LEARNED HELPLESSNESS, ALCOHOL ABUSE, DEPRESSION, AND DIABETES: A PREDICTIVE STUDY

by

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Abstract

This study examined the relationship between learned helplessness, gender, ethnicity, income, alcohol use, depressive levels, and risk factors for diabetes. The relationship between learned helplessness and alcohol use, depressive levels, and risk factors for diabetes as a multimorbidity was explored. The scientific literature showed that multimorbidities are not studied in the scientific literature as compared to co-occurring disorders or two more disorders. The first Research Question investigated if any relationships existed between levels of learned helplessness, as measured by the Coping Competence Questionnaire (CCQ), and ethnicity, gender, or income (Schroder & Ollis, 2013). The second Research Question explored the relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the Alcohol Use Disorder Identification Test: Self-Report Version (AUDIT) (Babor, 2001; Schroder & Ollis, 2013). The third Research Question explored the relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the Patient Health Questionnaire-8 (PHQ-8) (Schroder & Ollis, 2013; Spitzer, Williams, & Kroenke, 2014). The fourth Research Question examined the relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes (Heejung et al., 2009; Schroder & Ollis, 2013). The last Research Question investigated if any relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes (Babor, 2001; Heejung et al., 2009; Schroder & Ollis, 2013; Spitzer et al., 2014). The study was a quantitative non-experimental design that analyzed data using a one-way ANOVA, post hoc with Tukey HSD, *t* test, and Spearman's rho.

The ethnicity that was selected for this study included White, Black, and Hispanic populations whose age was between 18 through 64. The study concluded that in Research Question 1 ethnicity and learned helplessness were statistically significant. This meant that there was a negative correlational relationship between participant's income and scores of learned helplessness. Furthermore, a positive correlational relationship between learned helplessness and depressive symptoms was also established. Additionally, multiple correlations were completed between learned helplessness and alcohol use, depressive symptoms, and risk factors for diabetes and no other correlation were found amongst these variables through various groupings; for the exception of learned helplessness and depression.

Dedication

This dissertation is dedicated to my husband and children, A.J. Benavidez-Garcia, Jon Garcia, Michael Garcia, and Jiraiya Garcia. I want to thank my husband who had the patience to see me through all my educational endeavors, especially my doctorate degree. It has been a long road and I couldn't have done this without you by my side. My husband who had all the patience in the world and who put up with me through the many late nights. The person who kept me going and supported me all those times that I wanted to quit. Also to my children who knew that "daddy had to stay home and do homework" and missed so many family events. I also want to thank my sister, Deisy Garcia; my mother and father, Maria Garcia and Artemio Garcia, and family who supported me through this journey and were understanding every time that I had to miss family functions and would hear me out over on the phone when I was frustrated. To my "Welo" Reynaldo Garcia who would always tell me that he was proud of me when we spoke about my education and passed away during one of my residencies. To my "Wela" Lucila Garcia, for always believing in me and encouraging me to succeed. Thank you to everyone who emotionally and spiritually supported and guided me through all these years, this has been one of my biggest accomplishments and it would not have been possible without your support.

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CHAPTER 1. INTRODUCTION

Background of the Problem

Alcohol use, depression, and diabetes as a multimorbidity in patients is a topic that has not been clearly investigated in the scientific literature. Often when clients present with complicated disorder such as alcohol use, depression, and diabetes, a multi-faceted approach must be used to treat the patient (McGovern et al., 2015; Russolillo et al., 2016). Additionally, the scientific literature has shown that there is a trend for integrated care services which integrate mental and medical health issues (Dale & Lee, 2016; Jones & Ku, 2015). There is a lack of understanding on why multimorbidities occur amongst different ethnicities in the scientific literature, more specifically when investigating alcohol use, depression, and diabetes (Tann, Yabiku, Okamoto, & Yanow, 2007). Research has also shown that poverty and lower socioeconomic status can increase co-occurring disorders in disadvantaged ethnicities such as White, Black, and Hispanic populations (Kim, Shim, & Lee, 2016; Mossakowski, 2015; Taylor et al., 2014). Extensive research has been completed on depression, alcohol use, and diabetes independently, but as a multimorbidity the scientific literature has yielded little to no current available research. Furthermore, there are few theories that help to support an understanding on multimorbidities. In this study, there were two theories which consisted of Seligman's learned helplessness theory and Abramson and Metalsky's hopelessness theory (Abramson & Metalsky, 1989; Maier & Seligman, 1976). This study investigated how learned helplessness and alcohol use, depressive symptoms, risk factors for diabetes, and demographic variables were related.

Supporting Theories

This study incorporated two theories to further understand the concept of multimorbidity in alcohol use, depression and diabetes. The first and primary theory included the theory of learned helplessness and the second theory is the hopelessness theory. These theories offer a further understanding to the concept of multimorbidities and expand on the current application for these theories.

Two theories found in the scholarly literature offer some insight on multimorbidities and how they may develop in patients. The first theory includes the theory of learned helplessness, first postulated by Martin Seligman and colleagues (Maier & Seligman, 1976). Learned helplessness is the theory that was first postulated to explain how uncontrollable and aversive events lead individuals to learn maladaptive behaviors, which could explain multimorbidities in individuals (Maier & Seligman, 1976). Initial research on learned helplessness investigated increasing exposure to uncontrollable traumatic events which lead to deficits in the areas of behavioral coping, associative learning, and emotional expression (Overmier, 2002). Furthermore, it was postulated that individual's strategies to combating the negative experiences were ineffective and lead to learned helplessness (Overmier, 2002). In a study by Shepard, Vajda, Nyer, Clarke, and Gonder-Frederick (2014), they showed that patients who had complicated hypoglycemic episodes tended to show higher levels of learned helplessness and so further research was suggested with those with diabetes and learned helplessness.

A second theory that can be used to support a rational to the development to multimorbidities could include the hopelessness theory, which is a theory of depression. The foundation for hopelessness theories combines two aspects which include negative expectations

over an outcome and the expectation of helplessness and the likelihood of not being able to change these outcomes (Abramson & Metalsky, 1989). Hopelessness theory explains the connection between an individual's expectancy of a highly-desired outcome will likely not occur or the opposite that a highly aversive outcome could occur, combined with the expectation that there is nothing that the individual has learned that will make any difference on how these outcomes will play out (Abramson & Metalsky, 1989). Essentially, hopelessness theory has in its core aspects of learned helplessness theory, but utilizes multi model aspect to explain a set of acquired symptoms.

In the following section, a brief review of the literature was conducted and broken down by variables being investigated as they relate to learned helplessness. The first variable reviewed was alcohol use, followed by depression, then diabetes.

Alcohol Use

Learned helplessness is most associated with depression in the scientific literature and few articles have examined the relationship on how learned helplessness or depression leads to disorders such as alcohol use or abuse. Furthermore, many articles investigated the link between learned helplessness or depression and alcohol use amongst male and females in colleges or universities; disproportionately amounts investigated only female habits (Geisner, Mallett, & Kilmer, 2012; Lee, Midford, & Malone, 2012; Lonczak, Neighbors, & Donovan, 2007; Merrill, Reid, Carey, & Carey, 2014; Noel & Lisman, 1980; Wechsler, Dowdall, Davenport, & Rimm, 1995). A study by Vaughan, Robbins, and Escobar (2014) investigated the relationship between demographic, mental health, and physical health predictors of alcohol use in Latinos. It was found that a lifetime of depression and anxiety increased the odds for an alcohol disorder

(Vaughan et al., 2014). In a different study that investigated learned helplessness and alcohol use was a study that examined treatment modalities for those with substance dependence and learned helplessness (Thorton et al., 2003). In the study by Thorton et al., (2003) explained that learned helplessness has been linked to stress, but some evidence shows that there may be a relationship that would benefit the addictions community by looking in to learned helplessness and drug-seeking behaviors (Thorton et al., 2003). This study determined that individuals with issues with alcohol use who reported higher levels of learned helplessness would benefit from high-structure, behaviorally oriented treatment, while those who had lower levels of learned helplessness benefited from low-structure, facilitative treatment (Thorton et al., 2003).

Depression

Amongst all three variables, depression and learned helplessness have been the two variables most historically researched. From its development of emotional deficits in Seligman's first research article, learned helplessness and depression were linked together (Miller & Seligman, 1975). As work from Seligman continued, depression and learned helplessness continued to be a topic of interest. In an experiment, Seligman and colleagues tested college aged students to find out if learned helplessness theory and depression in college students would lead to academic deficits (Klein, Fencil-Morse, & Seligman, 1976). The outcome of this experiment suggested that students that exhibited learned helplessness and depression showed higher signs of performance deficits as compared to the non-depressed population (Klein et al., 1976). Learned helplessness currently continues to be investigated in recent research articles as one of the indicators for depression in individuals (Kees, Nerenberg, Bachrach, & Sommer, 2015; Lester, 2012; Maier & Seligman, 2016; Miller-Day & Jackson, 2012; Watson et al., 2013). In a

different article investigating Posttraumatic Stress Disorder (PTSD) and depression in women who have been in battered, researchers investigated the role of learned helplessness had on relationships (Bargai, Ben-Shakhar, & Shalev, 2007). It was concluded that linear regression analysis showed that violence severity has a significant effect on learned helplessness with β coefficient at 0.22 and additionally learned helplessness (β=0.37) and PTSD (β=0.41) significantly affected depression (Bargai et al., 2007).

Diabetes

The health psychology factor of diabetes and psychology is a topic of interest for various researchers and it has been suggested that further studies involving diabetes should continue to be researched as they relate to learned helplessness (McLaughlin, Lefaivre, & Cummings, 2010; Shepard, Vajda, Nyer, Clarke, & Gonder-Frederick, 2014). Similar studies that investigated multiple physiological concerns and poor food choices have also been investigated as they relate to learned helplessness (Brown, Nicassio, & Wallston, 1989; Hansen, & Thomsen, 2013; Smith, Peck, & Ward, 1990). In a study by Shepard et al. (2014), the investigation of fear in hypoglycemic patients with type one diabetes was researched. In this study researchers were interested in further understanding hypoglycemic episodes and how they relate to youth, their parents, and learned helplessness (Shepard et al., 2014). The study concluded that those youth individuals who scored higher in the helplessness were shown to have more severe hypoglycemic episodes (Shepard et al., 2014).

Statement of the Problem

The scientific literature on alcohol use, depression, and various populations has indicated that these disorders and medical conditions occur individually (Baucom et al., 2015; Cook &

Cherpitel, 2012; Pineda Olvera, Stewart, Galindo, & Stephens, 2007; Tovilla-Zarate et al., 2012). Further, we know that these diagnoses occur as co-occurring disorders as well (Glaus et al., 2013; Mezuk et al., 2013; Tann et al., 2007; Vaughan et al., 2014), but what we do not know is the relationship between learned helplessness, gender, income, alcohol use, depressive symptoms, and risk factors for diabetes.

Purpose of the Study

The purpose of this study was to be able to answer the research problems and contribute to knowledge base on whether there are any relationships between levels of learned helplessness, demographic variables, alcohol use, depression, and risk factors for diabetes in various populations. Alcohol use, depression, and diabetes, are a multimorbidity that have limited research and have been previously investigated with populations such as American Indian and Alaska Native populations, but little research has been completed in Whites, Hispanics, and Blacks (Carle, 2009; Tann et al., 2007). This phenomenon of multimorbidities have yielded few studies in the scientific literature, and there are few theories that help investigate why these populations develop multiple disorders. In this study, learned helplessness was the primary theory that offered a theoretical explanation as to why individuals develop this multimorbidity and whether there any statistically significant relationships amongst these variables. In addition to this theory, a complimentary and supporting theory that was utilized was the hopelessness theory. This study will also help provide relationships between learned helplessness, ethnicity, gender, income, alcohol use, depressive symptoms, and risk factors for diabetes. Solving this research problem will provide multidisciplinary explanations of the effect of learned helplessness on their clients, especially those already diagnosed with alcohol use, depression, and diabetes.

Significance of the Study

According to Schiefer and Krahé (2014) more studies are needed when researching the effects of learned helplessness with a variety of populations. The significance of this study will contribute to various disciplines across the psychological community by filling the gap on multimorbidities. Additionally, the significance of this study would contribute to the advancement of the knowledge base in general psychology and theories on learned helplessness and hopelessness.

A study by Gotshall and Stefanou (2011) recommended that learning how to help students with disabilities who have learned helplessness would benefit the teaching community. The implications of learning more about learned helplessness would further the psychological field according to Badwar (2009). Another implication of this study and learned helplessness would be for clinicians who have patients who are struggling with learned helplessness and illness acceptance (Karademas & Hondronikola, 2010). Some of the disciplines that aim to benefit from resolving this research problem include those clinicians that work in the psychological field, primary care doctors, and educators (Badwar, 2009; Gotshall & Stefanou 2011; Krademas & Hondronikola, 2010). It has also been suggested that providing interventions and knowledge of diabetes and patient health is important for psychologists, social workers, and mental health professionals (Delamater, 2009). The importance of collaborating with other mental health professionals and presenting studies amongst the psychological community would further provide access to mental health services in our communities (Chavez-Korell et al., 2012).

These multimorbidities integrate multiple aspects of psychology that fulfill the criteria for general psychology research according to the Division 1 of the American Psychological

Association (Alexander, Baumeister, & Vohs, 2016). The Division 1 of the American Psychological Association researches aims to integrate various subdisciplines of psychology to "advance theory, evaluate and integrate research literatures, provide a new historical analysis, or discuss new methodological developments in psychology as a whole" (Alexander et al., 2016, p. 1). These criteria were met by integrating addictions psychology, clinical psychology, and health psychology to advance the application of learned helplessness and hopelessness theory and further the literature on multimorbidities.

Research Questions and Hypotheses

The following questions are the guiding research questions for this study which will include the null hypothesis and alternative hypothesis.

Research Question 1: Do any relationships exist between levels of learned helplessness, as measured by the Coping Competence Questionnaire (CCQ), and ethnicity, gender, or income?

Null hypothesis: There are no relationships between levels of learned helplessness, as measured by the CCQ, ethnicity, gender, or income.

Alternative hypothesis: There are relationships between levels of learned helplessness, as measured by the CCQ, ethnicity, gender, or income.

Research Question 2: Is there a relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the Alcohol Use Disorder Identification Test: Self-Report Version (AUDIT)?

Null hypothesis: There is no relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the AUDIT.

Alternative hypothesis: There is a relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the AUDIT.

Research Question 3: Is there a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the Patient Health Questionnaire-8 (PHQ-8)?

Null hypothesis: There is no relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the PHQ-8.

Alternative hypothesis: There is a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the PHQ-8.

Research Question 4: Is there a relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?

Null hypothesis: There is no relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Alternative hypothesis: There is a relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Research Question 5: Are there any relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?

Null hypothesis: There are no relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Alternative hypothesis: There are relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Definition of Terms

Construct

Learned helplessness theory. The construct of *learned helplessness theory,* which was first postulated by Martin Seligman, Steven F. Maier, and Bruce Overmier in 1967. In their original work, dogs were administered various electric shocks and were not given escape routes, these circumstances led the dogs to fail to learn to escape future shocks when they were given escape routes (Maier & Seligman, 1976). Learned helplessness was defined as an individual's perceived inability to change their circumstances and outcomes in their lives due to the re-experiencing of the lack of control in their lives (Teodorescu & Erev, 2014).

Variables Defined

Alcohol use. *Alcohol use* was determined by the number of alcoholic drink an individual decided to take daily, which was further assessed by the operational definition (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001).

