuring what it said it measured in terms of validity, and it might not be replicable in terms of reliability. I stated my guidelines clearly about who fit my survey criteria used a larger sample size to help compensate for possible reliability and validity issues.

This study involved using well-known scales to measure spirituality, perceived social support, and demographic questions about sobriety including the ASPIRES, MSPSS, and sobriety questions based on scales such as the TLFB (Piedmont, 2014; Sobell & Sobell, 2008; Zimet et al., 1988). These scales have good validity and reliability, making results more trustworthy than some past research and aiding with construct validity as they compared well to other gold standard measures in the field (See Creswell, 2009; Rudestam & Newton, 2015). However, I did not know if converting the sobriety questions to a binary variable of sober/nonsober might affect construct validity in any way (see Field, 2013).

Limitations to Reliability

Again, I could not determine for sure who were my survey participants and whether they fit my survey criteria due to possible dishonesty. Therefore, my research might be unable to be replicated and lack reliability. I clearly stated the criteria for the survey and used a larger sample size to help compensate for possible reliability issues. I do not know if repeated measures of my survey would yield the same results or not, but I did use scales in my survey with good reliability levels to help prevent errors in measurement.

Reliability or replicability of results is also questionable due to lacking control of extraneous variables (See Creswell, 2009; Rudestam & Newton, 2015). Therefore, to compensate for reliability, I tried to collect extra information on three common control variables including gender, race, and being mandated to treatment. I may have been able to improve reliability by using a larger sample size because differences do not skew the

results as much in larger groups. Reliability limitations showed that the results could not equal causation.

Recommendations

For every research study, there needs to be recommendations to build upon (See Creswell, 2009; Rudestam & Newton, 2015). Here, I discuss the recommendations of my study. I particularly discuss recommendations for future research. I discuss these recommendations based from the literature review, strengths of my study, and limits of my study while ensuring these recommendations do not exceed my study's boundaries.

Recommendations for Future Research from the Literature Review

Through the literature review, I found sources of information that might have been helpful to explore if I had the time and resources in the present study. I chose to look at my study through the theoretical lens of Frankl's logotherapy theory on the sources of meaning in life (Frankl, 1992; Chen, 2006). However, it is very possible that success in AA was due to finding sources of meaning in life apart from spirituality or social support such as meaning from a person's children or spouse not related to the AA program. It is also possible that a completely different theory was what was behind these persons' success in AA. For example, several articles posited different theories as their basis behind the relationship between spirituality and social support with substance abuse reduction including positive psychology (Selvam, 2015) and Durkheim's theory of expected behavior (Shorey et al., 2015). Perhaps operating from another theory might help add to some more perspective in the study of the relationship between spirituality,

social support, and success in AA. All these ideas might be especially applicable as I did not find a relationship between these variables in my study.

There was ample evidence that there were gender differences in both spirituality as well as social support as these related to substance abuse which I did not explore in my study (Kelly & Hoeppner, 2013). For example, men relied more heavily on their social network compared to women, and women's self-esteem affected them more all in regard to their substance abusing behavior. There were also gender differences in how men and women used spirituality as men only turned to it in their greatest times of need or loss and mostly only in early recovery while women turned to spirituality all throughout their recovery (Shamsalinia et al., 2014). Therefore, this constitutes the need for further exploration of gender differences in future research.

The literature showed racial or ethnic differences in terms of spirituality and social support (Lê Cook & Alegría, 2015; Meyers et al., 2017; Otiniano Verissimo et al., 2014). For example, African Americans tended to have religious upbringings that discouraged the use of alcohol and therefore those more religiously involved had buffering against later substance use compared to those in other races where their religious backgrounds permitted the use of alcohol (Meyers et al., 2017). Caucasians tended to turn to more intrinsic forms of spiritual support to deal with substance abuse compared to Hispanics and African Americans who turned to extrinsic forms of spiritual support, which might also have been a form of social support for these persons (Meyers et al., 2017). Therefore, it may have been beneficial to specifically analyze the racial differences in future research for that reason as well as the specific religious groupings.

There were age differences for both spirituality and social support affecting substance abuse that I did not specifically analyze in my study according to the literature review (Kuerbis et al., 2014; Moscati & Mezuk, 2014). For example, for elderly persons their social support did not relate to their substance use perhaps because they had lost much of their support due to migration, isolation, and death (Kuerbis et al., 2014). For children, both increases and decreases in spirituality could affect substance abuse levels unlike the general adult population (Moscati & Mezuk, 2014). In addition, there seemed to be some affect in how spirituality over the lifespan affected substance use, whereas my study only asked for present spirituality.

