2016

Utilization and Intensity of Integrated Behavioral Health Services Within a Primary Care Setting

Joseph Aron Shafer
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Joseph A. Shafer

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Review Committee
Dr. Venessa Fegley, Committee Chairperson, Psychology Faculty
Dr. William Disch, Committee Member, Psychology Faculty
Dr. Virginia Salzer, University Reviewer, Psychology Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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Abstract

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BTS, Beth Medrash Govoah Institute for Advanced Study, 2011

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Psychology

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Abstract

Integrated behavioral health care within primary care has become a popular style of health care delivery within the United States. However, individuals with a behavioral health concern face several barriers in using these services. The purpose of this quantitative study was to identify key factors accounting for individuals' utilization and intensity of behavioral health services. Andersen's behavioral model of health care use and the integrated theory of health behavior change served as the theoretical framework. It was hypothesized that gender, age, race, ethnicity, family size, payer type, poverty level, and certain preexisting medical conditions (obesity, diabetes, hypertension, and tobacco use) would determine behavioral health care utilization and intensity. A secondary data analysis of 315 individuals who used behavioral health services within primary care was performed; the study setting was at the Center for Health, Education, Medicine, and Dentistry, located in Lakewood, New Jersey. Among the individual variables examined, only a preexisting condition of hypertension reached statistical significance, showing that those individuals were more likely to attend multiple sessions, χ^2 (1) = 5.77, p = .02. Payer type was also found to be predictive of behavioral health care intensity. Medicare recipients were more likely to attend multiple behavioral health care sessions (74%) than were Medicaid recipients (59%) and those who were uninsured (25%). By providing insights about the barriers faced by individuals, study findings may help patient advocates and health care professionals to provide individuals with better health care. This study has implications for positive social change, as study findings may assist the United States health care system in its shift toward an integrated behavioral health care style of health care delivery.

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Dedication

This study is dedicated to first and foremost my wife, Adina, and our three children, Avi, Ahuva, and Ari. Adina, your passion, motivation, and selflessness you have provided throughout this entire journey is immeasurable. You personify an individual who can work selflessly for a higher purpose while putting the needs of family first. Avi, Ahuva, and Ari, you have been the driving force and purpose throughout this journey. To my parents, in-laws, and siblings, this study is dedicated to you all for your constant support, enthusiasm, and strong interest for me to succeed. A most special dedication to my Uncle Samuel Burstyn, to whom my entire professional growth and this study could have never lifted off the ground without. Finally, this study is dedicated to the health care community, striving to bring about positive social change through integrated health care services, impacting the lives of those we service.

Acknowledgments

Dr. Fegley, you have been such an unbelievable support from the very beginning, instilling in me a true appreciation for our field. This study cannot have come about without your constant encouragement, devotion, and inspiration that was carried along all the way through.

Dr. Disch, your expertise and vast knowledge has not only been something for me to admire and aspire toward, it has shaped this study to a whole new level of academic achievement as well as elevated my standards for conceptualizing, articulating, and analyzing psychological research.

Dr. Salzer, thank you for your dedication toward my academic success, and for your tireless efforts toward the completion of this study.

Dr. Friedman and Mrs. Jaroslawicz, I feel very fortunate working under your leadership within CHEMED Health Center. Thank you for facilitating the completion of this study, and for being constant role models and sources of inspiration.

Dr. Solbach and Dr. Weinschneider, while you may have only seen yourselves as my clinical supervisor, you have provided me with exemplary guidance, expertise, and inspiration toward my professional growth within multiple capacities, and the completion of this study has been no exception.

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Chapter 1: Introduction to the Study

Health care delivery within the United States has become a growing concern, prompting those in the health care field, including psychologists, and in government to make significant advancements toward a more integrated style of health care delivery. They are starting with primary care, which is the main gateway for individuals receiving health care services (Rozensky, 2014). One-third of deaths within the United States come as a result of poor health behaviors, such as smoking, substance abuse, unhealthy eating habits, and lack of exercise. Preventing or decreasing these poor health behaviors and promoting good health behaviors can reduce these mortality rates (Advisory Committee on Interdisciplinary, Community-Based Linkages, 2010). Integrating health care services is therefore important for providing better health care.