Depression. The variable definition for *depression* is depressive symptoms. This was defined as those symptoms that were captured in the Patient Health Questionnaire-8. These symptoms of depression also match very closely those symptoms that are associated with the DSM-IV (Spitzer, Williams, & Kroenke, 2014).

Diabetes. *Diabetes* is defined by the risk factors for diabetes or prediabetes. These symptoms were scored by the Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes (Heejung et al., 2009).

Learned Helplessness. *Learned helplessness* ties in with learned helplessness theory as this is the identified action by Maier and Seligman (1976) in which individuals associate a loss of control over activities in their lives due to a constant negative outcome. This was assessed by the Coping Competence Questionnaire.

Operational

Alcohol use. The operation definition for the *alcohol use* was the scores on the Alcohol Use Disorders Identification Test: Self-Report Version (AUDIT). Scores for the AUDIT range from 0-40 (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001).

Depression. The operational definition for depressive symptoms was the score on the Patient Health Questionnaire-8 (PHQ-8). Scores on the PHQ-8 range from 0 to 24 (Spitzer, Williams, & Kroenke, 2014).

Diabetes. The operational definition for *diabetes* was the Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes. Scores for this questionnaire range from 0-18 (Heejung et al., 2009).

Learned helplessness. The operational definition for *learned helplessness* was the score on the Coping Competence Questionnaire. Scores range from 12 to 72 (Schroder, n.d).

Exclusion and Inclusion Criteria

Exclusion. The *exclusion* criteria for this sample included those individuals who had been formally diagnosed with any type of depressive disorder, substance abuse disorder, or alcohol based disorder.

Inclusion. The *inclusion* criteria for this sample included anyone 18-64 years of age who identified as Black, White, or Hispanic.

Demographic Variables

Demographic variables. The *demographic variables* that were collected in the study included gender, age, race, and income.

Research Design

The study utilized a quantitative non-experimental design. The quantitative methodology is appropriate for this study as it explores the relationship between learned helplessness, ethnicity, gender, income, alcohol use, depression, and diabetes through quantitative measures, and analyzes them through one-way ANOVA, post hoc with Tukey HSD, *t* test, and Spearman's rho. Quantitative research aims to investigate through systematic and controlled manners, which this study aimed to do by incorporating the relationships that existed between learned helplessness, ethnicity, gender, income, alcohol use, depression, and diabetes (Hagan, 2014). The ethnicity that was selected for this study included White, Black, and Hispanic populations. In this study, other ethnicities have been purposefully excluded as they were not a focal point for this study. The requirement included those 18 years of age and under 64 years. Those who had

formally been diagnosed with any mental health or substance abuse were not allowed to take the survey. The sample was calculated using G* Power 3.1.9.2 using a *t*-test correlation: Point biserial model with a priori analysis to compute for the required sample. A total of 109 participants were requested, but 130 was the goal for this study. The study utilized simple random sampling for the selection of the members. The participants were selected by SurveyMonkey audience. The data collection process was completed on part by SurveyMonkey and data was processed and analyzed using SPSS. Participants could discontinue in the survey for any reason and at any time. The participants were given multiple national hotlines in case they wanted to follow up on any mental or physiological health concerns that they may have had. Ethical consideration for this study was given to patients by providing them an informed consent, which outlined the process and information for this study. Chapter 3 provided a further comprehensive review of this study's research design.

Assumptions

The study utilized a non-experimental quantitative study. According to Lohmeier (2010) a non-experimental design described whether two or more variables are related to each other. In a study by Barnham (2015) in which the perceptual foundation of quantitative and qualitative research was investigated, it was determined that the underlying methodological assumption is to understand that research cannot be assumed and that it required further investigation to ascertain any potential conclusions. Since the assumption for quantitative research were that outcomes cannot be assumed, Barnham (2015) proposed that quantitative research aimed to form and establish connections through statistical research and to not imply or assume anything. Given this assumption, below are the various types of assumptions that were discussed in this study.

General Methodological Assumptions

The first assumption for this study was that it is assumed that the respondents of the survey were truthful. Additionally, it is assumed that the readers could read the questions in the survey, but precautions were taken in case readers had any concerns or questions by providing an email and phone number where they could call for more information. It was also assumed that no one with a formal mental health diagnosis completed the survey, as this was explicitly indicated as an exclusion for this study. Lastly, it was important that it was assumed that only those 18-64 years of age who identified as Black, White, or Hispanic participated in this study.

There are also philosophical underlying assumptions that were met in this study. The ontological assumptions underlying the research can be observed and measured. The survey data had a fixed reality in which the variables of alcohol abuse, depression, and diabetes were measureable and observable. The epistemological assumptions underlying the research showed that multimorbidities can be measured and the data was objective. Additionally, this expanded the current literature and knowledge about multimorbidities on alcohol use, depression, and diabetes. The axiological assumptions underlying this research showed that the analytical testing of the data demonstrated the value of objectivity. The methodological assumptions underlying this research included that this study had a quantitative design. More specifically, the data from the survey could be derived from a one-way ANOVA, post hoc with Tukey HSD, *t* test, and Spearman's rho added value to this study.

Assumptions About Measures

It was assumed that Coping Competence Questionnaire (CCQ) was an accurate tool that measured levels of learned helplessness in the general population. The Alcohol Use Disorders

Identification Test: Self-Report Version (AUDIT) was assumed that it was an accurate tool that assessed levels of excessive drinking amongst the general population. It was assumed that the Patient Health Quesionnaire-8 (PHQ-8) assessed appropriate levels of depressive symptoms amongst the general population. Lastly, it was assumed that the Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes screened for appropriate risk levels for diabetes in the general population. It was assumed that all questionnaires were reliable and valid tools and further reliability and validity details were provided later in the study.

Limitations

Design Limitations

There were several design limitations for this study. The first one included that the limitation of ages for those that were taking the survey. Only participants between the ages of 18-64 could complete the survey, this age criteria ensured that protected or special populations were not being abused for this study. Additionally, only those without a mental health or substance use disorders, were excluded from taking the survey. This was done to ensure that protected populations were not being harmed. In the research by Tann et al. (2007) indigenous populations where used when investigating multimorbidities, but in this study those populations were excluded as they were not the aim for this research.

Delimitations

This study did not take in to account other type of disorders that could form different type of multimorbidities. This study only looked at alcohol use, depression, and diabetes as a multimorbidity, as this multimorbidity had been previously reviewed in the academic literature

(Tann et al., 2007). Additionally, only White, Black, and Hispanic ethnicities were studied, as this was determined by the findings in the literature and due to time limitations.

Organization of the Remainder of the Study

This study is comprised of five main chapters in which a thorough and comprehensive analysis was completed. The first chapter, will include an introduction that described the background of the problem. In this description of the problem, a general synthesis of the topic of interest for this study was discussed. Furthermore, a brief explanation and a general outline of the chosen theories were discussed. The second chapter included the review of literature that made up the foundation for this study. This review is made of the scholarly and research literature through various means that were pertinent to this study. The review of the literature included methods and procedures for the research, a review of the theoretical framework, synthesis of the found literature, and lastly a critique of the research methods and procedures used in the literature review. The third chapter consisted of the methodological procedures that were utilized. The purpose of the third chapter was to provide the reader with a written outline of how the research in this study was carried out. Additionally, the chapter included the purpose of the study, research questions, hypothesis, research designs, targeted populations, samples, procedures, instruments, ethical considerations, and summary of the chapter. The fourth chapter included the results section, the background information, description of the sample, hypothesis testing, and a summary. The fifth chapter was the final chapter in the study. This chapter captured a personal interpretation of the study in terms of what was found and future research suggestions. The chapter included a summary of the results, discussion of the results, conclusion

based on the results, limitations, implications for practice, recommendations for further research, and a conclusion section.

CHAPTER 2. LITERATURE REVIEW

Introduction

The review of the literature will identify pertinent information for this study. Specifically, it will introduce the two main theoretical concepts of learned helplessness and hopelessness theory. A synthesis and integration of these theories will also be provided to show the collaborative nature of these theories. In addition to including a theoretical orientation, a review of the literature was conducted to show what has been researched as they relate to learned helplessness and depression, alcohol use, and diabetes. A review on available articles and studies on multimorbidities as well as co-occurring disorders was provided in this section of the study to provide additional information on the latter disorders.

Methods of Searching

The literature review was completed by the utilization of multiple databases and peer-reviewed journals. The databases that were used to search for the literature review included Academic Search Premier, Dissertations @ Capella, ERIC, Health and Psychosocial Instruments, PsycArticles, Psychology Database, PsychINFO, PsycTESTS, and Ebscohost. *The Journal of Division 1 of the American Psychological Association.* A number of search term combinations were used including *learned helplessness, learned helplessness and hopelessness theory, learned helplessness and diabetes and alcohol use and diabetes, learned helplessness and diabetes, learned helplessness and alcohol use, learned helplessness and diabetes, learned helplessness and diabetes and depression, learned helplessness and diabetes and alcohol use, learned helplessness and alcohol use and depression, learned helplessness and Hispanics, learned*

helplessness and White, learned helplessness and Black, and learned helplessness and correlations.

Theoretical Orientation for the Study

This study has two primary theoretical frameworks which consist of Seligman's learned helplessness theory and Abramson and Metalsky's hopelessness theory (Abramson & Metalsky, 1989; Maier & Seligman, 1976). Both theories incorporate different aspects of depression on how it develops within individuals. The contrasting views between learned helplessness and hopelessness theory provide a unique framework to conceptualize the theoretical orientation for this study by providing different viewpoints on how depression and multimorbidities develop.

In its original work, Seligman and colleagues first postulated the theory of learned helplessness in 1976 (Maier & Seligman, 1976). Seligman and colleagues first introduced the concept of learned helplessness by introducing three experiments; one on a dog, one on a human, and lastly, one on a rat (Maier & Seligman, 1976). In the first experiment a dog was introduced into a cage which had and exit in which a dog could escape from (Maier & Seligman, 1976). As the experiment began the first dog would get shocked and quickly learned that to avoid getting shocked he had to exit towards the barrier (Maier & Seligman, 1976). As the experiment progressed the dog became more efficient in avoiding the shocks and going through the barrier more quickly and after 50 trials dog appear to be less stressed with the experiment knowing that he could escape by going to the part of the cage where the barrier was (Maier & Seligman, 1976). In the same experiment a different dog was given this same electrical shock without an opportunity to escape into the barrier initially (Maier & Seligman, 1976). On the following trial the dog was administered the same shock treatment but this time it was given the opportunity to

escape to the barrier, in this case the dog chose not to escape and kept still while quietly whining (Maier & Seligman, 1976).

In the second experiment, a college student was given an anagram to solve with a specific pattern. After the student realized the pattern, the subsequent anagrams were more easily completed (Maier & Seligman, 1976). In a different trial of the same experiment a college student was given a similar task as the initial one, but the anagrams were unsolvable including all subsequent anagrams (Maier & Seligman, 1976). It was noted that the college student was given eight additional anagrams to solve but would easily give up on all the following anagrams.

In the third experiment, the same process that was used for the dogs initially was used in rats with the same outcome (Maier & Seligman, 1976). The rat with the ability to go into the barrier quickly learned that to avoid that electric shock it would have to go into the barrier, in comparison to the rat that could not go into the barrier and easily gave up in later trials even after having access to the barrier (Maier & Seligman, 1976).

It was from these three experiments presented in the article that Seligman and colleagues coined the term *learned helplessness*. A term that is attributed to uncontrollable responses to undesirable outcomes (Maier & Seligman, 1976). Seligman and colleagues could identify three deficits that occur because of an individual experiencing uncontrollable events, these include motivational, cognitive, and emotional deficits (Maier & Seligman, 1976). When presenting the evidence for motivational deficits, Seligman presented various other experiments from previous works that showed the same motivational deficits when presented with and uncontrollable negative stimuli. Multiple animal experimentations with dogs, cats, rats, fish, and humans have showed that exposure to negative stimuli that was presented in an uncontrollable manner resulted

in diminished desire and willingness to be able to do something (Maier & Seligman, 1976). Seligman also proposed that there are cognitive deficits to experiencing uncontrollable events, positing that continuous exposure to events that are uncontrollable hinder the ability to learn successfully (Maier & Seligman, 1976). Seligman used the example with the dogs being shocked to justify cognitive deficits, he explained that the dogs that were shocked and couldn't escape from time to time were able to enter the barrier, but in successive trials the dogs reverted to the submissiveness of the shocks and did not attempt to escape (Maier & Seligman, 1976). This was viewed as a deficit in the learning process for the animals in the trial, thus proving cognitive deficits of uncontrollable events on individuals. In the last deficit, when confronted with uncontrollable aversive events, emotional deficits could result (Maier & Seligman, 1976). Some of the emotional effects were shown in rats by measuring stomach ulcers and levels of stress as shown by reduction of eating habits (Maier & Seligman, 1976). In human trials, blood pressure was taken to find out if those with the uncontrollable events would show higher levels of blood pressure, and as a result those in the experiment with the uncontrollable aversive effects showed higher levels of blood pressure indicating emotional deficits (Maier & Seligman, 1976). Implications of learned helplessness have been used in a wide variety of spectrums within the field of general psychology including alcohol use, depression, and diabetes.

The second theory is the hopelessness theory first postulated by Abramson and Metalsky (1989). The foundation for hopelessness theory combines two aspects which include negative expectations over an outcome and the expectation of helplessness in the likelihood of being able to change these outcomes (Abramson & Metalsky, 1989). Hopelessness theory explains the connection between an individual's expectancy of a highly-desired outcome will likely not occur

or the opposite that a highly aversive outcome could occur combined with the expectation that there is nothing that the individual has learned that will make any difference in how these outcomes will play out (Abramson & Metalsky, 1989).

In addition to hopelessness theory, the authors also coin the phrase *generalized hopelessness* which is defined as a set of negative outcomes with helpless expectancies over various areas in an individual's life (Abramson & Metalsky, 1989, p. 359). In comparison to generalized hopelessness, circumscribed pessimism is considered a less severe cluster of depression that is based off hopelessness since it encompasses a limited period. The authors suggest a contrasting view on generalized hopelessness which was called *circumscribed pessimism* which utilizes the same definition of generalized hopelessness with the difference of a lesser severity of symptoms which is associated with only a limited expectancy (Abramson & Metalsky, 1989, p. 359). The hopelessness theory posits that there are three type of inferences individuals make that can lead to hopelessness depression which include, the inference on why the event could have occurred, the inferences over the consequences that could arise from the event, and lastly a view of themselves to be flawed after the negative outcome from the event (Abramson & Metalsky, 1989).

Learned helplessness and the hopelessness theory work together due to the development of both theories in the scholarly literature. The learned helplessness theory was the predecessor in the scholarly literature to the hopelessness theory and so this theory is an extension to the theory of learned helplessness which was first introduced by Seligman and colleagues in the late 1970's. Abramson and Metalsky proposed to create a theory that would better describe a subtype of depression called hopelessness depression which serves as a model for depression (Abramson

& Metalsky, 1989). There are several articles in the currently scholarly literature that utilize the integrate both theories in the current literature which suggest that a working of these two theories can be utilized when researching depression (Henkel, Bussfeld, Möller, & Hegerl, 2002; Watson, White, Davolls, Mohammed, Lynch, & Mohammed, 2013; Lester, 2012).

Review of the Literature

In this section, a review of the literature was conducted and broken down by variables being investigated as they relate to learned helplessness. The first reviewed variable was alcohol use, followed by depression, then diabetes, and lastly what is known in the literature about this multimorbidity set (alcohol use, depression, and diabetes).