In the literature review, there were differences in types of social support affecting substance abuse (Melander et al., 2016). For example, some studies showed that some forms of social support were detrimental including those involving others users in the person's social network (Melander et al., 2016; Osilla et al., 2016). However, one study of incarcerated women showed that it was possible to change a person's type of social support to more positive sources to improve substance abuse outcomes after incarceration (Nargiso et al., 2014). Therefore, it may have been beneficial for me to study more specifically the types of social support of my participants in future research.

The literature showed differences in spirituality and types of social support depending on geographic location (Mohammadpoorasl et al., 2014; Petrova et al., 2015; Shamsalinia et al., 2014). Certain research indicated that foreign samples in Iran had buffering against substance abuse when living in dorms in college rather than at home, perhaps indicating different forms of social support compared to that in the U.S.

(Mohammadpoorasl et al., 2014). On the other hand, in another Iranian sample, familial upbringing with its religious influence buffered against later substance abuse, and this was especially true for women in this culture who are more ingrained in traditional religion than the men (Shamsalinia et al., 2014). These differences might be worth exploring further in other foreign samples that have some differences from U.S. samples.

The literature review indicated that there were differences between types of drug addiction and whether or how spirituality and social support affected substance abuse (Schoenthaler et al., 2015). Unlike other types of drugs or alcohol, crack cocaine addicted persons had an inverse relationship between spirituality level and substance abuse level. Researchers could consider studying other types of drug abuse in future research or even compare these to alcohol abuse.

The literature review also showed the need to study whether persons were mandated to come to AA (Lê Cook & Alegría, 2015). In this one study, that factor affected outcomes but criminal activity and socio-economic status were more important factors in determining whether persons completed substance abuse treatment even more than racial differences. AA in its original form is a voluntary self-help group (AAWS, 2018). Therefore, mandating people to come runs contrary to its basic tenets and mechanisms for helping people obtain help for themselves. Future research might study and analyze this factor of being mandated to AA or treatment along with others to determine if this influenced outcomes in any way.

Recommendations for Future Research from the Strengths of the Study

There were several recommendations for future research stemming from the strengths of the study (See Creswell, 2009; Rudestam & Newton, 2015). The use of two well-known and well tested scales, the ASPIRES and MSPSS, helped add to the validity and reliability of the study (Piedmont, 2014; Zimet et al., 1988). Future research might also consider using these or other such scales that were normed on several diverse groups, religions, and different populations including addicted persons to add to the value of their studies (See Creswell, 2009; Rudestam & Newton, 2015).

Using an anonymous online survey also may have added to addicted persons being willing to answer questions about their nonsober behavior that they may not have answered as honestly if using an in person interview or another nonanonymous method (SurveyMonkey, 2017). The survey was also user friendly and easy to access by computer or smart phone, which added to more persons possibly taking the survey. The research was also very low cost, which might allow easy replication of the study by students who lack grant funding for future dissertations (See Creswell, 2009; Rudestam & Newton, 2015). The paper-pencil version may have added to the inclusiveness of the survey to include persons who were unable to access computers and other technology due to lack of funds, education, or other reasons. In fact, doing so seemed to encourage persons who were nonsober to answer willingly and honestly about their substance abusing behavior perhaps due to personal contact with the researcher to relieve some of their anxieties about taking the survey. Therefore, I would recommend in-person

solicitation in addition to online solicitation to obtain the needed nonsober persons at a faster rate.

Recommendations for Future Research from the Limits of the Study

There were also several recommendations for future research stemming from the limits of the study (See Creswell, 2009; Rudestam & Newton, 2015). Although, the scales I used were both reliable, valid, and tested on diverse populations including addicted persons, they also left room for improvement (Piedmont, 2014; Zimet et al., 1988). For example, from doing my data analysis, there was a facility solely serving the Native American population who found it offensive that their race was not listed in the ASPIRES and therefore refused to present the survey flyers to their clients. This population could have provided important information on racial differences but only had the option of checking "other" for their race (Piedmont, 2014). This same group also mentioned that the LGBTQ members of their population could not simply check the "Male/Female" gender option in the ASPIRES. The creator of the ASPIRES in response did state that he had used his scale on these two populations before, and for the latter he had made some modifications for his assessment. These may be necessary changes for future research. The MSPSS also does not distinguish between possible sources of unhealthy social support, which the literature pointed out, may be detrimental in regard to substance abuse, so another possible scale measuring such types of perceived social support may be necessary to accommodate this need in the future (Zimet et al., 1988). The use of other scales may improve outcomes as these scales might not represent how

addicted persons define spirituality and perceived social support (See Creswell, 2009; Rudestam & Newton, 2015).