One way of better coordinating care is the use of an integrated behavioral health care model (Rozensky, 2014). In health care settings that use this model, behavioral health care providers work within primary care, providing consultation and intervention for individuals who are either presenting with a behavioral health concern or are in need of making a health behavior change to improve their overall physical health. Behavioral health care provided within primary care focus on individuals' behavioral health concerns, as well as target health behaviors that may be impacting their overall physical health. Studies have found how behavioral health care provided within primary care significantly improve the overall health care of individuals (Hunter, Goodie, Oordt, & Dobmeyer, 2009). For this reason, an integrated behavioral health care model within a health care facility is important for individuals to receive overall better health care.

There is limited research on individuals' utilization (i.e., initiation of a behavioral health care session) and intensity (i.e., following up a behavioral health care session) of behavioral health care within primary care settings, however. Studies that have researched determinants of utilization and intensity of behavioral health care within a primary care setting have examined specific individual variables, such as married status and depression severity, and have not examined many other individual variables (Elhai, Voorhees, Ford, Min, & Frueh, 2009; Lindsay Nour, Elhai, Ford, & Frueh, 2009). This lack of research can hamper efforts by the health care community, governmental agencies, and the education and training community within professional psychology in shifting toward an integrated behavioral health care style of health care delivery. It also impedes health care facilities from taking the necessary action to improve utilization and intensity of behavioral health care services provided within their primary care setting.

In this study, I sought to examine multiple individual variables that may be determinants of utilization and intensity of behavioral health care within a primary care setting. The individual variables used for this study are categorized under predisposing, enabling, and need variables, which have shown to be significant determinants of overall health care use (Andersen & Newman, 1973; Lindsay Nour et al., 2009). Study findings may help the health care community provide better health care services and better equip health care facilities adopt and sustain an integrated behavioral health care model (Melchert, 2015; Rozensky, 2014). This chapter provides an overview of the integrated behavioral health care model and its use within United States health care. After stating my research problem, purpose, and research questions and hypotheses, I describe my

research method and theoretical framework and discuss the limitations and significance of my study.

Background

There have been multiple national studies aimed toward identifying individual variables that are relational and predictive of behavioral health care utilization (Barrett & Young, 2012; Elhai & Ford, 2007; Fleury, Grenier, & Bamvita, 2015; Lindsay Nour et al., 2009; Wang et al., 2005). Many of these studies incorporate Andersen's behavioral model of health care use (Andersen & Newman, 1973). The model categorizes individual variables that are predictive of general health care utilization into three categories: (a) predisposing variables, (b) enabling variables, and (c) need variables. While the variables within Andersen's behavioral model of health care use were found to be predictive of general health care utilization, they have not been examined in regard to predicting utilization of behavioral health care services. These studies affirm that these individual variables can be determinant of behavioral health care utilization as well.

For this study, I went a step further by examining how predisposing, enabling, and need variables impacts behavioral health care utilization when behavioral health care services are provided within a primary care setting. Additionally, I examined whether these individual variables impacted their intensity of behavioral health care services (i.e., following up with behavioral health care services) when it was provided within a primary care setting. Addressing this gap in the literature is important, as many of the individual variables that serve as barriers toward either behavioral health care utilization or behavioral health care intensity, may fall away when behavioral health care services are

provided within an integrated behavioral health care setting (Elhai et al., 2009; Lindsay Nour et al., 2009). It is was therefore my goal to examine these individual variables, identifying which ones may serve as barriers toward behavioral health care utilization and intensity when behavioral health care is provided within a primary care setting.

Many health care facilities in the United States are considering adopting an integrated behavioral health care model (Rozensky, 2014). According to Melchert (2015), the shift toward an integrated style of health care delivery may be due to the strong legislative emphasis placed on integrated behavioral health care in the Patient Protection and Affordable Care Act of 2010. As a result, the shift toward an integrated style of health care delivery will not only be in terms of health care delivery but also regarding new health care billing codes, regulations, and reimbursements for services.