Alcohol Use

Learned helplessness is most associated with depression in the scientific literature and few articles have examined the relationship of how learned helplessness or depression leads to disorders such as alcohol use or abuse. Furthermore, many articles investigated the link between learned helplessness or depression and alcohol use amongst gender in colleges or universities; disproportionately amounts investigated women habits (Geisner et al., 2012; Lee et al., 2012; Lonczak et al., 2007; Merrill et al., 2014; Noel & Lisman, 1980; Wechsler et al., 1995). In this section, a chronological and historical representation of the known literature for learned helplessness and alcohol use was presented.

Since the inception of learned helplessness in 1976, learned helplessness and alcohol use have yielded few research between the late 1970's through current research, but historically one of the most popular articles investigating alcohol use and learned helplessness was written by Noel and Lisman (1980). In this article, Noel and Lisman (1980) created three experiments that

would investigate alcohol use, depression, and learned helplessness. The first experiment the authors administered the Beck Depression Inventory (BDI) and the Quantity-Frequency-Variability Schedule (QFV) (Noel and Lisman, 1980). The results indicated that women who were considered to have scores in the heavy drinking rage were more likely to be moderately depressed (Noel and Lisman, 1980). The second experiment utilized alcohol consumption, levels of depression, hostility, and anxiety as the primary variables to an experiment that utilized unsolvable anagrams to induce learned helplessness (Noel & Lisman, 1980). The experiment utilized the Multiple Affect Adjective Checklist (MAACL) first created by Zuckerman and Lubin (1965) to capture changes in affect. The outcomes did not yield statistical significance as they related to learned helplessness and could not replicate the same learned helplessness results from the original experiment conducted by Hiroto and Seligman (1975). The experiment could show that the unsolvable anagrams increased hostility, alcohol consumption, and depressive symptoms (Noel & Lisman, 1980). Lastly, the third experiment was done in the same manner as the second, but with some changes in feedback, and resulted in similar results that was not unable to show a pattern between levels of alcohol consumption and learned helplessness (Noel & Lisman, 1980). This may provide some insight to the possible statistical outcomes for this study, as Noel and Lisman (1980) could not yield statistical significance between learned helplessness and alcohol use. One downside with this research is that it is outdated, but is provided here to show a historical marker of the research that has been completed between learned helplessness and alcohol use.

In this next article created by Timmer, Veroff, and Colten (1985) a national representative sample was used to statistically examine feelings of helplessness, alcohol and drug

use to cope, and life stressors. In this study Timmer et al., (1985) utilized a moderating effect proposed by Marlatt in 1979 as cognitive-behavioral model. This model hypothesized a five-point approach to explain why individuals drink or use drugs which include, the belief of stress that were derived from these situations, a believed sense of personal control, the availability of the substances, availability of coping strategies to believed stress, and lastly the individual's expectations over the effects of the substances (Marlatt, 1979). In this study those individuals who indicate a sense of loss of personal control over situations, as reported in the national representative model, illustrate the population that are linked to learned helplessness (Timmer et al., 1985). This study utilized a probability sampling with a sample that included 960 men and 1,304 women from a national representative sample used in a 1976 study by Veroff, Douvan, and Kulka (1981). The substance use assessment questionnaire asked two questions including, "When you feel worried, tense, or nervous, do you ever drink alcoholic beverages to help you handle things? When you feel worried, tense, or nervous, do you ever take medicines or drugs to help you handle things?" (Timmer et al., 1985, p. 177). The responses included "ever, 1; hardly ever, 2; sometimes, 3; many times, 4" (Timmer et al., 1985, p. 177). In this manner, the rest of the assessments covered specific stresses, personal and social resources (Timmer et al., 1985). The statistical analysis investigated specifically the moderating effects of "personal resources-internal psychological, external, and coping resources-on the relationship between major life stresses and the use of alcohol and drugs to cope" (Timmer et al., 1985, p. 181). The statistical approach that was utilized was ordinary least squares regression which resulted in a strong relationship between poor physiological health and the use of drugs as a coping mechanism in both genders, individuals who pray do not drink to cope, men who have less social networks and

low self-confidence were associated with substance use as a coping strategy to stress (Timmer et al., 1985). The effects for women suggested different outcomes such as those women who are employed tend to drink more to relieve tension and use drinking as coping mechanism as well (Timmer et al., 1985). Lastly the regression model showed that persons who feel vulnerable are likelier to drink and use drugs, thus indicating that a strong relationship between those feelings of vulnerability or feeling of helplessness and substance use (Timmer et al., 1985).

A unique family systems approach to learned helplessness and alcohol use. It specifically hypothesizes that adult children of alcoholics have been subject to psychological trauma with learned helplessness and that helplessness can be treated with stress management interventions (Flannery,1986). This study utilized data from a pilot study that investigated 42 patients that were seen in 8 groups for outpatient counseling (Flannery,1986). It was identified that 25 out of the 36 patients were adult children who had parents with alcoholism and so the diagnosis for parental alcoholism was self-reported (Flannery,1986). The patients were assessed by a therapist and were also administered a seven-point adjustment rating scale using a Likert scale from 1 (poor adjustment) to 7 (excellent adjustment) (Flannery,1986). Additional testing was conducted by the incorporation of Biodots and family self-reports (Flannery,1986). Biodots pertained to a type of equipment formed by liquid crystalline biofeedback discs which measured a change in skin temperatures (Flannery,1986). Qualitative feedback from patients showed increase in sleep, decreased blood pressure, decreased family arguments, less anxiety, and less distress (Flannery,1986). Multiple methodological flaws were reported, which likely contributed to the lack of statistical significance in the post treatment outcomes (Flannery,1986). It was documented that study was on a voluntary basis and that participant expectation may have

influenced the outcomes (Flannery,1986). Lastly, it is recommended for future research to utilize different scales that can assists in the gathering of statistical data. It is likely that at the current time of research event specific tools that combine alcohol use and learned helplessness are not currently available in the literature which may have contributed to the non-statistical significant outcomes (Flannery,1986).

In the following article, a new model of alcohol abuse was developed based on the definitive properties of learned helplessness is reviewed. It attempts to explain a connection between the bio-behaviors from learned helplessness in response to an organism's environmental stimuli from events that cause alcohol drinking (Volpicelli, 1987). This new model was made up of behavioral observations and biochemical data that explained that alcohol could stimulate pharmacologically endorphin activity in the brain or otherwise called "Endorphin Compensation Hypothesis" (Volpicelli, 1987, pp. 381-382). The article suggested that "compensatory opponent-process effects" or the explanation of being able to see differently was occurring (Volpicelli, 1987, p. 383). The opponent-process effect was also applied to alcohol use and is explained by using aversive mental events as way to be presented differently than what was being observed at the moment, and wait to observe a response one the event that has passed to capture the reality of the event (Volpicelli, 1987). Subsequently, the compensatory opponent-process suggested that learned helplessness events can allow for an increased likelihood for alcohol abuse (Volpicelli, 1987). Using this model, an explanation to the various experiments that could not yield similar replicative results to learned helplessness could be explained, offering some insight to other experiments that may be done in the future. One different view over learned helplessness are the views presented in the article by Dodes (1990). As the literature

continues to develop though the years a more thorough clinical view is presented when looking at learned helplessness and addictions such as alcohol use. In this article, Dodes (1990) suggested that addictive behaviors, such as those of alcoholics, use helplessness in a different way and are open to warding off helplessness to establish internal power by controlling their affective state.

In this section, a review of available scales as they relate to learned helplessness and alcohol use are addressed. Additionally, it was noted that research regarding these types of scales only span through 2001 and the literature has not developed newer scales. There are few scales in the literature that investigate levels of learned helplessness, but currently the literature supports learned helplessness scales in to primary categories that include general helplessness scales and event specific scales. The general helplessness scales are scales that generalize and are broad in terms of what is being investigates, these scales do not offer specific variables in which helplessness is being investigated through. The first general scale included the Attributional Style Questionnaire created by Peterson et al., (1982) which investigated causal explanations for bad or good outcomes in an individual's life. The next scale was the 20-item Hopelessness Scale which was created by Beck, Weissman, Lester, and Trexler in 1974 and was showed to have comparable levels of learned helplessness when investigated in women who were addicted to heroin and alcohol. Lastly, the Learned Helplessness Scale was created by Quinless and Nelson in 1988 and was intended to be a short scaled that was used for screening purposes to predict levels of retention in a cocaine dependent study. The problem with utilizing generalized scales is that they do not specifically have the statistical powers that indicate strength when utilizing for other purposed other than those already investigated (Sitharthan, 2001).

The literature only showed two event specific helplessness scales, the first was called the 15-item Arthritis Helplessness Index which was created by Nicassio et al., in 1985 and it was used to investigate overwhelmed feelings for those patients with rheumatoid arthritis. The next event specific scale was created in 2001 by Sitharthan, Hough, Sitharthan, and Kavanagh which investigated alcohol use and learned helplessness. The scale that was created by Sitharthan et al., (2001) was called the Alcohol Helplessness Scale and it was created due to the lack of "event-specific" scales associated with learned helplessness and alcohol (p. 1445). It was argued in this study that unlike their counterpart of generalized scales, event-specific scales provided the scientific literature with scales that could generate greater predictions powers for specific behaviors, in this case alcohol and learned helplessness depression (Salsman, Schalet, Andrykowski, & Cella, 2015; Sithartan et al., 2001). This scale was created by utilizing six questions that related to alcohol use and learned helplessness depression that could be answered using a Likert scale from 0 (strongly disagree) to 3 (strongly agree) (Sitharthan et al., 2001). Psychometric analysis was conducted on this scale to test its reliability, mediation, and moderation. The reliability outcomes concluded a moderately reliable scale with a Cronbach α=0.69 (Sitharthan et al., 2001). In terms of a mediation model, or an internal event that can explain a predictor variable such as alcoholism, it was shown that learned helplessness and self-efficacy are able to account for alcoholism and depression (Sitharthan et al., 2001). Lastly, a moderation model, or an interactive relationship between the predictor variable and criterion variable; in this case alcoholism and depression, was not able to statistically show a relationship between the alcoholism and depression.

The last study that was found in the scholarly literature that investigated learned helplessness and alcohol use was a study that examined treatment modalities for those with substance dependence and learned helplessness (Thorton et al., 2003). In the study by Thorton et al., (2003) they explain that learned helplessness has been linked to stress, but some evidence shows that there may be a relationship that would benefit the addictions community by looking in to learned helplessness and drug-seeking behaviors (Thorton et al., 2003). This study utilized two different therapeutic modalities in their approach in working with populations with addictions, such as alcohol use (Thorton et al., 2003). The first therapeutic modality was referred to as high-structure, behaviorally oriented treatment or HSB and low-structure, facilitative treatment or LSF (Thorton et al., 2003). The study hypothesized that those who screened with high levels of learned helplessness would benefit from HSB treatment, while those with low levels of learned helplessness would benefit from LSF treatment (Thorton et al., 2003). The study utilized 120 participants in a 12-week outpatient substance abuse treatment program who met the DSM-IV criteria for substance dependence (Thorton et al., 2003). The psychometric tools that were used to assess for levels of learned helplessness was the Learned Helplessness Survey, for levels of depression they utilized the Beck Depression Inventory, for addictions they utilized the Addiction Severity Index, and lastly the Treatment Readiness Questionnaire was utilized to assess levels of readiness (Thorton et al., 2003). The outcomes of this study supported the hypothesized prediction stated above. Those participants who had higher levels of learned helplessness benefited from the HSB treatment modality which incorporated a behaviorally oriented treatment in which a structured environment was provided for affective treatment (Thorton et al., 2003). Those participants that were showed to have lower levels of learned

helplessness were approached with an LSF treatment modality, which utilized a client-centered approach and showed to have a benefit from a less-structured modality (Thorton et al., 2003). The authors utilized this research to show that HSB and LSF treatment modalities can be used as a guidance when working with addiction treatments that have been screened for learned helplessness (Thorton et al., 2003).

Depression

Amongst all three variables, depression and learned helplessness have been the two variables most historically researched (Kees et al., 2015; Maier & Seligman, 2016; Miller-Day & Jackson, 2012; Watson et al., 2013). From its development of emotional deficits in Seligman's first research article, learned helplessness and depression were linked together (Miller & Seligman, 1975). As work from Seligman continued, depression and learned helplessness continued to be a topic of interest to the scientific community. In an experiment, Seligman and colleagues tested college aged students to find out if learned helplessness theory and depression in college students would lead to academic deficits (Klein et al., 1976). The outcome of this experiment suggested that students that exhibited learned helplessness and depression showed higher signs of performance deficits as compared to the non-depressed population (Klein et al., 1976). In a different experiment by Seligman and colleagues a clinical approach to learned helplessness was considered. This experiment tested the theory of learned helplessness and depression amongst patients by administering mood alleviating procedures (Raps, Reinhard, & Seligman, 1980). The experiment validated learned helplessness theory and depression by administering successful treatment procedures (Raps et al., 1980). Furthermore, these treatments worked to alleviate levels of depression in patients reporting learned helplessness further showed

the link between depression and learned helplessness (Raps et al., 1980). In a different study after the initial research of learned helplessness, an experimental study was developed to investigate if artificial or laboratory induced learned helplessness would generalize to additional test tasks (Tuffin, Hesketh, & Podd, 1985). The study referenced the original study by Seligman in 1976 in which learned helplessness was researched through shocks and inescapable noises with the inability to escape with dogs. In this experiment, there were two phases in which training was completed to show the effectiveness of learned helplessness (Tuffin et al., 1985). The designs for the training phases included a two-factor mixed design with repeated measures on the second factor, while the second phase 3 by 2 by 2 factorial design (Tuffin et al., 1985). The first grouping was categorized by affects which included anxiety, depression, and hostility (Tuffin et al., 1985). The second grouping was categorized by contingent reinforcement, non-contingent reinforcement, and control (Tuffin et al., 1985). The test subjects included 60 female and 30 male students who were in an introductory psychology class in a university (Tuffin et al., 1985). The outcome of this study suggested that helplessness failed to generalize to other test tasks in which subjects where expected to show performance deficits, and so it is important that artificially induced helplessness may not results in real live helplessness (Tuffin et al., 1985). Additionally, outcomes suggested that there were no differences between non-contingent subjects, contingent, and control groups (Tuffin et al., 1985). Results on the Multiple Affect Adjective List Today Form (MACCL) could successfully show increase in anxiety, hostility, and depression which confirmed helplessness induction (Tuffin et al., 1985).

Learned helplessness currently continues to be investigated in recent research articles as one of the indicators for depression in individuals (Kees et al., 2015; Lester, 2012; Maier &

Seligman, 2016; Miller-Day & Jackson, 2012; Watson et al., 2013). In an article investigating Posttraumatic Stress Disorder (PTSD) and depression in women who have been in battered, researchers investigated the role of learned helplessness had on relationships (Bargai et al., 2007). Researchers recruited 102 participants over an 18-month period who lived in shelters (Bargai et al., 2007). This entire population reported some type of abuse in their relationship, while 90% of these participants reported being sexually and physically abused by their spouse (Bargai et al., 2007). The axis one diagnoses were evaluated through the means of the Structured Clinical Interview provided by the DSM-IV at the time, while PTSD was evaluated using the Modified PTSD Scale Self-Report (Bargai et al., 2007). The depression instrument that was used was the Beck Depression Inventory while learned helplessness was evaluated by using the Learned Helplessness Questionnaire (Bargai et al., 2007). The trauma and violence history was evaluated using the Trauma History Questionnaire which evaluated threats, sexual, and physical abuse from spouses (Bargai et al., 2007). The statistical analyses that took place involved, *t*-tests with continuous measures, bivariate Pearson's correlation, multiple linear regressions, and hierarchical logistic regressions (Bargai et al., 2007). The linear regression analysis showed that violence severity has a significant effect on learned helplessness with β coefficient at 0.22 and additionally learned helplessness ($\beta = 0.37$) and PTSD ($\beta = 0.41$) significantly affected depression (Bargai et al., 2007). This study clearly showed the relationship amongst learned helplessness and depression when being investigated in populations with PTSD. These results are also comparable to such studies that have investigated risk factors as leading variables to depression and learned helplessness (Leung, LaChapelle, Scinta, & Olvera, 2014; Rojas, Hallford, Brand, & Tivis, 2012).