Although using an anonymous online survey had many benefits, it also had some pitfalls (SurveyMonkey, 2017). Many addicted persons may not have access to the internet or knowledge of how to use computers and smart phones and, therefore, may be unable to complete the survey. That also indicates that the study may not be representative of the entire addicted population including those too poor to use such technology or lacking education of how to do so. Future research might include a paper-pencil version as well as the online version to better represent the entire population. Adding a paper-pencil version helped to remedy some of this problem. This version allowed me as the researcher to collect the needed nonsober participants whereas persons were rarely willing to take and complete the online version who were nonsober perhaps due to anxiety about what would be done with the results or lack of trust of the researcher that they could not see upfront as they could in the paper-pencil version.

As mentioned before, several people I contacted about distributing my survey flyers had suggested for these reasons that some kind of financial compensation such as a raffle may have increased participation among those of this group who are in financial need and may otherwise lack the motivation to take this survey. Future research might need to shorten the survey time so that more persons would be motivated to take the survey (See Creswell, 2009; Rudestam & Newton, 2015). Doing these steps might improve chances of those actually addicted completing the survey all the way through. In my study, using the online version, I had to throw out most of the respondents who

admitted to nonsober behavior because they chose not to complete the rest of the scales

after answering the few sobriety demographic questions in the first part of the survey.

Perhaps putting these sobriety questions at the end of the survey might also have

improved outcomes. The use of the paper-pencil version helped improve this situation so

that more nonsober participants completed the full survey.

My study was limited also to mostly the Maryland population, though I did

expand to the national level, of AA members (See Creswell, 2009; Rudestam & Newton,

2015). Future research might replicate this study in other parts of the world or other

states in the U.S. to find differences between these geographical locations just as

indicated in the literature review (Mohammadpoorasl et al., 2014; Petrova et al., 2015;

Shamsalinia et al., 2014). Future research might also study different drugs of choice or

different anonymous groups such as Narcotics Anonymous. In my distribution of my

survey flyers, I came across many methadone clinics who service mainly opiate addicted

persons, so there may be some value in seeing differences in addiction just as indicated

by the literature review especially among crack cocaine addicted persons that reacted

differently than most to levels of spirituality and drug use (Schoenthaler et al., 2015).

Implications

Every study has implications that are important (See Creswell, 2009; Rudestam &

Newton, 2015). Here, I discuss my study's implications. I detail implications for

positive social change, methodological-theoretical-empirical implications, and

recommendations for practice.

Positive Social Change

The potential impact for positive social change is apparent at various levels. First, for the individual AA member, they may need to seek other types of coping besides spirituality and social support if the findings of my study hold true. This is in light of the overall model not classifying cases as sober or nonsober any better than the model before the predictors were added and no significant predictive relationship between perceived social support and success in AA. However, in light of their being a significant predictive relationship between spirituality and success in AA as measured in my study, certain types of spirituality may have a small effect as shown in the study on predicting success in AA in terms of sobriety. On the other hand, they may need to seek sources of spirituality and social support for coping that are simply defined differently than they were in my study to improve outcomes for their recovery (See Creswell, 2009; Rudestam & Newton, 2015). Families may be sources of potential social support and spirituality as demonstrated in some articles but not supported necessarily by my study (Shamsalinia et al., 2014). Therefore, they must strive to find how best to socially support these individuals even if this is not how I defined social support according to the ASPIRES and MSPSS (Piedmont, 2014; Zimet et al., 1988). It may be likely that my findings may have shown that some of these sources of perceived social support were not revealed as so but were actually sources of substance abusing support that were detrimental to recovery as shown in other studies (Melander et al., 2016; Osilla et al., 2016)

Organizationally, clinicians and other researchers may want to further research what are some factors that actually do relate to success in AA if spirituality and perceived

social support do not in order to improve outcomes for those they refer to AA for help or better design groups to help such alcoholic and other substance abusing individuals (See Creswell, 2009; Rudestam & Newton, 2015). Maybe exploring again other types of spirituality and social support might help that I did not study. In contrast, the types of spirituality that did show some predictive value in my study for success in AA in terms of sobriety may be what these clinicians should focus on strengthening in their clients. Lastly, societally/policy wise those who are legally mandating persons to go to AA might need to find some other places to send them if they do not seem to be connecting there. AA is a voluntary program, and coercing persons to go to such a program might not be of anymore benefit than not doing so (AAWS, 2018). Again, there needs to be a push to first discover what characteristics do those possess who do well in AA and what might they refer people to who do not meet those characteristics (Kelly & Greene, 2014). Perhaps more research would benefit society on all three variables (See Creswell, 2009; Rudestam & Newton, 2015). Research that uses new data and direct analysis of that data as my study did would be invaluable in filling in the gap in the research that I found of that type of analysis. I believe that finding out more free resources and appropriate referrals for these substance abusers that cannot afford to get paid treatment extensively such as through AA and other related support groups can be invaluable in helping stop this epidemic. Doing so will lower drug-related crime rates, increase productive lives and citizens among former substance abusers, lower treatment costs to society, and provide adjunctive services that are readily available to persons who need it at any time (Kelly & Greene, 2014; Kelly & Hoeppner, 2013; Lê Cook & Alegría, 2015; Mawson et