An integrated behavioral health care model is one in which has been described by several authors as to how the model is set up and utilized within primary care (e.g., Bridges et al., 2015; Hunter et al., 2009; Robinson & Reiter, 2007). An integrated behavioral health care model is one in which behavioral health care providers work within primary care, providing consultation and intervention for individuals who are either presenting with a behavioral health concern, or are in need of making a health behavior change to improve their overall physical health. If an individual reports having a behavioral health concern to their primary care provider (PCP), or if their PCP feels an individual could use behavioral health intervention due to a physical condition that is being impacted by the individual's poor health behaviors, their PCP would reach out to the behavioral health care provider, often referred to as behavioral health consultants

(BHC; Gatchel & Oordt 2003), who would provide behavioral health care in real-time (Bridges et al., 2015).

One such health care facility providing integrated behavioral health care within primary care is the Center for Health Education, Medicine, & Dentistry (CHEMED), a Federally Qualified Health Center (FQHC), located in Lakewood, New Jersey (CHEMED Health Center, 2015). This study examined the individual variables of those whom have seen a BHC for behavioral health care during their primary care visit within CHEMED Health Center's integrated behavioral health care model. The individual variables were examined as to how they would relate and be predictive of individuals' utilization and intensity of behavioral health care within an integrated behavioral health care model.

Andersen's behavioral model of health care use has been applied to utilization of overall health care use (Andersen & Newman, 1973); it has not been applied within a health care setting using an integrated behavioral health care model. My study is therefore significant in that it examined how the predisposing, enabling, and need variables in Andersen's behavioral model of health care use are manifest among individuals seeking initial and follow-up behavioral health care (in behavioral health as well as psychiatric sessions). I sought to determine the relationships and predictability of individual variables and their behavioral health care utilization and intensity within an integrated behavioral health care model. This information provides insight as to which individual variables may impact an individual receiving behavioral health care within an

integrated behavioral health care model. Results of this study may better equip health care facilities intending to adopt and sustain an integrated behavioral health care model.

Problem Statement

Individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model is a problem because individuals will not get the appropriate health care necessary (Elhai et al., 2009; Lindsay Nour et al., 2009). Barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model may also impede the current United States health care delivery system as it shifts toward an integrated behavioral health care style of health care delivery (Rozensky, 2014). PCPs have become increasingly aware of the importance of an integrated behavioral health care approach to treating patients (Hunter et al., 2009). According to researchers, 70% of medical visits are behavioral health related (Bryan, Morrow, & Kanzler-Appolonio, 2009), and 70% of psychotropic medications are prescribed by medical providers other than behavioral health care providers (Hunter et al., 2009). Identifying individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model is important for optimizing primary care.

My study addressed the gap in the literature regarding individual variables that serve as barriers toward utilization and intensity of behavioral health care within health care settings that use an integrated behavioral health care model. With this information, the health care community can be better equipped shifting toward an integrated behavioral health care style of health care delivery. Identifying barriers toward behavioral

health care utilization and intensity within an integrated behavioral health care model, may also allow for a smoother transition for health care facilities intending to adopt an integrated behavioral health care model (Melchert, 2015; Rozensky, 2014).

Purpose of this Study

The purpose of this study was to identify individual variables that serve as barriers toward individuals' utilization and intensity of behavioral health care. This knowledge will allow individuals to receive overall better health care, and may also assist the United States health care delivery system as it merges toward an integrated behavioral health care style of health care delivery (Lindsay Nour et al., 2009; Rozensky, 2014). The specific individual variables that were investigated within this study included gender, age, race, ethnicity, family size, poverty level, payer type, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use. The independent variables in this study were the individual variables and a primary care visit, and the dependent variables were an initial BHC session and follow-up behavioral health care sessions.