Risk factors associated with depression are social, economic challenges, and alcohol use (Leung et al., 2014; Rojas et al., 2012). Another study by Revollo, Qureshi, Collazos, Valero, and Casas (2011) studied the risk factors for depression and anxiety in the Latin American immigrant group. The outcome of this study suggested that acculturation stress was associated with anxiety and depression and so Hispanics who are immigrants are more likely to suffer from depressive pathology (Revollo et al., 2011). Other studies have suggested that 13% of the Black population were shown to have issues with depression that was exacerbated by racism, discrimination, poverty, violence, and chronic health issues like diabetes (Gibbs et al., 2013).

Some research have also looked at learned helplessness and depression and possible religious connections. The research completed by Rotenberg (2012) looked into the resiliency of individuals were identified as Jewish and proposed that traditional religious education stimulate parts of the brain to prevent learned helplessness and depression. This research showed that religion does not play a significant role to stop the effects of learned helplessness which can lead to depression (Rotenberg, 2012). This research concluded that there are no marked differences between how helplessness and depression is distributed through non-Jews and those who identify as being Jewish (Rotenberg, 2012). Other research has been able to find ways to reduce the implications of learned helplessness on populations by providing *defusion instruction*, a therapeutic technique deriving from cognitive defusion that involves educating clients on distancing themselves from their cognitions (Hooper & McHugh, 2013, p. 214).

In clinical study that investigated the effectiveness of a therapeutic treatment via telephone for cancer patients that exhibit issues related to helplessness, depression, and anxiety was investigated (Watson et al., 2013). This study postulated that cognitive behavioral therapy

(CBT) based tele-therapy will effectively reduce symptoms of helplessness, anxiety, and depression (Watson et al., 2013). The study used a specific telephonic therapy called "Problem-Focused Interactive Telephone Therapy (ProFITT©)" which utilized an individualized CBT based therapeutic modality that was modified for use for mental health professionals that specialize in "psycho-oncology" (Watson et al., 2013, pp. 1485-1486). This study utilized a non-randomized prospective within group methodological design (Watson et al., 2013). The scales that were utilized included the Mental Adjustment to Cancer Helplessness/Hopelessness (MAC H/H) and the Hospital Anxiety and Depression Scale (HADS) and were used as pre-and post-assessments to assess levels of psychological need and helplessness, anxiety, and depression (Watson et al., 2013). The statistical analysis for this study included Wilcoxon's Signed Ranks, a one-tailed test, and Spearman's correlation coefficient (Watson et al., 2013). Statistical indications for this study suggested that those who received ProFITT© showed a significant reduction in symptomology in post HADS (p=0.003 for depression and p=0.002 for anxiety) and MAC H/H scales (p=0.036) (Watson et al., 2013). This study showed that those patients who have cancer are susceptible to learned helplessness, depression, and anxiety and that ProFITT© is a statistically useful therapy to use for patient in this category (Watson et al., 2013).

Diabetes

The health psychology factor of diabetes and psychology is a topic of interest for various researchers and it has been suggested that further studies involving diabetes should continue to be researched as they relate to learned helplessness (McLaughlin et al., 2010; Shepard et al., 2014). Similar studies that investigated multiple physiological concerns and poor food choices

have also been investigated as they relate to learned helplessness (Brown et al., 1989; Hansen, & Thomsen, 2013; Smith et al., 1990).

In the initial stages of research for diabetes in helplessness models, Grossman, Brink, and Hauser (1987) investigated levels of self-efficacy in adolescent population with diabetes. In this study 68 children who were diagnosed with diabetes were investigated to find out if variations in competence or efficacy effect metabolic control and if there were gender differences in diabetic self-efficacy (Grossman et al., 1987). The assessments for this study was a self-created and named the Self-Efficacy for Diabetes (SED) and was created to investigate adolescents' perceptions of diabetic self-care (Grossman et al., 1987). The outcome of this study suggested that the SED was effectively able to capture the relationship between diabetic perceptions of control and self-efficacy. The study also suggests that adolescents often feel overwhelmed and helpless when coming to their diabetic management often resulting in depression (Grossman et al., 1987). In a different research study investigating diabetes and learned helplessness, Dunn (1987) posited that those with self-monitoring of blood glucose (SMBG) may develop learned helplessness. This study investigated a case study in which an individual with SMBG developed learned helplessness after having trouble maintaining their blood glucose (Dunn, 1978). This study served as good example on how those individuals with medical conditions, in this case diabetes, with difficult management aspects to their physiological conditions can develop learned helplessness; therefore, opening this up to further investigation.

Diabetic research and learned helplessness emphasized research in youth and young adults with type one diabetes. In one of two current experimental studies that was found in the scholarly literature, McLaughlin, Lefaivre, and Cummings (2010) attempted to induce learned

helplessness in adolescents with diabetes by utilizing solvable and unsolvable anagrams for the participants to utilize. This study was comprised of 48 participants that were administered pre- and post-performance rating scales and attribution scales (McLaughlin et al., 2010). Additionally, they completed the solvable or unsolvable formation task and lastly completed the solvable or unsolvable anagram (McLaughlin et al., 2010). The results in this study suggested that those participants with diabetes were not more likely to have learned helplessness than those in the controlled group (McLaughlin et al., 2010). The researchers comment that this outcome was not in line with their original hypothesis, in which they believed that those with diabetes would likely be more susceptible to learned helplessness (McLaughlin et al., 2010). The researchers suggest that increase in powers by increasing sample size may yield different results within the sample (McLaughlin et al., 2010). As this study is one of two studies that conducted induced learned helplessness in diabetic participants, both studies utilized youth and as of now no current experimental studies have been attempted with adults, which makes the topic of learned helplessness and diabetes a significant study that requires further investigation (Kuttner, Delamater, & Santiago, 1990; McLaughlin et al., 2010).

In a different study by Shepard et al., (2014), the investigation in hypoglycemic patients with type one diabetes was researched. In this study researchers were interested in further understanding hypoglycemic episodes and how they relate to youth, their parents, and learned helplessness (Shepard et al., 2014). This study compiled data from five past studies with a total of 259 individuals with diabetes and 250 parents (Shepard et al., 2014). The participants included male and female youth and their parents, whom at the time of participation were administered the Parent Hypoglycemia Fear Survey (PHFS) or the Children Hypoglycemia Fear Survey(CHFS)

(Shepard et al., 2014). These surveys included a 25 item self-report that measures the fear of hypoglycemia (FoH) with a five-point Likert scale, the 10-item Trait Anxiety, Worry, and Depression Subscale (Shepard et al., 2014). The study utilized exploratory factor analysis to investigate structural dimensions of the surveys and to uncover relationship between variables (Shepard et al., 2014). The outcome of this study suggested that there was concurrent validity in the use of CFHS and PHFS Worry subscale factors which correlated traits that were related to anxiety (Shepard et al., 2014). Additionally, those youth individuals who scored higher in the helplessness factor were shown to have more severe hypoglycemic episodes (Shepard et al., 2014). This reiterates what other researchers have indicated about helplessness in those with diabetes can cause life dissatisfaction and various psychological conditions, but further research is needed to ascertain these implications (Shepard et al., 2014; Borges, Neto, Falcão, Silva, & Freitas, 2016).

Additional research suggests that looking in to risk factors can play an important role when investigating diabetes and learned helplessness (Tann et al., 2007). The literature showed that risk factors for diabetic Hispanics include no prior education in school, lack of diabetic education, limited access to primary care, depression, stress, weight, reduced physical activity, and smoking (Coffman, Norton, & Beene, 2012; Valencia, Oropesa-Gonzalez, Hogue, & Florez, 2014). Another study by Tovilla-Zárate et al., (2012) investigated multimorbidities in clients with type two diabetes, depression, and anxiety were associated with having a worsening quality of life. Some risk factors for the Black populations, showed lower self-care and depression as influencing factors for those who developed diabetes (Rovner, Haller, Casten, Murchison, & Hark, 2014). The study researching coping and stress reducing strategies in mothers who have

children with diabetes showed that resourcefulness was an important intervention to combat levels of learned helplessness (Erogu, Akbaba, Adiguzel, & Peker, 2014). In a different study, psychological recommendations for the care of children and adolescents with type I diabetes were established by Delamater, Wit, McDarby, Malik, and Acerini (2014). In this research Delamater et al. (2014) stated that youth who have been shown to have poor metabolic control are also correlated with levels of learned helplessness and often engage in maladaptive behaviors as a response to the stress of having to deal with a complicated chronic health condition. Some coping mechanisms that were derived from the study as recommendations suggest that "family-based, behavioral procedures such as goal-setting, self-monitoring, positive reinforcement, behavioral contracts, supportive parental communications, and appropriately shared responsibility for diabetes management" could offer improved glycemic control and overall diabetic care (Delamater et al., 2014, p. 236). Additionally, Edward and Ousey (2015) suggested that those whom have chronic condition such as, cardiac issues, with populations that have diabetes have been shown to have improvements when they believe that they can have control over their own lives. In contrast to the findings of Edward and Ousey (2015), being educated may not be enough to combat levels of learned helplessness with populations that have chronic health conditions such as diabetes (Hansen & Thomsen, 2013).

The Multimorbidity of Alcohol Use, Depression, and Diabetes

Research articles that investigate learned helplessness, alcohol use, depression, and diabetes are limited in the scholarly literature and as a result this is a discernable gap. One common theme that was presented in many of the articles identified in the literature are the feelings of helplessness and depression that the diabetic patients feel, as if they have no control

over their diabetic condition (Beverly et al., 2013; Cumba-Avilés, 2017; Duangdao, & Roesch, 2008; Pearce, Pereira, & Davis, 2013; Schabert, Browne, Mosely, & Speight, 2013; Tann et al., 2007; Zhao, Chen, Lin, & Sigal, 2006). Originally, the research on alcohol use, depression, and diabetes was created by Tann et al., (2007) whom were investigating the "triADD" in American Indian and Alaska Native population (p. 1). More specifically, this research aimed to investigate risk factors associated with this triADD using the Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BFRSS), which surveyed overs 400,000 people in the United States including territories and the District of Columbia each year (Tann et al., 2007). This study utilized a multivariate logistic regression analysis to study the large populated data that was found using the BRFSS (Tann et al., 2007). Due to large amounts of data and the way the data was analyzed, these outcomes suggested multiple results. Largely, the study showed that statistically the American Indian and Alaska Native populations were more at risk for the multimorbidity or triADD of alcohol use, depression, and diabetes (Tann et al., 2007). Lastly, this study also suggested that further epidemiological studies should continue to look at multimorbidities such as the one this study is examining (Tann et al., 2007). The current literature that investigated diabetes can also find traces of depression and alcohol use in those patients who may feel helpless in their disease management process (Beverly et al., 2013; Cumba-Avilés, 2017; Duangdao, & Roesch, 2008; Pearce et al., 2013; Schabert et al., 2013).

Critique of the Previous Research

In analyzing the scholarly literature, some inferences about what is known and what is unknown were determined. It was known that the theory of learned helplessness was developed originally by Seligman and colleagues after experimenting with dogs and electrical shocks

(Silvet, 2013). This theory proposes that uncontrollable aversive events lead individuals to learn maladaptive behaviors, which could explain the resulting co-occurring disorders in individuals (Maier & Seligman, 1976). Some of the initial research on learned helplessness showed that increasing exposure to uncontrollable traumatic events could lead to dramatic deficits in the areas of behavioral coping, associative learning, and emotional expression (Overmier, 2002). It was also known that alcohol consumption is a common habit amongst Americans and traumatic experiences in individual's lives can trigger maladaptive behaviors which can lead to depression and the alcohol abuse (Volpicelli et al., 1999). Additionally, it is known that there is a connection between learned helplessness and those who experienced PTSD symptoms and coped by abusing alcohol (Volpicelli, 1999). Some of the literature produced by Tann et al., (2007) presented a triad study in which all three topics of alcohol use, depression, and diabetes were researched in the American Indian and Alaska native populations utilizing a theoretical foundation of learned helplessness.

Depression is the variable with the most scholarly research, including past and current research. Depression was one of the founding outcomes of learned helplessness theory from the original research study of Seligman and colleagues (Klein et al., 1976). Learned helplessness theory has also been researched in conjunction with depression, anxiety, and levels of stress (Dygdon & Dienes, 2013). Similar to alcohol use, diabetes has limited research as it related to learned helplessness. Some of the literature does show clients with type two diabetes, depression, and anxiety were associated with having a worsening quality of life (Toviall-Zárate et al., 2012). Research has indicated that youth who have been shown to have poor metabolic control are also correlated with levels of learned helplessness and often engage in maladaptive behaviors as a

response to the stress of having to deal with a complicated chronic health condition (Delamater et al., 2014).

The literature is not able to indicate a rationale as to why learned helplessness and alcohol use has failed to produce more recent research. More specifically, alcohol use and learned helplessness was not a topic that has produced recent research and so this study would provide information that would deliver more recent literature as well as furthering the use of learned helplessness theory.

This study is a quantitative study which involved the investigation of alcohol use, depression, and diabetes, and learned helplessness. This phenomenon of multimorbidities has yielded few studies in the scientific literature, and there are few theories that help investigate why these populations develop multiple disorders. In this study, learned helplessness is a theory that aims to offer an explanation as to why individuals develop these multimorbidities. This study will also help provide relationships between learned helplessness, the latter co-occurring disorders individually as postulated in the hypotheses.

Summary

This literature review has reviewed the two main theories supporting this study which include of Seligman's learned helplessness theory and Abramson and Metalsky's hopelessness theory. Additionally, the variables discussed in the initial multimorbidity were researched as they related to learned helplessness, these included alcohol use, depression, and diabetes. The last variable that was researched was the multimorbidity itself which included all three of the latter diagnosis together as they related to learned helplessness.

The theory of learned helplessness posits that individuals believe that there is no connection between what is happening to them and what would result of these behaviors; and so they believe there is no point in taking any action (Maier & Seligman, 1976). The theory of learned helplessness would provide an explanation based on predictive models as to why individuals result in having multiple diagnoses such as depression, alcohol use, and diabetes. This study will contribute to this theory by testing if learned helplessness has associations with alcohol use, depression and diabetes. The second theory is the hopelessness theory, which is an extension of learned helplessness which was first introduced by Seligman and colleagues in the late 1970's (Abramson & Metalsky, 1989). Abramson and Metalsky (1989) created a theory that would better describe a subtype of depression called hopelessness depression which serves as a model for depression. The foundation for hopelessness theory combines two aspects which include negative expectations over an outcome and the expectation of helplessness in the likelihood of being able to change these outcomes (Abramson & Metalsky, 1989).

The variable of alcohol use as related to learned helplessness is the least researched in the past and current literature. This offers the best opportunity to provide insight in to a topic that has alluded the research community. The studies on learned helplessness and alcohol use suggested that limited research has been conducted recent years when viewed from a chronological perspective and this study will allow for more current research in this area.