al., 2015; Reif et al., 2014; Young, 2012). Ultimately, it may increase these persons

quality of life. Knowing the characteristics of persons benefiting from AA or other such

supportive groups could help give clinicians the ability to better convince clients to try

these types of support who might benefit from them. The fact that so many of my

participants were doing well despite whatever levels of spirituality and social support,

attests to the value of AA support group and similar groups in helping people in recovery

even if we do not understand the mechanisms through which they do so, and attests to the

need to further explore such mechanisms.

Methodological, Theoretical, Empirical Implications

There are several methodological, theoretical, and empirical implications from my

study. First of all, I emphasize the need for more direct analysis studies, including

surveys, on the topic of my three studied variables of spirituality, perceived social

support, and success in AA in terms of sobriety (See Creswell, 2009; Rudestam &

Newton, 2015). There was a definite gap in the research regarding this type of analysis

and my findings contradicted those of other researchers who did secondary analysis of

outdated participant data sets (Kelly & Greene, 2014; Kelly & Hoeppner, 2013; Lê Cook

& Alegría, 2015; Mawson et al., 2015; Reif et al., 2014; Young, 2012). I also suggest in

my findings that future researchers learn from my mistakes and provide some kind of

financial incentive even if it is in the form of a raffle to motivate persons who are still

nonsober to take the survey and complete it (See Creswell, 2009; Rudestam & Newton,

2015). This is to promote those who are underprivileged among this population to be

more likely to participate also. I would recommend providing pencil and paper versions

of the survey besides just the online version to those who cannot use technology because of lack of access, lack of funding, or lack of education how to do so, but whose data are also just as valuable as their more affluent and more educated substance abusing counterparts. In my study, using a paper-pencil version allowed me to collect many more nonsober participants' data at a much faster rate perhaps because these persons trusted me more after meeting me in person compared to the anonymous online surveys. The survey may need modification to include more minority categories such as Native Americans as well as other options for gender to include the LGBTQ community to promote their participation in the survey (Piedmont, 2014). I would recommend putting the substance abuse questions at the end of the survey as many people who answered yes to using alcohol stopped taking the rest of the survey after they answered honestly to that question at least in my online version (See Creswell, 2009; Rudestam & Newton, 2015). Perhaps switching the order would help because I lost valuable data points that could have helped me better understand the relationship between these variables due to so many persons not completing the survey that had used substances. I would also recommend specifically soliciting for nonsober participants in the flyers and survey instructions if insufficient numbers are raised in data collection, as I had to do to complete my analysis.

I found many theoretical implications from my study. Logotherapy was my theoretical framework and it promotes finding sources of meaning in life as a way to cope healthily with life's stressors (Chen, 2006; Frankl, 1992). Initially, my study had mixed findings as the case classification charts did not show any relationship between my predictor variables of spirituality and perceived social support with success in AA in

terms of sobriety, but the odds ratio showed a small significant predictive relationship between spirituality and success in AA. These AA members mostly showed they were already sober in AA regardless of their spirituality or social support level. On average, their spirituality and social support level was average high to begin with as a total group as well as their having a high sobriety level. Perhaps this implies that the types of spirituality and social support I studied was not what AA members define as these variables. On the other hand, perhaps the AA group itself was a source of spirituality and social support. Yet again, perhaps the AA group itself is a source of meaning for these individuals that helps them cope with life in healthy ways. And my study did show that there was a small effect in terms of certain types of spirituality that I measured in terms of predicting success in AA, so those types of spirituality as measured by the ASPIRES might be a source of life meaning to buffer against addiction (Piedmont, 2014).