As there is limited research on behavioral health care utilization and intensity within an integrated behavioral health care model (Elhai et al., 2009; Lindsay Nour et al., 2009), this study aimed to optimize services provided within an integrated behavioral health care model by examining which individual variables would serve as barriers toward behavioral health care utilization and intensity. By identifying these individual variables, health care providers can better identify (a) individuals with a behavioral health concern, (b) which individuals would most likely agree for behavioral health care, (c) the type of behavioral health care individuals would need, and (d) likely disparities between

an individual's behavioral health care needs and his/her utilization and intensity of behavioral health care.

Research Questions and Hypotheses

Based on the theoretical framework consisting of Andersen's behavioral model of health care use which posits that predisposing, enabling, and need variables help predict health care utilization (Andersen & Newman, 1973), which can be applied to optimize an integrated behavioral health care model by identifying individual variables that serve as barriers toward behavioral health care utilization and intensity (Lindsay Nour et al., 2009), and the integrated theory of health behavior change which posits that health care providers within primary care play an essential role in facilitating health behavior change (Ryan, 2009), the following research questions were addressed:

RQ1: What are the relationships between individual variables and those seen by a BHC within primary care?

$H_0$1: There are no significant relationships between individual variables and those seen by a BHC within primary care.

H_a1: There are significant relationships between individual variables and those seen by a BHC within primary care.

RQ2: What are the mean differences between single behavioral health care sessions and multiple behavioral health care sessions based on individual variables?

$H_0$2: There is no significant difference in single behavioral health care sessions and multiple behavioral health care sessions based on individual variables.

H_a2: There is a significant difference in single behavioral health care sessions and multiple behavioral health care sessions based on individual variables.

RQ3: Which of all individual variables are predictive of behavioral health care intensity?

$H_0$3: There are no individual variables that are predictive of behavioral health care intensity within an integrated behavioral health care model.

H_a3: There are individual variables that are predictive of behavioral health care intensity within an integrated behavioral health care model.

Theoretical Framework

Andersen's Behavioral Model of Health Care Use

In order to assess and address the problem of how to optimize an integrated behavioral health care model through identifying and addressing individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model, the first step would be to explore what are the overall factors that serve as barriers toward health care utilization. One theoretical framework this study applied for gaining better understanding is Andersen's behavioral model of health care use (Andersen & Newman, 1973), which serves as a guide for understanding health care utilization among individuals (Lindsay Nour et al., 2009; Schomerus et al., 2013).

According to Andersen's behavioral model of health care use, there are three factors that explain and predict health care utilization: (a) predisposition of an individual such as demographics (age/gender), health beliefs, genetics, (b) enabling resources of an individual such as family, community, payer type, and (c) the need for an individual to receive health care that is either based on an individual's perception of need or an objective assessment made for need of services. These three factors have shown to significantly determine common barriers toward health care utilization (Andersen, 1995).

Utilizing Andersen's behavioral model of health care use, one that has many years of empirical grounding (Andersen, 2008; Schomerus et al., 2013), and is the most popular theoretical framework used for determining which individual variables serve as a barriers toward health care use (Fleury, Grenier, & Bamvita, 2015), this study built upon the model to assess the relationships and predictability between individual variables and behavioral health care utilization and intensity within an integrated behavioral health care model (Lindsay Nour et al., 2009). Identifying individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model can optimize primary care, allowing individuals to receive overall better health care as well as assist our current health care delivery system merging toward an integrated behavioral health care style of health care delivery (Lindsay Nour et al., 2009).

Integrated Theory of Health Behavior Change

According to Ryan (2009), health care providers within primary care often overestimate an individual's potential of making positive health behavior change.

According to the author, a key theory that identifies contributing factors toward health behavior change is the integrated theory of health behavior change. The integrated theory of health behavior change posits that fostering positive health behavior change within primary care is critical to the improvement of one's health. According to the theory, the way to foster health behavior change would include: (a) fostering knowledge and addressing health beliefs, (b) enhancing self-regulation skills and potential of individuals, and (c) social facilitation through family, community, and health care providers. The integrated theory of health behavior change incorporates both existing and new ways of facilitating health behavior change within primary care (Ryan, 2009), and has shown to be an effective theory for health behavior change (Ryan, Weiss, Traxel, & Brondino, 2011).