The depression variable yielded the most research in the scientific literature providing ongoing studies as time progressed from the initial investigation from Seligman and colleagues in the 1970's. Depression has continued to be an outcome from learned helplessness and

literature continues to support this in the scientific literature (Kees et al., 2015; Lester, 2012; Maier & Seligman, 2016; Miller-Day & Jackson, 2012; Watson et al., 2013).

Diabetes is a medical condition that many individuals around the world have been diagnosed with and there is limited information on current effects of learned helplessness and diabetes. Most current research suggests that further investigation would be helpful when researching diabetes and learned helplessness in the future (McLaughlin et al., 2010; Shepard et al., 2014).

The multimorbidity variable (alcohol use, depression, and diabetes) was the least researched in the scientific literature as initially predicted because of its unique properties. One study was found in the scientific literature that researched this multimorbidity by Tann et al. (2007), who investigated the multimorbidity or "triADD" in American Indian and Alaska Native population (p. 1). The research on multimorbidities or triADDs suggested that there is not enough investigation on these variables together and that future researchers should investigate this topic (Tann et al., 2007).

In Chapter 3, the methodology of this study was reviewed. The methodology in Chapter 3 will review the purpose of the study, research questions, hypotheses, research design, target populations, samples, description of the power analysis, methodological procedures, participant selection, data collection, ethical considerations, and data analysis.

CHAPTER 3. METHODOLOGY

Purpose of the Study

The purpose of this study was to be able to answer the research questions and contribute to knowledge base on whether levels of learned helplessness can predict alcohol use, depression, and diabetes. These multimorbidities have yielded some studies in the scientific literature, and there are few theories that help investigate why these populations develop multiple disorders. In this study, learned helplessness is the primary theory that aims to offer a theoretical explanation as to why individuals develop multimorbidities and whether there are statistical predictions amongst these variables. In addition to this theory, a complimentary and supporting theory that was utilized is the hopelessness theory. This study will also help provide relationships between learned helplessness, the latter multimorbidities, and demographic identifiers such as ethnicity, gender, and income. Solving this research problem will provide multi-disciplinary explanations of the effect of learned helplessness on their clients, especially those already diagnosed with alcohol use, depression, or diabetes, which is a guiding principle of the Division 1 of the American Psychological Association for General Psychology (Alexander, Baumeister, & Vohs, 2016).

Research Questions and Hypotheses

The following are the guiding research questions for this study which include the null hypotheses and alternative hypotheses.

Research Question 1: Do any relationships exist between levels of learned helplessness, as measured by the Coping Competence Questionnaire (CCQ), and ethnicity, gender, or income?

Null hypothesis: There are no relationships between levels of learned helplessness, as measured by the CCQ, ethnicity, gender, or income.

Alternative hypothesis: There are relationships between levels of learned helplessness, as measured by the CCQ, ethnicity, gender, or income.

Research Question 2: Is there a relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the Alcohol Use Disorder Identification Test: Self-Report Version (AUDIT)?

Null hypothesis: There is no relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the AUDIT.

Alternative hypothesis: There is a relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the AUDIT.

Research Question 3: Is there a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the Patient Health Questionnaire-8 (PHQ-8)?

Null hypothesis: There is no relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the PHQ-8.

Alternative hypothesis: There is a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the PHQ-8.

Research Question 4: Is there a relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?

Null hypothesis: There is no relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Alternative hypothesis: There is a relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Research Question 5: Are there any relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?

Null hypothesis: There are no relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Alternative hypothesis: There are relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Research Design

This study utilized a quantitative non-experimental design. The quantitative methodology is appropriate for this study as it explores the relationship between learned helplessness, ethnicity, gender, income, alcohol use, depression, and diabetes through quantitative measures, and analyzes them through one-way ANOVA, post hoc with Tukey HSD, *t* test, and Spearman's rho. Quantitative research aims to investigate through systematic and controlled manners, which this study aimed to do by incorporating the relationships that existed between learned

helplessness, ethnicity, gender, income, alcohol use, depression, and diabetes (Hagan, 2014). The ethnicity that was selected for this study included White, Black, and Hispanic populations. The requirement included those 18 years of age and under 64 years. Those who had formally been diagnosed with any mental health or substance abuse were not allowed to take the survey. The sample was calculated using G* Power 3.1.9.2 using a *t*-test correlation: Point biserial model with a priori analysis to compute for the required sample. A total of 109 participants were requested, but 130 was the goal for this study. The study utilized simple random sampling for the selection of the members. The participants were selected by SurveyMonkey audience. The data collection process was completed on part by SurveyMonkey and data was processed and analyzed using SPSS. Participants could discontinue in the survey for any reason and at any time. The participants were given multiple national hotlines in case they wanted to follow up on any mental or physiological health concerns that they may have had. Ethical consideration for this study was given to patients by providing them an informed consent, which outlined the process and information for this study. A further comprehensive review of this study's research design was reviewed below.

Target Population and Sample

Population

As part of the study, there were some eligibility criteria based on demographic information. Ethnicity and age were the eligibility criteria. The ethnicities that were selected were the White, Black, and Hispanic populations. The age requirement were those participants aged 18 to 64 years. Ages that fell below 18 or higher than 65 fall under vulnerable populations and were beyond the scope of this study. Both male and female participants could participate in

this study. The last demographic identified was income by braking income in to salary ranges which included; $0 - $25,000, $25,000-$40,000, $40,000 - $75,000, $75,000-$100,000, $100,000 or more.

Sample

The inclusion criteria for this sample included anyone 18-64 years of age who identified as Black, White, or Hispanic. The exclusion criteria for this sample included those individuals who have been formally diagnosed with any type of depressive disorder, substance abuse disorder, or alcohol based disorder.

Power Analysis

The power of the sample was calculated using G* Power 3.1.9.2 using a *t*-test correlation: Point biserial model with a priori analysis to compute for the required sample. This is shown in Figure 1 and Figure 2. The selection of two tails with a medium effect size (p =.30) and a significant criterion alpha (α) of .05. with a power of .90, determined a sample size of 109 participants. The total sample size, after the exclusion of uncompleted surveys, was 130. The output critical *t* value was 1.98 and the degree of freedom was 107.

Figure 1. Power Analysis

t tests - Correlation: Point biserial model

Analysis:	A priori: Compute required sample size		
Input:	Tail(s)	=	Two
	Effect size |ρ|	=	0.3
	α err prob	=	0.05
	Power (1-β err prob)	=	0.9
Output:	Noncentrality parameter δ	=	3.2833245
	Critical t	=	1.9823834
	Df	=	107
	Total sample size	=	109
	Actual power	=	0.9021244

Figure 1. Power analysis. Analysis shows a sample size of 109.

Figure 2. Critical *t*

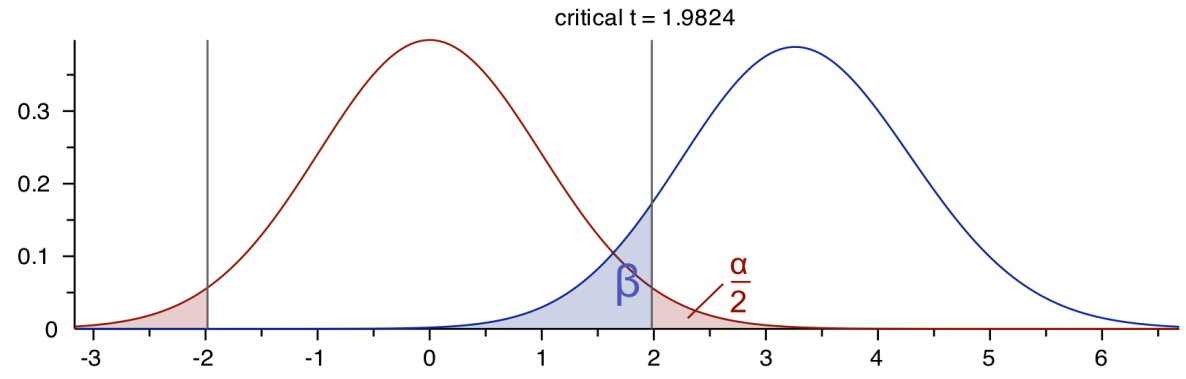

Figure 2. Plot of central and non-central distributions for critical: $t = 1.9824$.

Procedures

Participant Selection

The sampling strategy utilized a simple random sampling, or the ability for participants to have equal chances of being selected throughout the population (Cozby & Bates, 2011). Participants were screened through www.surveymonkey.com. SurveyMonkey allowed the

researcher to enter participation criteria which included those aged 18-64, male or female, and White, Black, or Hispanic. The exclusion criteria for this sample included those individuals who have been formally diagnosed with any type of depressive disorder, substance abuse disorder, or alcohol based disorder. Participants who did not meet these criteria would be disqualified from taking part in the study. Participants who wished to contact the researcher were provided with an email for their convenience where they could send correspondence.

Protection of Participants

The protection of participants in this study was thoroughly investigated and multiple safeguards were put in place for their protection. As participants were reached out to by the SurveyMonkey, they were given a description of the study which informed them of the study's purpose. Those participants that elected to continue after being reached out by SurveyMonkey proceeded to the informed consent section of the study. This section of the survey provided the participants with the disclosure information and that participation in this survey should be completed on a voluntary basis and that they could withdraw from the study at any point in time without any repercussions. The participants were explained that all information was kept private and confidential. This was further enforced as this study did not require for participants to document their personal information such as name, address, or telephone numbers. Participants were given an email address that they could reach out to if they have any questions about the study. Attention was also given to the security of the data that was collected and kept in a password and encrypted USB and protected for 7 years after the study was published and then destroyed. If the participants agreed to the above criteria they could continue to complete the survey.

Participants who completed or chose to drop out of the survey responded to questionnaires about their alcohol use, depression symptoms, and diabetic symptoms. As such, some added awareness may have been placed during this survey. Due to this added awareness, a safeguard was created to provide additional precautionary information if they chose to require follow up services. The specific national hotlines were given for each of these topics. The national hotline phone number for mental health and substance abuse was provided, as attained by the Substance Abuse and Mental Health Services Administration (SAMHSA). The diabetic national hotline that was provided was attained by the American Diabetes Association (ADA). There was minimal risk for the participation of this study as a non-experimental study.

Ethical consideration was given to the participants of this study by providing an informed consent. Informed consent was provided to all participants who chose to participate in this study. Generally, there are three areas through the informed consent process that should be included. This includes a voluntary participation; a description of what the participants can expect regarding questionnaires, risks, and benefits of the study; and lastly an opportunity for the participant to ask questions and the freedom to withdraw at any time (Kimmel, 1988). Participants were required to read the entire informed consent without being able to proceed to the survey until they either "agreed" and moved on, or "disagreed" and were exited from the survey.

Data Collection

Data collection occurred after Capella University Institutional Review Board approval. This study utilized SurveyMonkey as a platform to recruit participants and collect data. According to SurveyMonkey, surveys were dispersed by utilizing SurveyMonkey audience who

meet specific survey criteria “Ready to send your survey? Here’s how, 2016”. The participants who were used at SurveyMonkey were recruited from various diverse populations that included 30 million people who have completed surveys prior. The audience or participants at SurveyMonkey initially complete a detailed profile survey which gave information about themselves to help SurveyMonkey identify what type of survey invitations may be sent. No special site permissions are required as recruitment will not be completed in alternative sites. Since SurveyMonkey could send the surveys to those who met the eligibility requirements, no advertisement was utilized.

Data Analysis

This study used Pearson’ *r* and Multiple Linear Regression to analyze the data. The analysis used Pearson’s *r* which established statistical relationships in Research Question 1. Pearson’s *r* is an analysis that shows linear relationships between two datasets on +1 to -1 range (Huck, Bixiang, & Hongwei, 2007). The next four research questions were individually analyzed using three separate multiple linear regressions. Multiple linear regressions analyzed the association between the independent variables of learned helplessness and the dependent variables. The dependent variables being investigated in Research Questions 2 through five were, alcohol use, depression, diabetes, and the multimorbidity (alcohol use, depression, and diabetes). Using multiple linear regression provided this study with associations and predictive values, which were essential when working with multiple linear regressions (Segrin, 2010).

In Table 1 the statistical breakdown can be found which describes the research question, statistical tests, variables, independent variables (IV), dependent variables (DV), and data type.

Table 1. Statistical Testing

Research Questions	Variables	Statistical Tests for Hypothesis
1. Do any relationships exist between levels of learned helplessness, as measured by the Coping Competence Questionnaire (CCQ), and ethnicity, gender, or income?	1. Learned Helplessness and Ethnicity 2. Learned Helplessness and Gender 3. Learned Helplessness and Income.	1. One-way ANOVA 1b. Post Hoc with Tukey HSD 2. *t* Test 3. Spearman's rho
2. Is there a relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the Alcohol Use Disorder Identification Test: Self-Report Version (AUDIT)?	1. Learned Helplessness 2. Alcohol Use	1. Spearman's rho
3. Is there a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the Patient Health Questionnaire-8 (PHQ-8)?	1. Learned Helplessness 2. Depression	1. Spearman's rho
4. Is there a relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?	1. Learned Helplessness 2. Risk Factors for Diabetes	1. Spearman's rho
5. Are there any relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?	1. Learned Helplessness 2. Alcohol Use 3. Depression 4. Risk Factors for Diabetes	1. Spearman's rho

Instruments

The following sections will review the instruments or questionnaires that were included in this study's survey. All questionnaires will be found in Appendix A.

Coping Competence Questionnaire (CCQ)

The Coping Competence Questionnaire (CCQ) was developed based on learned helplessness theories to fill in the gap for emotional well-being, stress resistance, and mental health questionnaires (Schroder & Ollis, 2013). It is based on the theory of learned helplessness first derived from Seligman and colleagues which postulated that some individuals believe that if they do not have control over the outcome of their situation they naturally give up and the negative outcome are likely to occur (Schroder & Ollis, 2013).This questionnaire are used primarily to assess measures of resiliency against helplessness and helplessness based depression and it focuses on the emotional, behavioral deficits, and anticipatory symptoms of learned helplessness (Schroder & Ollis, 2013). The CCQ is a free tool that is available to the public and can be reproduced without permission (Schroder, n.d).

The questionnaire is measured by a 6-point Likert scale ranging from 1= *very uncharacteristic of me* to 6 = *very characteristic of me*. Scores are calculated by reversing the answer choices, such as; answer choice 1=6, answer choice 2=5, answer choice 3=4, answer choice 4=3, answer choice 5=2, and answer choice 6=1. Scores range from 12 to 72, were high scores determine a resiliency to learned helplessness.

The psychometric for the CCQ has been assessed to be a reliable tool with a Cronbach's alpha of .90 and a test-retest reliability of .70 to .84 over a three-month period and .60 over a six-month period (Ollis, Davies, & Schroder, 2008). Additionally, tests of convergence and

divergent validity was completed by comparing it to the Attributional Style Questionnaire which produced strong correlation with depression scores ranging .53 to .57 (Ollis et al., 2008; Schroder & Ollis 2013).

Alcohol Use Disorders Identification Test: Self-Report Version (AUDIT)

The Alcohol Use Disorders Identification Test: Self-Report Version (AUDIT) was created by the World Health Organization (WHO) to screen for excessive drinking and help clinicians identify patients or clients who would benefit from stopping or reducing alcohol intake (Babor et al., 2001). The AUDIT is a free tool that is available to the public and can be reproduced without permission (Babor, 2001).