It is hard to discern these mentioned factors given the data I obtained, and perhaps that is implication for the need for more empirical research on the topics I studied to clarify the situation (See Creswell, 2009; Rudestam & Newton, 2015). There is some confusion per my mixed findings as empirical implications from my data as my overall model did not better classify the cases with the predictors of sober/nonsober participants compared to the model without the predictors, but it did show a small predictive relationship through the odds ratio of spirituality and success in AA in terms of sobriety. My dataset were relatively small, which may have offset the results. I would recommend redoing this study with a larger set of data and a more varied data set including both

sober and nonsober individuals in larger quantities to better clarify and answer my questions more accurately.

Recommendations for Practice

I have some recommendations for practice from my study. Because of my mixed results that the overall model did not better classify the sober/nonsober cases compared to before addition of the predictor variables, but there was a small effect of prediction from spirituality on success in AA in terms of sobriety, some conclusions follow. Clinicians cannot necessarily make assumptions that only spiritual persons or those interested in social support would benefit from AA (See Creswell, 2009; Rudestam & Newton, 2015). They should continue referring all persons that are willing to go there until more comprehensive recent research shows otherwise. The fact that AA is a free program can benefit those underprivileged persons who cannot otherwise afford extensive paid treatment services. It appears from my study that many people were benefiting from AA despite their spirituality or social support level. Perhaps AA itself is their way of coping whether it is a form of spirituality or social support for them or not. This study still points to the value of AA as so many of the participants were remaining sober regardless of their scores on the other variables. Clinicians may want to consider designing support groups in their clinics based off of similar principles to AA and see if this will benefit their alcoholic clients. In addition, certain types of spirituality, such as those measured by the ASPIRES, might help slightly predict success in AA in terms of sobriety, so that such spiritual persons might benefit more than others in AA (Piedmont, 2014). In

addition, these clinicians may want to encourage clients to strengthen these types of spiritual coping to better their chances of succeeding in AA.

Clinicians should be doing their own research on these topics and on what other characteristics might be indicative of likely success in AA and similar support groups if the variables I studied do not apply (Creswell, 2009; Rudestam & Newton 2015). They also need some more research to discover if persons who are sober in AA a long time then become more spiritual and have more social support or is the case vice-versa. Most of all, clinicians should ask clients what would they want to keep them motivated to stay in self-help support groups such as AA and find collaborately what works for these clients and help them obtain the help they need. Especially clinicians should direct clients to other services besides AA if that is not their preference because such services may not benefit them if they feel forced to go there and their wishes are ignored.

Conclusion

In conclusion, although my study did not yield the results I expected to find, I still feel that there was much valuable information that I learned from it and that can benefit others as well. I feel that my study still supports the fact that AA continues to help people stay sober although my study mixed insight into the mechanisms through which it does so. On the one hand, persons cannot necessarily be better classified into sober/nonsober groupings after adding the predictors of spirituality and perceived social support as defined in my study at least to the model, but there is slight predictive value of my study's definition of spirituality in regard to success in AA. Either way, AA appears to still be a valuable resource for those clients desiring to use it in their recovery from

alcoholism. Therefore, clinicians can continue to use AA as a referral source for willing

clients that want additional help in their recovery. They may also want to find alternative

sources of recovery support for those clients who do not prefer to go to AA. In addition,

clinicians can use AA and other support groups as a guide to designing their in-house

support groups for this and other related issues. Other researchers might use direct

analysis of current data with sufficient sampling size to discover the various ways of how

spirituality, perceived social support, and success in AA in terms of sobriety relate to

each other among AA members today more in depth than I was able to do in my study.

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Appendix A: Demographic Questionnaire

Are you a current or former member of Alcoholics Anonymous?
    ___Yes   ___No   ___Prefer Not to Disclose

Are you a current Maryland resident?
    ___Yes   ___No   ___Prefer Not to Disclose

Are you 18 years old or older?
    ___Yes   ___No   ___Prefer Not to Disclose

IF YOU ANSWERED <u>NO</u> to any of the THREE QUESTIONS ABOVE, Please <u>STOP HERE</u>.
(You are <u>not</u> qualified to take this survey according to the inclusion criteria. Thank you for your time!)

Are you mandated to come to Alcoholics Anonymous?
    ___Yes   ___No   ___Prefer Not to Disclose

Have you been sober over the last 90 days (completely free/refraining from using alcohol)?
    ___Yes   ___No   ___Prefer Not to Disclose

How many days have you drank alcohol over the last 90 days (number of days)?
    _____

How many drinks on average have you drank of alcohol on those days you drank over the last 90 days? (If 12oz beer = 5 oz glass of 12% wine=1 1/2 oz of hard liquor = 1 mixed drink w/ 1 1/2 oz of hard liquor) (number of drinks)?
    _____

Appendix B: Permission to Use ASPIRES

Here is the licensing agreement with Dr. Ralph Piedmont, creator of the ASPIRES,

explaining details of how to appropriately use the ASPIRES in my study and also

parameters of cost of doing so.