Within the integrated behavioral health care model applied at CHEMED Health Center, the integrated theory of health behavior change has its foundation set up, where BHCs are there to facilitate these three components, as BHCs foster knowledge and address health beliefs, use evidence-based interventions to assist individuals in self-regulation skills and reaching their potential, and provide social facilitation through facilitating positive social influences among an individual's family and community members (Hunter et al., 2009). Having BHCs available on-demand within primary care will for one, have the behavioral health concern addressed (Ryan, 2009), and two, reduce the stigma toward behavioral health care via conversation about the behavioral health concern (Corrigan, 2014).

Stigma toward behavioral health care can be minimized once an individual discloses his/her behavioral health concern with others. Besides for providing the individual with a sense of power and control, it also opens the door for support systems to be set in place for the individual to get the proper support he/she needs (Corrigan, 2012). Applying an integrated behavioral health care model, where individuals can express their behavioral health concerns within their primary care visit, as individuals are likely to express their behavioral health concerns with their PCP (Fries, Koop, & Beadle, 1993), which can be immediately addressed by a BHC, allows for the integrated theory of health behavior change to be applied and utilized by individuals.

Theoretical Synthesis

Applying Andersen's behavioral model of health care use and the integrated theory of health behavior change, helps better understand how to optimize an integrated behavioral health care model. Based on Andersen's behavioral model of health care use that predisposing, enabling, and need variables help predict health care use (Andersen, 1995), this study identified individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model (Lindsay Nour et al., 2009). Applying the integrated theory of health behavior change, where enhanced treatment is provided within primary care through fostering knowledge and addressing health beliefs, enhancing self-regulation skills and potential of individuals, and social facilitation through family, community, and health care providers (Ryan, 2009), an integrated behavioral health care model would be optimized through the BHCs providing behavioral health care within primary care.

Nature of this Study

This study used secondary analysis of quantitative data, utilizing the data of all 315 individuals that have come to the adult internal medicine department at CHEMED Health Center for primary care within the dates of November 1, 2013 through October 31, 2014, and have received behavioral health care from a BHC. Hypotheses were tested using four statistical methods. Descriptive statistics were used to examine the relationships between individual variables and those seen for an initial session by a BHC, independent sample *t*-tests and Chi-square tests of independence to examine the mean differences between single behavioral health care sessions and multiple behavioral health care sessions based on the individual variables, and multivariate logistic regression analysis to examine which individual variables are predictive of behavioral health care intensity (Gravetter & Wallnau, 2009).

This study used Andersen's behavioral model of health care use (Andersen, 1995), which categorizes individual variables that are predictive of health care utilization into three categories: (a) predisposing variables, (b) enabling variables, and (c) need variables. The individual variables examined among the 315 individuals included predisposing variables of gender, age, race, ethnicity, and family size, enabling variables of payer type and poverty level, and need variables of preexisting conditions of obesity, diabetes, hypertension, and tobacco use. The independent variables used in this study are the individual variables and a primary care visit. The dependent variables used in this study are an initial BHC session and follow-up behavioral health care sessions.

CHEMED Health Center

CHEMED Health Center is located in Lakewood Township, a township within Ocean County of New Jersey, which has on location an adult internal medicine department, pediatric department, dental department, and pharmacy, and is currently in the process of opening their women's health department (CHEMED Health Center, 2015). In the year 2012, CHEMED Health Center had over 73,000 patient visits and provided medical services to nearly 18,000 patients. The tremendous increase in population within Ocean County, coupled with the predominantly low-income status of the population, as well as the significant amount of stigma associated with behavioral health care (Ocean County Community Health Improvement Plan, 2015) has magnified the need to provide quality, efficient, and affordable services addressing the physical and behavioral health needs of the community.