The AUDIT questionnaire has 10 questions which can be answered by the participants by placing an "X" on the box that they feel most closely answered the question. For each of the "X" that are marked a number was associated with it depending on the column. That column number will then be written in by the clinician in the empty box of each row and then summed up at the bottom. Scores vary from 0 to 40. Scores 0-7 call for an intervention of "alcohol education" (Babor et al., 2001). Scores 8-15 call for an intervention of "simple advice" (Babor et al., 2001). Scores 16-19 call for an intervention of "simple advice plus brief counseling and continued monitoring (Babor et al., 2001). Lastly, scores 20 to 40 call for an intervention of "referral to specialist for diagnostic evaluation and treatment" (Babor et al., 2001).

The psychometrics for the AUDIT questionnaires has been proved to have good reliability with a Cronbach's alpha at .984 from a population of 112 participants and (Cassidy, Schmitz, &Malla, 2008). Another study shows the Cronbach's alpha at a high point with it equaling to .91 (Almarri, 2009). In test-retest reliability the AUDIT indicated high reliability

with r =.86 (Fleming, Barry, & MacDonald, 1991). When compared to the Short Alcohol Dependence Data Questionnaire (SADD) the AUDIT significantly and moderately correlated with the frequency of "usual" drinking (Almarri, 2009). Lastly, the AUDIT showed to have predictive validity of F (2, 01) = 19.44 p<.001.

Patient Health Questionnaire-8 (PHQ-8)

The patient health questionnaire-8 (PHQ-8) is part of a series mental health questionnaires created by Spitzer et al., (2014). The PHQ-8, is derived from the PHQ-9, which was created to screen for depressive symptoms in various types of settings such as counseling settings or primary care settings. The PHQ-8 was selected instead of the PHQ-9 as the 9th question on the PHQ-9 assessed suicidality which was beyond the scope of this study. The PHQ-8 is helpful in several settings for clinicians, therapist, and doctors who seek to better understand what levels of depressive symptoms a client or patient may be experiencing. The PHQ-8 is a free tool that is available to the public and can be reproduced without permission (Spitzer et al., 2014).

The PHQ-8 is made up of 8 questions that assess for depressive symptoms. The questions follow similar symptomology as the DSM-IV criteria for depression (Spitzer et al., 2014). Participants are asked to think about the past two weeks of symptoms and answer the questions on a scale of 0 = *not at all*, 1 = *several days*, 2 = *more than half the days*, or 3 = *nearly every day*. Questionnaire administrators sum up the circled responses and scores between 0 to 4 indicate no depressive symptoms, 5 to 9 indicate mild depressive symptoms, 10 to 14 indicate moderate depressive symptoms, 15 to19 indicate moderately severe depressive symptoms, and 20-24 indicate severe depressive symptoms (Spitzer et al., 2014).

The PHQ-8 has been assessed to have a Cronbach's alpha of .85 with good reliability (Pressler et al., 2011). According to Pressler et al. (2011) construct validity was provided by supporting correlations between the PHQ-8 and Living With Heart Failure Questionnaire (LHFQ) the magnitude of the emotional subscale ($r = 0.73$, $P < .001$), followed closely by the LHFQ total scale ($r = 0.68$, $P < .001$) and the physical subscale ($r = 0.59$, $P < .001$) (Pressler et al., 2011).

Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes

The Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes was developed to provide a screening tool that would be used for those patients who have not yet been diagnosed with diabetes. This questionnaire does not diagnose the participants with diabetes, but provided a score that showed the risk level for diabetes. This is a free tool that is available to the public and can be reproduced without permission (Heejung et al., 2009).

The Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes is a six-question tool that assess the risk for diabetes in participants. Every question has a possible answer choice under the "Score" column which would indicate a score for that question. Scores are then input on the far-right column and added on the bottom. Scores that add up to a 4 indicate a high risk of having undiagnosed diabetes or pre-diabetes, whereas scores 5 or higher are high risk of having undiagnosed diabetes. Scores range 0-9.

The Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes cut off point defined approximately 35% of the adult population as high risk for undiagnosed diabetes and yielded a sensitivity of 79%, specificity of 67%, with Area Under Curve (AUC) of .74 (Heejung et al., 2009). In addition, this questionnaire yielded a positive predictive value of 10%

and likelihood ratio-positive of 2.39 (1.89) (Heejung et al., 2009). The researcher Heejung et al. (2009) stated that it was important to utilize this tool with various populations to assess the appropriateness.

Ethical Considerations

Ethical consideration for this study were completed by implementing procedural safeguards to ensure ethical practice. The study had minimal risk to its participants with the associated questions from the questionnaires regarding learned helplessness symptoms, alcohol use, depressive and diabetic symptoms. Some risks for the participating individuals may include an added awareness toward learned helplessness, drinking patterns, mental health symptoms, and diabetic symptoms through the questionnaires that was completed.

Participants who completed the survey or chose to drop out responded to questionnaires about their alcohol use, depression symptoms, and diabetic symptoms and some added awareness may have been placed during this survey. Due to this added awareness, a safeguard was created to provide additional precautionary information if they chose to require follow up services. The specific national hotlines were given for each of these topics. The national hotline phone number for mental health and substance abuse was provided, as attained by the Substance Abuse and Mental Health Services Administration (SAMHSA). The diabetic national hotline was provided for the American Diabetes Association (ADA). There was minimal risk for the participation of this study as a non-experimental study.

Ethical consideration was given to the participants of this study by providing an informed consent. Informed consent was provided to all participants who participated in this study, regardless of their completion of the survey. The participants were explained that all information

was kept private and confidential. This was further enforced as this study did not require for participants to document their personal information such as name, address, or telephone numbers. Participants were given an email address that they could reach out to if they have any questions about the study. Attention was also given to the security of the data that was collected and kept in a password and encrypted USB and protected for 7 years after the study was published and then destroyed. Generally, there are three areas through the informed consent process that should be included. This includes a voluntary participation; a description of what the participants can expect regarding questionnaires, risks, and benefits of the study; and lastly an opportunity for the participant to ask questions and the freedom to withdraw at any time (Kimmel, 1988). Participants had to read the entire informed consent as the survey would not allow progression until they either "agreed" and moved on, or "disagreed" and were exited from the survey.

No conflicts of interest occurred during this study and the participants remained entirely anonymous through the survey process as no personal information was required for this study. This study received review and approval from Capella University Institutional Review Board.

Summary

In chapter 3 the methodological construction of this study has been described. The purpose of this study was to be able to answer the research questions and contribute to knowledge base on whether levels of learned helplessness can predict alcohol use, depression, and diabetes. The five research questions and respective hypotheses have been presented. The research design has been outlined with the included target population and sample procedures. Data collection and analysis was described and broken down in Table 1. The following

questionnaires were used in the study's survey including the CCQ, AUDIT, PHQ-8, and the Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes. Lastly, ethical consideration and participant protection was reviewed.

In Chapter 4, the results of the surveys for this study are reviewed. A background was provided to Chapter 4 including a description of the sample, hypotheses testing, and statistical analysis.

CHAPTER 4. RESULTS

Introduction

This study investigated learned helplessness and the relationship to alcohol use, depression, diabetes, and demographic variables. Learned helplessness was measured by the Coping Competence Questionnaire (CCQ), alcohol use was measured by the Alcohol Use Disorder Identification Test: Self-Report Version (AUDIT) questionnaire, depression was measured by the Patient Health Questionnaire-8 (PHQ-8), and risk factors for diabetes was measured by the Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes questionnaire. The questionnaires were administered via a survey through www.surveymonkey.com. In this chapter, a review of the results from the statistical analysis were reviewed including a description of the sample, hypothesis testing, post-hoc analysis, and a brief summary of the results.

Description of the Sample

The sample for this study was collected during the Fall of 2016. There was a total of 140 participants that responded to the survey, but only 130 participants completed the entire survey. Ten participants were removed from this study since they did not complete the survey. The survey was distributed by www.surveymonkey.com and each survey included demographic information for gender, age, ethnicity, and income. Additionally, the survey included four questionnaires; CCQ, AUDIT, PHQ-8, and the Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes.

Power Analysis and Sample Size

The power of the sample was calculated using G* Power 3.1.9.2 using a *t*-test correlation: Point biserial model with a priori analysis to compute for the required sample (Buchner, Erdfelder, Faul, & Lang, 2007). This is shown in Figure 1 and Figure 2. The selection of two tails with a medium effect size (p =.30) and a significant criterion alpha (α) of .05. with a power of .90, determined a sample size of 109 participants. The total sample size, after the exclusion of uncompleted surveys, was 130. The output critical *t* value was 1.98 and the degree of freedom was 107.

Descriptive Statistics

The total sample of participants for this survey included 140 participants, but only 130 participants were used for data analysis due to 10 participants not completing the surveys. In Table 2, the demographic information that pertains to the study was reviewed including percent and frequencies.

Table 2. Demographic of Participants

Demographic Variable	Frequency	Percent
Sex		
Male	57	43.85%
Female	73	56.15%
Total	130	100.00%
Age		
18-20	6	4.62%
21-29	29	22.31%
30-39	30	23.08%
40-49	34	26.15%
50-59	22	16.92%
60-64	9	6.92%
Total	130	100.00%
Income		
$0-$25,000	32	24.62%
$25,000-$40,000	24	18.46%
$40,000-$75,000	30	23.08%
$75,000-$100,000	17	13.08%
$100,000 or more	27	20.77%
Total	130	100.00%
Ethnicity		
White	116	89.23%
Black	8	6.15%
Hispanic	6	4.62%
Total	130	100.00%

Hypothesis Testing

The following are the guiding research questions for this study which included the null hypothesis and alternative hypothesis.

Research Question 1: Do any relationships exist between levels of learned helplessness, as measured by the Coping Competence Questionnaire (CCQ), and ethnicity, gender, or income?

Null hypothesis: There are no relationships between levels of learned helplessness, as measured by the CCQ, ethnicity, gender, or income.

Alternative hypothesis: There are relationships between levels of learned helplessness, as measured by the CCQ, ethnicity, gender, or income.

Research Question 2: Is there a relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the Alcohol Use Disorder Identification Test: Self-Report Version (AUDIT)?

Null hypothesis: There is no relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the AUDIT.

Alternative hypothesis: There is a relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the AUDIT.

Research Question 3: Is there a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the Patient Health Questionnaire-8 (PHQ-8)?

Null hypothesis: There is no relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the PHQ-8.

Alternative hypothesis: There is a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the PHQ-8.

Research Question 4: Is there a relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?

Null hypothesis: There is no relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Alternative hypothesis: There is a relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Research Question 5: Are there any relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?

Null hypothesis: There are no relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Alternative hypothesis: There are relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Each research question's hypotheses were tested by using statistical testing which included One-way ANOVA, post hoc with Tukey HSD, t Test, and Spearman's rho. In addition, it is important to note that the CCQ Manual suggested that scores be transformed so that low scores read as higher levels of learned helplessness and higher scores showed lower levels of

learned helplessness. In this study, this transformation of data was not completed and so scores that were lower showed lower levels of learned helplessness and higher scores showed higher levels of learned helplessness. Statistical testing for both the transformed and untransformed data showed the same statistical significance. This was decided to assist the readers who are unfamiliar with the CCQ to be able to interpret results more easily. In Table 1, a statistical breakdown of tests and variables per research question were included.

Research Question 1 investigated the relationships, if any, between CCQ (levels of learned helplessness) and ethnicity, gender, and income. Due to a review of the normality on histograms for ethnicity, gender, and income, multiple hypotheses were tested. The hypothesis was tested by using four statistical tests including One-way ANOVA (CCQ and ethnicity), post hoc with Tukey HSD (CCQ and ethnicity), *t* Test (CCQ and gender), and Spearman rho (CCQ and income).

The first Research Question: Do any relationships exist between levels of learned helplessness, as measured by the Coping Competence Questionnaire (CCQ), and ethnicity, gender, or income, was investigated. In the first part of the Research Question, Ethnicity (IV) is compared to levels of learned helplessness (DV) using a one-way ANOVA. The statistical assumption for a one-way ANOVA included the assumption of independence were observations are independent of each other, the assumption of normality were samples should be normally distributed, and the assumption of homogeneity of variance were distributions in the population are equal (Warner, 2013). An examination of the methodological design for this study suggested that CCQ_Total (total levels of learned helplessness) and Ethnicity variables were independent of each other, thus satisfying the assumption of independence. Examination of a histogram of

CCQ_Total in Figure 3, indicated that scores were approximately normally distributed with no extreme outliers. The Levene Test for homogeneity of variance, shown in Table 3, was used to examine whether there were serious violations for this assumption, but no significant violation was found: $F(2, 127)= 3.057$, $p = .0505$.

Figure 3. CCQ_Total Histogram

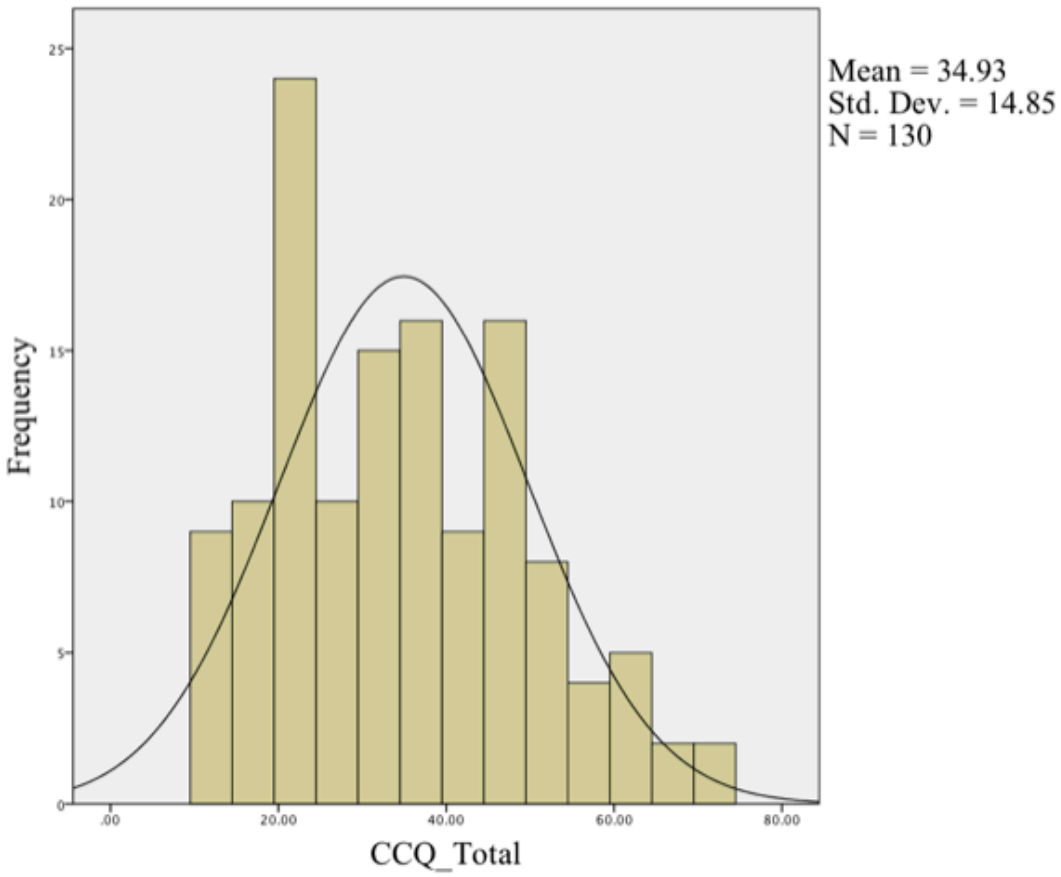

Figure 3. The normal distribution is shown here for CCQ_Total.