PERMISSION AGREEMENT

Dear Ms. Hosmane:

In response to your recent request, permission is hereby granted to you, Mala Hosmane, to use the *Assessment of Spirituality and Religious Sentiments* (ASPIRES) scale: long form, in your study, entitled, "The relationship between spirituality, perceived social support, and success in Alcoholics Anonymous" subject to the following restrictions:

(1) Any and all materials used will contain the following credit line: "ASPIRES copyrighted 2003 by Ralph L. Piedmont, Ph.D. Further reproduction is prohibited without permission of the Publisher." This line **must appear** before the initial presentation of the items in the survey

(2) None of the materials may be sold or used for purposes other than those described above.

(3) You are permitted to perform 100 administrations of the ASPIRES electronically.

(4) You will pay a licensing fee of $50.00. If you administer more than 100 forms, you will pay a licensing fee of $0.50 (fifty cents) for each additional administration

(5) Items will be presented in the same order as they appear in the paper version of the instrument.

(6) This agreement will expire on June 13, 2019.

Please make two copies of this Permission Agreement. One should be signed and returned to me to indicate your agreement with the above conditions. Keep the other copy for your records.

ACCEPTED AND AGREED:

BY: _____
Ralph L. Piedmont, Ph.D.

Date: June 14, 2018

BY: _____

PRINTED NAME: _____Mala Hosmane_____

Appendix C: MSPSS Scale

Multidimensional Scale of Perceived Social Support
Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.
Circle the "1" if you Very Strongly Disagree
Circle the "2" if you Strongly Disagree
Circle the "3" if you Mildly Disagree
Circle the "4" if you are Neutral
Circle the "5" if you Mildly Agree
Circle the "6" if you Strongly Agree
Circle the "7" if you Very Strongly Agree

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
1.There is a special person who is around when I am in need.	1	2	3	4	5	6	7
2.There is a special person with whom I can share joys and sorrows.	1	2	3	4	5	6	7
3.My family really tries to help me.	1	2	3	4	5	6	7
4.I get the emotional help & support I need from my family.	1	2	3	4	5	6	7
5.I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7
6.My friends really try to help me.	1	2	3	4	5	6	7
7.I can count on my friends when things go wrong.	1	2	3	4	5	6	7
8.I can talk about my problems with my family.	1	2	3	4	5	6	7
9.I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
10. There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7
11. My family is willing to help me make decisions.	1	2	3	4	5	6	7
12. I can talk about my problems with my friends.	1	2	3	4	5	6	7

Zimet, G.D., Dahlem, N.W., Zimet, S.G., & Farley, G.K. (1988). The Multidimensional Scale of Perceived Social Support.
Journal of Personality Assessment, 52, 30-41.

Appendix D: Modified Demographic Questionnaire

Are you a current or former member of Alcoholics Anonymous?
___Yes   ___No   ___Prefer Not to Disclose

Are you a current Maryland resident?
___Yes   ___No   ___Prefer Not to Disclose

Are you 18 years old or older?
___Yes   ___No   ___Prefer Not to Disclose

IF YOU ANSWERED <u>NO</u> to being a Alcoholics Anonymous member or being 18 years old or older, or if you are <u>NOT</u> a <u>U.S. RESIDENT</u>, Please <u>STOP HERE</u>. (You are <u>not</u> qualified to take this survey according to the inclusion criteria. Thank you for your time!)

Are you mandated to come to Alcoholics Anonymous?
___Yes   ___No   ___Prefer Not to Disclose

Have you been sober over the last 90 days (completely free/refraining from using alcohol)?
___Yes   ___No   ___Prefer Not to Disclose

How many days have you drank alcohol over the last 90 days (number of days)?
_____

How many drinks on average have you drank of alcohol on those days you drank over the last 90 days? (If 12oz beer = 5 oz glass of 12% wine=1 1/2 oz of hard liquor = 1 mixed drink w/ 1 1/2 oz of hard liquor) (number of drinks)?
_____

Appendix E: Modified Permission to Use ASPIRES

Here is the licensing agreement with Dr. Ralph Piedmont, creator of the ASPIRES,

explaining details of how to appropriately use the ASPIRES in my study, including the

paper-pencil format, and also parameters of cost of doing so.