This need is further highlighted by the multi-cultural makeup of the community which consists predominantly of Orthodox Jewish and Hispanic/Latino populations, both of which have large numbers of Medicaid enrollees and require targeted care to overcome cultural and linguistic barriers (Schick, 2014; United States Census Bureau, 2010). As the fastest growing town in New Jersey (New Jersey Department of Human Services, 2005), Lakewood Township is hard pressed to keep up with the needs of its burgeoning population. Due to limited alternatives for health care services in this area, there is a great need to provide quality and efficient health care services to Ocean County residents (Ocean County Community Health Improvement Plan, 2015). To address this need, CHEMED Health Center has adopted an integrated behavioral health care model within their adult internal medicine department to better coordinate health care to the individuals

they service through a multidisciplinary approach, as well as to expand and provide easier access of behavioral health care (Robinson & Reiter, 2007).

Using secondary analysis of quantitative data, this study identified the relationships and predictability between individual variables among individuals seen within CHEMED Health Center's integrated behavioral health care model, and their utilization and intensity of behavioral health care. Results of this study can assist the health care community, governmental agencies, and the education and training community within professional psychology to gain knowledge and be better equipped for adopting and sustaining an integrated behavioral health care model (Melchert, 2015; Rozensky, 2014). Results of this study can also assist CHEMED Health Center with its goal of expanding its integrated behavioral health care model within its pediatric and women's health departments.

Definitions

Age: the number of years that a respondent has lived.

Behavioral Health Consultant (BHC): Licensed behavioral health care providers such as clinical social workers or psychologists who work within primary care as a "member of the team," providing evidence-based behavioral health intervention to individuals in need (Gatchel & Oordt, 2003).

Behavioral health care utilization and intensity: initiation of behavioral health care when provided by BHCs within primary care, and intensity of follow-up behavioral health care sessions that individuals had after they have been seen by a BHC within primary care (Lindsay Nour et al., 2009).

Diabetes: a disease in which there are high levels of blood glucose in an individual's blood stream. This comes as a result of cells in the body not absorbing the glucose that comes out of foods, because of the depletion of the hormone called insulin which is responsible for getting the glucose inside cells. Individuals living with diabetes are at serious risk for heart disease, blindness, kidney failure, and body amputations, and is the seventh leading cause of death in the United States (Centers for Disease Control and Prevention [CDC], 2015). For this study, individuals examined were those whom have been diagnosed by a medical provider with diabetes, and carried a diagnosis of diabetes in their medical record at the time they were seen by a BHC within primary care, and were categorized as: diabetic or not diabetic.

Electronic Medical Record (EMR): an organized electronic method of sharing and processing health care information to enhance the coordination of health care services (Castillo, Martínez-Garcia, & Pulido, 2010).

Ethnicity: a social construct of "individuals' socially defined membership in putatively cultural, but sometimes also physiognomically, linguistically, geographically, or ancestrally based, ethnic groups" (Zaff, Blount, Phillips, & Cohen, 2002). For this study, ethnicity of the individuals within this study's sample population were examined through self-identification by the individuals and were categorized as: Hispanic or non-Hispanic.

Family size: number of members in the individual's family that were self-identified by the individuals.

Gender: self-identified by the individuals and were categorized as: female or male.

Hypertension: a condition where an individual's blood level is elevated, which can be determined if an individual's systolic blood pressure is higher than 140 mm Hg and/or the diastolic blood pressure level is higher than 90 mm Hg. It can also be determined by a medical provider if an individual is on high blood pressure medication, or if there has been an occurrence of two or more times in the past where an individual's systolic blood pressure was higher than 140 mm Hg and/or diastolic blood pressure level was higher than 90 mm Hg (American Heart Association, 2014). For this study, individuals examined were those whom have been diagnosed by a medical provider with hypertension, and carried a diagnosis of hypertension in their medical record at the time they were seen by a BHC within primary care, and were categorized as: hypertension or no hypertension.