Table 3. Tests of Homogeneity of Variance

CCQ_Total			
Levene Statistic	*df* 1	*df* 2	*p* -value
3.057	2	127	0.0505

The overall *F* for the one-way ANOVA was statistically significant, as shown in Table 4, $F(2, 127)=3.250$, $p < .05$. This corresponded to an effect size of $\eta^2 = .049$ with a medium effect size (Warner, 2013). In addition, a post hoc with Tukey HSD test was completed to ascertain which

variable was significant. In Table 5, the Tukey HSD test is shown. Table 6 shows the descriptive for the one-way ANOVA and post hoc comparisons using the Tukey HSD test which indicated that mean score for Hispanic/Latino (M=20.67, SD=9.33) was significantly different (p=0.46) than the White group (M=35.38, SD=14.24). However, the Black (M=39.13, SD=21.72) ethnicity did not significantly differ from Whites at p= 0.054 when compared to Hispanics. In Figure 4, the means plot shows a visual interpretation of CCQ_Total and Ethnicity.

Table 4. ANOVA Table for CCQ_Total and Ethnicity

	Sum of Squares	*df*	Mean Square	*F*	*p* -value
Between Groups	1384.86	2.00	692.43	3.25	0.04
Within Groups	27061.52	127.00	213.08		
Total	28446.38	129.00			

Table 5. Post Hoc Test Using Tukey HSD

Ethnicity	Ethnicity	Mean Difference	Standard Error	*p* -value	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
White	Black	-3.75	5.34	0.76	-16.4	8.91
	Hispanic/Latino	14.71*	6.11	0.05	0.22	29.21
Black	White	3.75	5.34	0.76	-8.91	16.4
	Hispanic/Latino	18.46	7.88	0.05	-0.24	37.15
Hispanic/Latino	White	-14.71*	6.11	0.05	-29.21	-0.22
	Black	-18.46	7.88	0.05	-37.15	0.24

*Note. *. The mean difference is significant at the 0.05 level.*

Table 6. Descriptives for CCQ_Total and Ethnicity

					95% Confidence Interval for Mean			
Ethnicity	*N*	Mean	*SD*	Standard Error	Lower Bound	Upper Bound	Minimum	Maximum
White	116	35.4	14	1.32	32.76	38	12	72
Black	8	39.1	22	7.68	20.97	57.28	12	72
Hispanic/Latino	6	20.7	9.3	3.81	10.87	30.46	12	37
Total	130	34.9	15	1.3	32.35	37.51	12	72

Figure 4. Means Plot

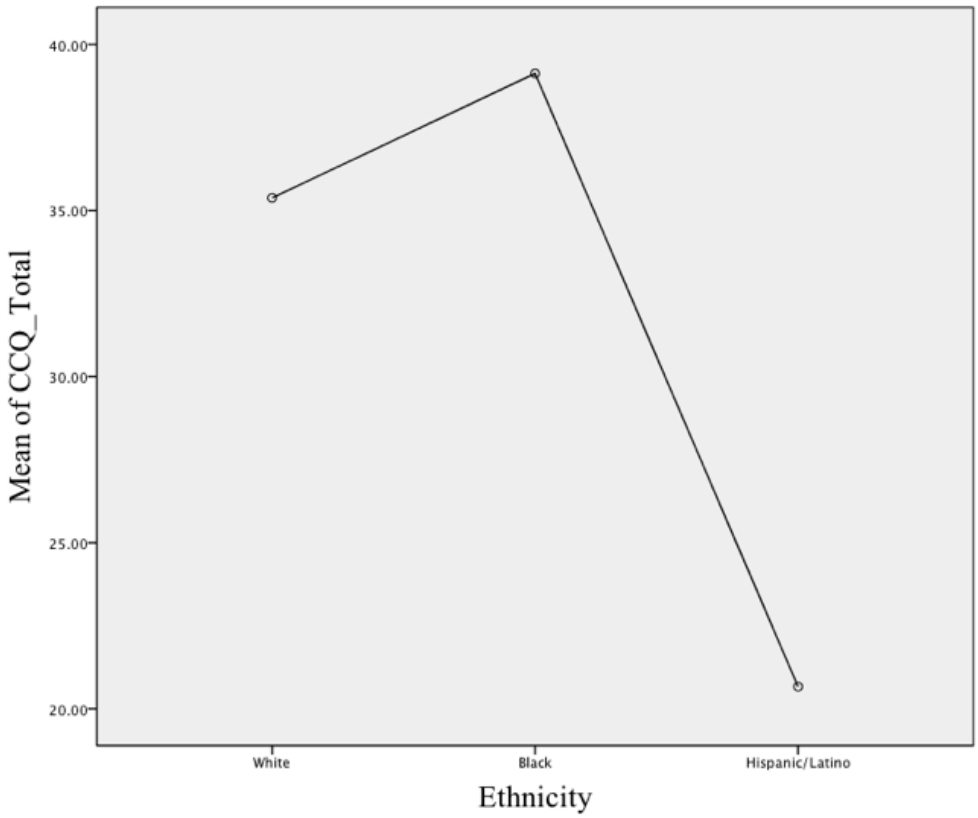

Figure 4. The means plot shows a visual interpretation of CCQ_Total and Ethnicity.

Table 7. Independent Samples Test Including Levene's Test for Equality of Variances

		Levene's Test for Equality of Variances				
		F	Sig.	*t*	*df*	Sig. (2-tailed)
CCQ_Total	Equal variances assumed	.80	.37	-.39	128	.70
	Equal variances not assumed			-.39	111.43	.70

In the last part of the first Research Question, Income (IV) is compared to levels of learned helplessness (DV) using the Spearman's rho. Spearman's rho was the indicated test to utilize as the Income variable does not meet Pearson's *r* assumption of linearity. Based on the results of Spearman's rho, see Table 8, a significant negative correlation was shown; as income was higher there were lower scores of learned helplessness: $r_s = -.18$, $p < .05$. In addition, a visual interpretation of Figure 5 indicates the latter relationship as well.

Table 8. Spearman's Rho Correlations for Income and CCQ_Total

		Income	CCQ_Total
Income	Correlation Coefficient	1.00	-.18*
	Sig. (2-tailed)	.	.04
	N	130.00	130.00
CCQ_Total	Correlation Coefficient	-.18*	1.00
	Sig. (2-tailed)	.04	.
	N	130.00	130.00

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 5. Scatterplot for CCQ_Total and Income

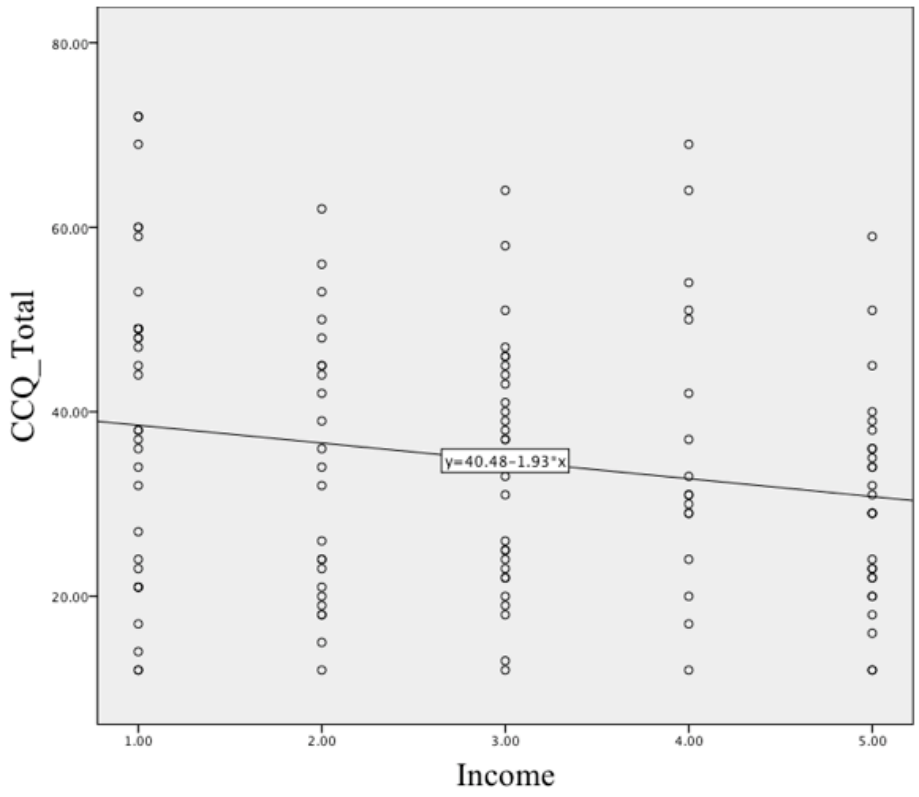

Figure 5. Negative correlational relationship between CCQ_Total and Income.

In Research Questions 2 through 5, the Spearman's rho test was utilized to complete hypothesis testing due to variables not meeting the Pearson's *r* assumption for normality and linearity. The variables that were utilized in these questions are levels of learned helplessness in the form of CCQ_Total, alcohol use in the form of AUDIT_Total, depressive levels in the form of PHQ-8_Total, and risk factors for diabetes in the form of DIABETES_Total.

In Research Question 2: Is there a relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the Alcohol Use Disorder Identification Test: Self-Report Version (AUDIT), was investigated using Spearman's rho due to the AUDIT_Total

variable not meeting the Pearson's *r* assumption for normality and CCQ_Total and AUDIT_Total not meeting the Pearson's *r* assumption for linearity. Based on the results of Spearman's rho, see Table 9, there was not a significant correlation between alcohol use and learned helplessness: $r_s = .019$, $p = .832$.

Table 9. Spearman's Rho Correlations for CCQ_Total and AUDIT_Total

		CCQ_Total	AUDIT_Total
CCQ_Total	Correlation Coefficient	1.00	0.02
	Sig. (2-tailed)	.	.83
	N	130.00	130.00
AUDIT_Total	Correlation Coefficient	0.02	1.00
	Sig. (2-tailed)	.83	.
	N	130.00	130.00

The third Research Question: Is there a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the Patient Health Questionnaire-8 (PHQ-8), was investigated using Spearman's rho due to the CCQ_Total and PHQ8_Total variable not meeting the Pearson's *r* assumption for normality. Based on the results of Spearman's rho, see Table 10, a significant positive correlation was shown; as learned helplessness was higher there were higher levels of depression: $r_s = .654$, $p < .01$. In addition, a visual interpretation of Figure 6 indicates the latter relationship as well.

Table 10. Spearman's Rho Correlations for CCQ_Total and PHQ8_Total

		CCQ_Total	AUDIT_Total
CCQ_Total	Correlation Coefficient	1.00	.65**
	Sig. (2-tailed)	.	.00
	N	130.00	130.00
PHQ8_Total	Correlation Coefficient	.65**	1.00
	Sig. (2-tailed)	.00	.
	N	130.00	130.00

**. Correlation is significant ar the .01 level (2-tailed)

Figure 6. Scatterplot for CCQ_Total and PHQ8_Total

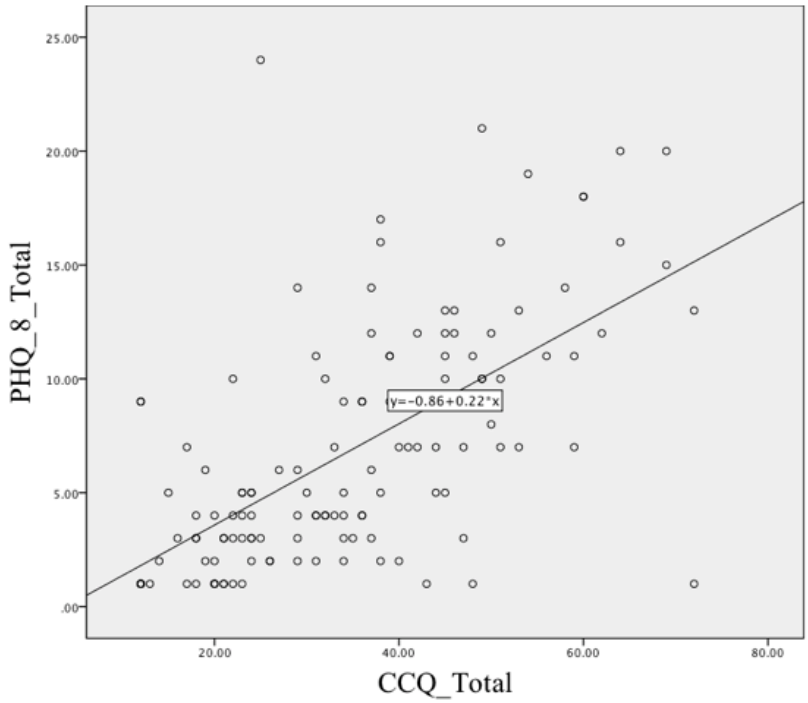

Figure 6. A positive correlational relationship between CCQ_Total and PHQ8_Total

In Research Question 4: Is there a relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes, was investigated using Spearman's rho due to the

CCQ_Total and DIABETES_Total variable not meeting the Pearson's *r* assumption for normality and linearity. Based on the results of Spearman's rho, see Table 11, there was not a significant risk factor for diabetes and learned helplessness: $r_s = -.01$, $p = .88$.

Table 11. Spearman's Rho Correlations for CCQ_Total and DIABETES_Total

		CCQ_Total	DIABETES_Total
CCQ_Total	Correlation Coefficient	1.00	-.01
	Sig. (2-tailed)	.	.88
	N	130.00	130.00
DIABETES_Total	Correlation Coefficient	-.01	1.00
	Sig. (2-tailed)	.88	.
	N	130.00	130.00

The last Research Question: Are there any relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes, was answered by utilizing Spearman's rho as multiple combination of variables did not meet the Pearson's *r* assumption for linearity and normality. Based on the results of Spearman's rho, see Table 12, there was only one significant correlation. This correlation was the same as the one from Research Question 3. This was a positive correlation between levels of learned helplessness and levels of depression, or as learned helplessness was higher there were higher levels of depression: $r_s = .654$, $p < .01$. In addition, a visual interpretation of Figure 6 indicates the latter relationship as well.

Table 12. Multiple Spearman's Rho Correlations

		CCQ_Total	DIABETES_Total	AUDIT_Total	PHQ8_Total
CCQ_Total	Correlation Coefficient	1	-0.01	0.02	.65**
	Sig. (2-tailed)	.	0.88	0.83	0
	N	130	130	130	130
DIABETES_Total	Correlation Coefficient	-0.01	1	-0.09	0.12
	Sig. (2-tailed)	0.88	.	0.31	0.17
	N	130	130	130	130
AUDIT_Total	Correlation Coefficient	0.02	-0.09	1	-0.02
	Sig. (2-tailed)	0.83	0.31	.	0.78
	N	130	130	130	130

**. Correlation is significant at the .01 level (2-tailed)

Summary

In this section, a summary of the results for the null and alternative hypothesis were included for each of the five research questions for this study.

Research Question 1: Do any relationships exist between levels of learned helplessness, as measured by the Coping Competence Questionnaire (CCQ), and ethnicity, gender, or income?

Hypothesis outcome: The alternative hypothesis was accepted. There are relationships between levels of learned helplessness, as measured by the CCQ, ethnicity, gender, income.

Research Question 2: Is there a relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the Alcohol Use Disorder Identification Test: Self-Report Version (AUDIT)?