Ψ

PERMISSION AGREEMENT

Dear Ms. Hosmane:

In response to your recent request, permission is hereby granted to you, Mala Hosmane, to use the *Assessment of Spirituality and Religious Sentiments* (ASPIRES) scale: long form, in your study, entitled, "The relationship between spirituality, perceived social support, and success in Alcoholics Anonymous" subject to the following restrictions:

(1) Any and all materials used will contain the following credit line: "ASPIRES copyrighted 2003 by Ralph L. Piedmont, Ph.D. Further reproduction is prohibited without permission of the Publisher." This line **must appear** before the initial presentation of the items in the survey

(2) None of the materials may be sold or used for purposes other than those described above.

(3) You are permitted to perform 200 administrations of the ASPIRES that will be contained in your own survey, on condition that it is used in a manner consistent with the sample form you have provided to me.

(4) You will pay a licensing fee of $100.00. If you administer more than 100 forms, you will pay a licensing fee of $0.50 (fifty cents) for each additional administration

(5) Items will be presented in the same order as they appear in the paper version of the instrument.

(6) This agreement will expire on December 31, 2019.

Please make two copies of this Permission Agreement. One should be signed and returned to me to indicate your agreement with the above conditions. Keep the other copy for your records.

ACCEPTED AND AGREED:

BY: _____
Ralph L. Piedmont, Ph.D.

Date: December 23, 2018

BY: _____

PRINTED NAME: Mala Hosmane

Appendix F: Tables for Demographics

Table F1

Frequency of Respondents by Gender

Gender	*n*	%
Male	41	44.1
Female	52	55.9
Total	93	100.0

Note. Frequency and percentages of gender.

Table F2

Measures of Central Tendency for Age

Age	*n*
Mean	50.68
SD	13.932
Median	54.00
Mode	60
Range	63
Minimum	19
Maximum	82
Total Respondents	93

Note. Measures of central tendency for age

Table F3

Frequency of Respondents by Race/Ethnicity

Race	*n*	%
No Response	1	1.1
Arabic	0	0.0
Asian	0	0.0
Black	8	8.6
Caucasian	80	86
Hispanic	1	1.1
Other	3	3.2
Total	93	100.0

Note. Frequency and percentages of races/ethnicities.

Table F4

Frequency of Respondents by Religious Affiliation

Religion	Frequency	Percent
No Response	1	1.1
Catholic	10	10.8
Lutheran	6	6.5
Methodist	4	4.3
Episcopal	4	4.3
Unitarian	2	2.2
Baptist	5	5.4
Presbyterian	6	6.5
Mormon	0	0
Other Christian	30	32.3
Jewish	1	1.1
Muslim	0	0
Hindu	0	0
Buddhist	2	2.2
Atheist/Agnostic	6	6.5
Other Faith Tradition	16	17.2
Total	93	100.0

Note. Frequency and percentages of religious affiliations.

Table F5

Frequency of Respondents by Sobriety in Terms of Binary Variable (Sober/NonSober)

Variable	n	%
Sober	62	66.7
NonSober	31	33.3
Total	93	100.0

Note. Frequency and percentages of Sobriety binary variable (Sober/NonSober).

Appendix G: Statistics for Gender and Age

Table G1

Gender Chi-Square Tests

	Value	*df*	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.022[a]	1	0.883		
Continuity Correction[b]	0	1	1		
Likelihood Ratio	0.022	1	0.883		
Fisher's Exact Test				1	0.528
Linear-by-Linear Association	0.022	1	0.883		
N of Valid Cases	93				

Note. Gender Chi-square tests to determine eligibility for inclusion in the final model.

Here showing ineligibility. Sig.= significance.

[a]0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.67.

[b]Computed only for a 2 x 2 table

Table G2

Gender Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	-0.015	0.883
	Cramer's V	0.015	0.883
N of Valid Cases		93	

Note. Gender symmetric tests to determine eligibility for inclusion in final model. Here

showing ineligibility.

Table G3

Age Descriptive Statistics

	N	Range	Min	Max	Mean	*SD*	Variance	Skewness		Kurtosis	
									SE		*SE*
Age								-		-	
	93	63	19	82	50.68	13.932	194.112	0.392	0.25	0.373	0.4
											95
Valid N (listwise)	93										

Note. Here indicates drastic skewness and kurtosis in the age variable making it ineligible

for inclusion in the final model. Min = minimum score; Max = maximum score.

Table G4

Age Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	*df*	Sig.	Statistic	*df*	Sig.
Age	0.125	93	0.001	0.966	93	0.015

Note. Age tests of normality (here nonnormal).

Sig.=significance.