Integrated behavioral health care model: behavioral health care providers work within primary care providing behavioral health care for individuals who either self-report a behavioral health concern or who have physical ailments that come about from poor health behaviors. Behavioral health care providers provide evidence-based brief intervention within the physical exam room for approximately 20-30 minutes, and schedule follow-up behavioral health care sessions as necessary (Bridges et al., 2015).

Interprofessionalism: the "development of a cohesive practice between professionals from different disciplines. It is the process by which professionals reflect on

and develop ways of practicing that provides integrated and cohesive answers to the needs of the client/family/population" (D'Amour & Oandasan, 2005, p. 9).

Obesity: an individual's weight that is higher than what is considered to be healthy based on the individual's height. Obesity is measured with Body Mass Index (BMI) and is diagnosed among those with a BMI of > 30.0 kg/m2 or > 30 pounds above what is considered to be the average of individuals within the same gender and age classification (CDC, 2014). For this study, individuals examined were those whom have been diagnosed by a medical provider with obesity, and carried a diagnosis of obesity in their medical record at the time they were seen by a BHC within primary care, and were categorized as: obese or not obese.

Payer type: the method in which individuals pay for their health care services. Payer type is documented within the individual's medical record and were categorized as: Medicaid, Medicare, uninsured, or private insurance.

Poverty level: refers to the Federal poverty level in which the United States Census Bureau (2015) defines as follows: "Following the Office of Management and Budget's (OMB) Statistical Policy Directive 14, the Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The official poverty thresholds do not vary geographically, but they are updated for inflation using Consumer Price Index (CPI-U). The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps)."

For this study, poverty level was self-identified by the individuals of this study's sample population and were categorized as: 100%, 133%, 200%, and 250%.

Primary care: the "provision of integrated, accessible health care services by an interdisciplinary team of clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community" (Institute of Medicine, 1994).

Race: a social construct of "physiognomic distinctions between people, with the concomitant assumption that social or psychological differences are rooted in biological differences" (Zaff et al., 2002). For this study, race of the individuals within this study's sample population were examined through self-identification by the individuals and were categorized as: African-American, American Indian, more than one race, or White.

Tobacco use: individuals that self-identified as individuals that use tobacco, and carried a diagnosis of tobacco use in their medical record at the time they were seen by a BHC within primary care. Tobacco use was categorized as: tobacco use or no tobacco use.

Assumptions, Scope, Delimitations, and Limitations

Assumptions

An assumption for this study was that this study's sample population would represent the general population of Ocean County, New Jersey, and would be representative of the general population of how individuals would go about behavioral health care utilization and intensity when provided within an integrated behavioral health care model. Through investigating individual variables based on the variables used in

Andersen's behavioral model of health care use which serves as a guide for understanding overall health care utilization (Andersen & Newman, 1973), an assumption for this study was that the individual variables used for this study would determine behavioral health care utilization and intensity when behavioral health care is provided within an integrated behavioral health care model (Elhai et al., 2009; Lindsay Nour et al., 2009). Another assumption for this study was that the data of the individuals collected from EMR were accurate, as data collection via EMR has shown to be a reliable source of data collection (Dean et al., 2009; Liu, Luo, Zhang, & Huang, 2013), and that the data was analyzed in an accurate manner.

Scope

The focus of this study was to examine the relationships and predictability between individual variables and behavioral health care utilization and intensity among individuals that received behavioral health care within CHEMED Health Center's integrated behavioral health care model. Specifically, this study focused on the individual variables of gender, age, poverty level, payer type, family size, race, ethnicity, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use. This study involved all individuals that have received behavioral health care by a BHC within their primary care visit at CHEMED Health Center's adult internal medicine department. This study used CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems to identify these individuals and to extract their data information necessary for this study (MicroMD, 2015).