Hypothesis outcome: Failed to reject the null hypothesis. There is no relationship between learned helplessness, as measured by the CCQ, and alcohol use, as measured by the AUDIT.

Research Question 3: Is there a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the Patient Health Questionnaire-8 (PHQ-8)?

Hypothesis outcome: The alternative hypothesis was accepted. There is a relationship between learned helplessness, as measured by the CCQ, and depression, as measured by the PHQ-8.

Research Question 4: Is there a relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?

Hypothesis outcome: Failed to reject the null hypothesis. There is no relationship between learned helplessness, as measured by the CCQ, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

Research Question 5: Are there any relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes?

Hypothesis outcome: The alternative hypothesis was accepted. There are relationships between learned helplessness, as measured by the CCQ, alcohol use, as measured by the AUDIT, depression, as measured by the PHQ-8, and risk factors for diabetes, as measured by the Self-Assessment Screening for Undiagnosed Diabetes or Prediabetes.

In Chapter 5 of this study, a summary, discussion, and conclusion based on the results were provided. Also, limitations, implications for practice, and recommendations for further

research were addressed. Lastly, a conclusion that summarizes the overall finding in this study and final description.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Introduction

In this section of the study a review of learned helplessness and the relationship to alcohol use, depression, diabetes, demographic variables, and the outcomes of this study are presented. A summary of the outcomes for this study, discussion, and conclusion based on the results are provided. Also, limitations, implications for practice, and recommendations for further research are addressed. Lastly, a conclusion will complete this study.

Summary of the Results

The purpose of this study was to be able to answer the research problems and contribute to knowledge base on whether levels of learned helplessness can predict alcohol use, depression, and diabetes in various populations. Alcohol use, depression, and diabetes, are multimorbidities that have limited research and have been previously investigated with populations such as American Indian and Alaska Native populations, but little research has been completed in the through various races such as Whites, Hispanics, and Blacks (Carle, 2009; Tann et al., 2007).

The significance of this study will contribute to various disciplines across the psychological community by providing academic and mental health professionals data regarding this multimorbidity to better understand this phenomenon. Additionally, the significance of this study will contribute to the advancement of the knowledge base in general psychology and theory of learned helplessness and hopelessness theory. According to Akca (2011) more studies are needed when researching the effects of learned helplessness with a variety of populations. A study by Gotshall and Stefanou (2011) recommended that learning how to help students with disabilities who have learned helplessness would benefit the teaching community. The

implications of learning more about learned helplessness and utilizing its implications to further the psychological field would be beneficial according to Badwar (2009). Another implication of this study and learned helplessness are for clinicians who have patients who are struggling with learned helplessness and illness acceptance (Karademas & Hondronikola, 2010). Some of the disciplines that aim to benefit from resolving this research problem include those clinicians that work in the psychological field, primary care doctors, and educators (Badwar, 2009; Gotshall & Stefanou 2011; Krademas & Hondronikola, 2010).

The literature review was broken down by a review of the two leading theories including learned helplessness and hopelessness theory and variables being investigated as they related to learned helplessness. The first variable that was reviewed was alcohol use, followed by depression, then diabetes, and lastly what is known in the literature about this multimorbidity set (alcohol use, depression, and diabetes). New developments in the literature over learned helplessness and the chosen multimorbidity has not yielded any new research during 2017. The most updated article that addressed this multimorbidity was the article by Tann et al., (2007), which investigated the "triADD" in American Indian and Alaska Native population (p. 1). More specifically, this research aimed to investigate risk factors associated with this triADD using the Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BFRSS), which surveyed overs 400,000 people in the United States including territories and the District of Columbia each year (Tann et al., 2007). Largely, the study showed that statistically the American Indian and Alaska Native populations were more at risk for the multimorbidity or triADD of alcohol use, depression, and diabetes (Tann et al., 2007). This study

also suggested that further epidemiological studies should continue to look at multimorbidities such as the ones this study is examined (Tann et al., 2007).

Alcohol use and learned helplessness provided the most limited research in the scientific literature. Many articles investigated the link between learned helplessness or depression and alcohol use amongst male and females in colleges or universities; disproportionately amounts investigated female habits (Geisner et al., 2012; Lee et al., 2012; Lonczak et al., 2007; Merrill et al., 2014; Noel & Lisman, 1980; Wechsler et al., 1995). Additionally, articles that did investigate alcohol use and learned helplessness were written in the late 1970's through 2003 and the literature did not explain the lack of current research. One possibility could be that learned helplessness is highly associated with depression and most current researchers investigated the combination of learned helplessness and depression.

Learned helplessness has been investigated mostly with depression, as the results for this study would agree that learned helplessness and depression are at least moderately related. Furthermore, learned helplessness currently continues to be investigated in recent research articles as one of the indicators for depression in individuals (Kees et al., 2015; Lester, 2012; Maier & Seligman, 2016; Miller-Day & Jackson, 2012; Watson et al., 2013). In addition, the applicability of learned helplessness and depression can also be associated in those with PTSD and cancer patients (Bargai et al., 2007; Watson et al., 2013).

The diabetic variable was a unique variable in this study as it investigated the health psychology aspect of this study. Diabetes continues to be a topic of interest worldwide as the International Diabetes Foundation reported in 2014 that there are 387 million individuals diagnosed with diabetes (Younis et al., 2017). Currently, diabetes and learned helplessness is a

topic that continues to seek out additional research from investigators (McLaughlin et al., 2010; Shepard et al., 2014).

The study investigated five Research Questions that examined the relationship between learned helplessness, demographic variables, alcohol use, depression, and risk factors for diabetes. The study concluded that in Research Question 1, ethnicity and learned helplessness were statistically significant. In Research Question 1, there was a negative correlational relationship between participant's income and scores of learned helplessness. Furthermore, a positive correlational relationship between learned helplessness and depressive symptoms was also established. There was no statistical relationship between learned helplessness and alcohol use, or risk factors for diabetes. Additionally, multiple correlations were run between learned helplessness and alcohol use, depressive symptoms, and risk factors for diabetes and no other correlation was found amongst these variables through various groupings; with the exception of learned helplessness and depression, no other correlation was found.

Discussion of the Results

Multiple interpretation can be concluded from the results from the Research Questions and lack of. The study investigated five Research Questions that investigated the relationship between learned helplessness, demographic variables, alcohol use, depression, and risk factors for diabetes which can be found in Table 4. Only two Research Questions yielded statistically significant outcomes, which included research questions, are there relationships between levels of learned helplessness, as measured by the Coping Competence Questionnaire (CCQ), and ethnicity, gender, or income, and Research Question 3, are there relationships between learned

helplessness, as measured by the CCQ, and depression, as measured by the Patient Health Questionnaire-8 (PHQ-8).

The study concluded that in Research Question 1, ethnicity and learned helplessness were statistically significant. In this section of the Research Question, Hispanics were statistically lower in learned helplessness levels when compared to Whites. These results suggested that Hispanics may be more resilient to learned helplessness than when compared to Whites. The third part of the Research Question one concluded that there was a negative correlational relationship between the participant's income and scores of learned helplessness. This would suggest that as participant's income was higher, the levels of learned helplessness decreased. Income was not a variable that was often mentioned in the literature and these results can be interpreted as refreshing and additive to the literature. Whilst ethnicity and learned helplessness and income and learned helplessness were statistically significant, gender and learned helplessness were not significant.

Furthermore, a positive correlational relationship between learned helplessness and depressive symptoms was found. This suggested that as learned helplessness levels increased, depressive symptoms also increased. It is important to note that correlation does not equal causation, only that these two variables in this study were positively correlated and a relationship was present.

There was no statistical relationship between learned helplessness and alcohol use, or risk factor for diabetes. Additionally, multiple correlations were run between learned helplessness and alcohol use, depressive symptoms, and risk factors for diabetes and no other correlation was found amongst these variables through various groupings; for the exception of learned

helplessness and depression. As mentioned earlier in the study, learned helplessness and alcohol use has not produced recent literature. This may be due to alcohol and depression being mostly related in the scholarly literature. Many articles that were found on alcohol use often studied the variable depression, but rarely study the precursor to depression; in this case learned helplessness. This does not equate to the variable not being important in this study, but only that further research is required to further investigate its implications. In addition, diabetes and learned helplessness did not yield significant research in this study, but this may have been due to a questionnaire issue that was addressed later in this study.

Conclusions Based on the Results

In this section of the study a comprehensive conclusion on the results was explained with an outward focus towards previous literature and the broader field of interest.

In considering the significant relationship between income and learned helplessness, it is important to note that income was not a variable that was often mentioned in the literature and these results can be interpreted as refreshing and additive to the literature. Some research suggested that those who are wealthier tend to be happier and it would be understanding that since learned helplessness is related to depression, that those who are wealthier would show lower levels of learned helplessness (Ruberton, Gladstone, & Lyubomirsky, 2016). In the second part of Research Question, gender and learned helplessness were not statistically significant, which contradicts some of the findings out in current literature. Gender is a variable that has been researched when coupled with learned helplessness, depression, and PTSD in women (Bargai et al., 2007). In this research, it was found that women were affected by learned helplessness and depression when suffering from PTSD. The results of this study do not

necessarily match those of the scholarly literature, but that may be due to the criteria for this study to not have any formal mental health diagnosis. Additional research in this area would be suggested in likely experimental designs that would investigate those populations.

On learned helplessness and depression, most of the findings in the literature were indicative of these findings. These findings do pair with some of the findings suggested by Seligman and colleagues and the theory of learned helplessness by Maier & Seligman (1976) and the second theory of hopelessness theory first postulated by Abramson and Metalsky (1989).

Limitations

Some limitations existed in after the study had commenced and became more evidenced, even though there were significant results. This study did not research special or protected populations, that is those 17 years or younger and those 65 years or older. The results cannot be yielded to younger or older populations. In the research by Tann et al. (2007) indigenous populations where used when investigating multimorbidities, but in this study those populations were excluded as they were not the aim for this research. Another limitation included the variables that were being studied, including, income, learned helplessness, alcohol use, depression, and risk factors for diabetes were not normally distributed or met linearity assumption to run Pearson's correlations, therefore a non-parametric statistical equivalent was chosen; Spearman's rho. Diversity also played a role in the limitations of this study, further diversity could have opened this study to various results or more significant results. There were also issues with the questionnaires that were utilized in the study, including the AUDIT and the Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes questionnaires. The AUDIT questionnaire had mixed type of questions, some of the questions participants could

answer in a Likert scale form 0 through 5, or 0, 3, or 5, which could have made answering confusing for participants. In the Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes questionnaire the questions were complex and required participants to look at a chart to choose answers. Post results indicated that the Self-Assessment Screening Score for Undiagnosed Diabetes or Prediabetes questionnaires only yielded a Cronbach's alpha of .40, therefore not making the questionnaire reliable.

Implications for Practice

The implications of this study could be beneficial amongst multiple stakeholders as it reviews a multimorbidity concept that encompasses clinical psychology, addictions psychology, and health psychology. Some clinicians that could benefit from this study include social workers, counselors, educators, psychologists, psychiatrist, and medical doctors (Badwar, 2009; Gotshall & Stefanou 2011; Krademas & Hondronikola, 2010). Most of these clinician work with populations that may be suffering from mental health, substance abuse, or physiological health conditions. Having a better understanding of the intricacy of this multimorbidity offers some insight to the latter clinicians by providing them further understanding of multimorbidities. According to Akca (2011) more studies are needed when researching the effects of learned helplessness with a variety of populations. In another study by Gotshall and Stefanou (2011), they recommended that learning how to help students with disabilities who have learned helplessness would benefit the teaching community. The implications of learning more about learned helplessness and utilizing its implications to further the psychological field would be beneficial according to Badwar (2009). Furthermore, learned helplessness is crucial for clinicians who have patients who are struggling with depression and illness acceptance (Karademas &

Hondronikola, 2010). Lastly, interventions and knowledge on diabetic care and patient health is important for psychologists, social workers, and mental health professionals (Delamater, 2009)

Recommendations for Further Research

Study replication is important in any field and recommendations for future researchers is an important aspect. Future researchers should consider a questionnaire that better captures alcohol use and risk factors for diabetes and has feasibility to its participants. More importantly, ascertaining good reliability was important for diabetes questionnaires. Additional consideration should be made to questionnaires that will provide data that will meet statistical assumptions of normality and linearity when working with correlations. A consideration to include special populations, such as those 17 years or younger and/or 65 years or older may provide additional generality and inclusivity. Diversifying a future research would also be an important consideration as a more diverse population could yield different outcomes and generalizing the results to further population.

Conclusion

This study reviewed the relationship of learned helplessness in gender, ethnicity, income, and alcohol use, depressive symptoms, and risk factors for diabetes. There were five Research Questions that investigated the relationship between learned helplessness, demographic variables, alcohol use, depression, and risk factors for diabetes. The study concluded that in Research Question 1 ethnicity and learned helplessness were statistically significant. Also in Research Question 1, there was a negative correlational relationship between participant's income and scores of learned helplessness. Furthermore, a positive correlational relationship between learned helplessness and depressive symptoms was also established. There was no

statistical relationship between learned helplessness and alcohol use, or risk factors for diabetes. Additionally, multiple correlations were run between learned helplessness and alcohol use, depressive symptoms, and risk factors for diabetes and no other correlation was found amongst these variables through various groupings; for the exception of learned helplessness and depression. The findings in this study can help multiple clinicians in the field of clinical psychology, addictions psychology, and health psychology. Lastly, this study provided additional data and support for multimorbidities to those academic professionals and clinicians who are often the first line of defense in our communities.

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STATEMENT OF ORIGINAL WORK

Academic Honesty Policy

Capella University's Academic Honesty Policy (3.01.01) holds learners accountable for the integrity of work they submit, which includes but is not limited to discussion postings, assignments, comprehensive exams, and the dissertation or capstone project.

Established in the Policy are the expectations for original work, rationale for the policy, definition of terms that pertain to academic honesty and original work, and disciplinary consequences of academic dishonesty. Also stated in the Policy is the expectation that learners will follow APA rules for citing another person's ideas or works.

The following standards for original work and definition of *plagiarism* are discussed in the Policy:

> Learners are expected to be the sole authors of their work and to acknowledge the authorship of others' work through proper citation and reference. Use of another person's ideas, including another learner's, without proper reference or citation constitutes plagiarism and academic dishonesty and is prohibited conduct. (p. 1)
>
> Plagiarism is one example of academic dishonesty. Plagiarism is presenting someone else's ideas or work as your own. Plagiarism also includes copying verbatim or rephrasing ideas without properly acknowledging the source by author, date, and publication medium. (p. 2)

Capella University's Research Misconduct Policy (3.03.06) holds learners accountable for research integrity. What constitutes research misconduct is discussed in the Policy:

> Research misconduct includes but is not limited to falsification, fabrication, plagiarism, misappropriation, or other practices that seriously deviate from those that are commonly accepted within the academic community for proposing, conducting, or reviewing research, or in reporting research results. (p. 1)

Learners failing to abide by these policies are subject to consequences, including but not limited to dismissal or revocation of the degree.

Statement of Original Work and Signature

I have read, understood, and abided by Capella University's Academic Honesty Policy (3.01.01) and Research Misconduct Policy (3.03.06), including Policy Statements, Rationale, and Definitions.

I attest that this dissertation or capstone project is my own work. Where I have used the ideas or words of others, I have paraphrased, summarized, or used direct quotes following the guidelines set forth in the APA *Publication Manual*.

Learner name and date Artemio Garcia Jr 6/20/17