Appendix H: Descriptive Statistics for Spirituality and Social Support

Table H1

Descriptive Statistics for Assessment of Spirituality and Religious Sentiments (ASPIRES)

N	Total ASPIRES
Valid	93
Missing	0
Mean	132.58
Median	133.00
Mode	123[a]
SD	14.550
Variance	211.703
Skewness	-0.288
SE of Skewness	0.250
Kurtosis	0.425
SE of Kurtosis	0.495
Range	79
Minimum	84
Maximum	163

Note. Higher scores in general mean higher levels of spirituality and religiosity.

[a]Multiple modes exist, the smallest is shown.

Table H2

Descriptive Statistics of Multidimensional Scale of Perceived Social Support (MSPSS)

N	Total MSPSS
Valid	93
Missing	0
Mean	5.337
Median	5.750
Mode	5.750
SD	1.259
Variance	1.586
Skewness	-1.147
SE of Skewness	0.250
Kurtosis	1.296
SE of Kurtosis	0.495
Range	6.000
Minimum	1.000
Maximum	7.000

Note. Calculated through average of raw scores. Higher scores mean higher levels of

perceived social support and vice-versa.

Table H3

Descriptive Statistics for ASPIRES, MSPSS, and Sobriety

	M	*SD*	*N*
Total Sobriety	18.65	39.699	93
Total ASPIRES	132.58	14.550	93
Total MSPSS	5.337	1.259	93

Note. Summary descriptive statistics for each of the three variables of the study. Sobriety = totaled sobriety questions about drinking days and average drinks over the last 90 days.

Appendix I: Descriptive Statistics for Outliers

Table I1

Descriptive Statistics Prior to Outlier Elimination ASPIRES

			Statistic	Std. Error
Total	Mean		131.83	1.671
ASPIRES	95% CI for	Lower	128.51	
Score	mean	Upper	135.15	
	5% Trimmed Mean		132.49	
	Median		133.00	
	Variance		262.422	
	SD		16.199	
	Minimum		62	
	Maximum		163	
	Range		101	
	IR		19	
	Skewness		-0.973	0.249
	Kurtosis		3.100	0.493

Note. CI = confidence interval; IR = interquartile range

Table I2

Descriptive Statistics Prior to Outlier Elimination MSPSS

			Statistic	Std. Error
Total	Mean		5.304	0.133
MSPSS	95% CI	lower	5.039	
Score	forMean	upper	5.569	
	5% Trimmed Mean		5.397	
	Median		5.667	
	Variance		1.670	
	SD		1.292	
	Minimum		1.000	
	Maximum		7.000	
	Range		6.000	
	IR		1.521	
	Skewness		-1.122	0.249
	Kurtosis		1.070	0.493

Note. CI = confidence interval; IR = interquartile range

Appendix J: Logistic and Linear Regression Results

Table J1

Binary Logistic Regression Testing Linearity of the Logit

	B	*SE*	Wald	*df*	Sig.	Exp(*B*)
Total ASPIRES	0.882	1.189	0.550	1	0.458	2.415
MSPSS Total	4.492	2.883	2.427	1	0.119	89.275
Ln(TotalASPIRES) x Total ASPIRES	-0.157	0.204	0.596	1	0.440	0.855
Ln(TotalMSPSS) x MSPSS Total	-1.923	1.152	2.788	1	0.095	0.146
Constant	-22.258	25.301	0.774	1	0.379	0.000

Note. No significant interactions are present between all interactions of the logit of the

variables. Ln = logit, *B* = *b* value showing whether one outcome of the binary outcome

variable is more likely or less likely than the other; Wald = Wald statistic determining

significance of odds ratio, Sig. = significance level; Exp(*B*) = odds ratio

Table J2

Linear Regression Collinearity Statistics

	Tolerance	VIF
Total ASPIRES	0.937	1.067
MSPSS Total	0.937	1.067

Note. The dependent variable: total sobriety binary score. Here are the Tolerance and VIF

values for the predictor variables showing no multicollinearity.

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Table J3

Model 1: Variables in Logistic Regression Equation

		B	SE	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B) Lower	Upper
Step 1[a]	Total ASPIRES	-0.039	0.017	4.898	1	0.027*	0.962	0.930	0.996
	Total MSPSS	-0.236	0.186	1.608	1	0.205	0.790	0.548	1.138
	Constant	5.630	2.361	5.685	1	0.017	278.788		

Note. The output from the logistic regression analysis in the final model. CI = confidence

interval. $B = b$ value showing whether one outcome of the binary outcome variable is

more likely or less likely than the other; Wald = Wald statistic determining significance

of odds ratio, Sig. = significance level; Exp(B) = odds ratio

[a]Variable(s) entered on step 1: Total ASPIRES Score and Total MSPSS Score.

p < .05, showing significance of Total ASPIRES Score in predicting Sober/NonSober

variable