This study analyzed the data information necessary for identifying individual variables that serve as barriers toward behavioral health utilization and intensity within an integrated behavioral health care model, with the goal of optimizing primary care and providing study results for other health care facilities intending to adopt an integrated behavioral health care model within their health care facility. Through identifying and addressing individual variables that serve as barriers toward behavioral health utilization and intensity within an integrated behavioral health care model, health care facilities will be better prepared to successfully adopt and sustain an integrated behavioral health care model within their health care facility (Lindsay Nour et al., 2009). Additionally, study results will provide important information for CHEMED Health Center to see how to go about expanding their existing integrated behavioral health care model within their other departments operating currently, as well as their upcoming department of women's health (CHEMED Health Center, 2015).

Delimitations

One of the delimitations of this study was that the Nicholson Foundation only provided funding for CHEMED Health Center toward their integrated behavioral health care model within their adult internal medicine department, and as a result, this study's sample population can only be representative of individuals coming through an adult internal medicine department for primary care, which limits the application of this study to other primary care settings such as pediatric primary care, where various dynamics and concerns are to be considered. Identification of barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model within

pediatric primary care may be unclear as according to Robin J. Henderson, director of government strategies at St. Charles Health System, the primary reason parents have been coming into their pediatric department was not for physical concerns but rather behavioral concerns (Clay, 2014), while according to Ward-Zimmerman and Cannata (2012), only somewhere between 25% to 50% of pediatric visits are related to behavioral/emotional concerns.

Additionally, according to the American Psychological Association Presidential Task Force on Integrated Health Care for an Aging Population (2008), the majority of older adults would prefer to receive behavioral health care within primary care. Such data applies to the older adult population, and would impact the data of utilization and intensity of behavioral health care when provided within adult internal medicine primary care, and would not necessarily apply to the utilization and intensity of behavioral health care when provided within pediatric primary care. Another delimitation of this study was that there are other variables, that when analyzed, may impact behavioral health care utilization and intensity within primary care such as day/time of an individual's appointment with the PCP, if an individual was accompanied by a family member or friend during their visit with the PCP, and if an individual has ever seen a behavioral health care provider before being referred to a BHC.

Limitations

This study had several limitations that are important to address. Firstly, as the integrated behavioral health care model has recently been implemented at CHEMED Health Center, there may have been negative attitudes toward the model among both the

PCPs and patients, as medical providers and consumers share disappointment in the twists and turns our current health care system has been taking (Nordal, 2012), which may have impacted the amount of BHC referrals made by the PCPs, as well as the agreeableness of the patients to be seen by a BHC.

Secondly, as medical providers are often skeptical of the effectiveness of behavioral health care as they relate to physical health (Corrigan et al., 2014), initiating such a model would take time for PCPs and BHCs to mold into a team, and build on each other's knowledge and intervention skills. As a result, among the adult internal medicine PCPs at CHEMED Heath Center, there were those that were more positive about the model to begin with, and would subsequently make more BHC referrals, while others were more skeptical at first, which would subsequently lead to less BHC referrals. This may have impacted this study's sample population of the individuals that have received behavioral health care by a BHC.

Thirdly, this study's sample population is from a specific geographic population consisting of a culturally unique population, as Lakewood Township is a multi-cultural community consisting of significant Orthodox Jewish, and Hispanic/Latino populations (Schick, 2014; United States Census Bureau, 2010a), has an annual birth rate of over 5,000 which has been a major factor in making Lakewood Township the fastest-growing town in New Jersey (New Jersey Department of Human Services, 2005). As 53% of Lakewood Township's population is at or below 200% of the Federal poverty level, and 15% are uninsured, this places the poverty rate for Lakewood Township at more than twice the poverty rate of New Jersey (United States Census Bureau, 2008). As cultural

and SES characteristics impact behavioral health care utilization and intensity (Lindsay Nour et al., 2009; Nordal, 2012), seeing an increase or decrease of behavioral health care utilization and/or behavioral health care intensity within this study's sample population may be due to the unique cultural and SES characteristics specific to the population that CHEMED Health Center provides services for.

Significance of this Study

As the United States health care system is currently set up, where various disciplines are scattered around and operate within independent settings, many individuals go misdiagnosed, are overly treated with medication, and are not looked at from a whole-person lens, rather from a symptom-related lens (Hunter et al., 2009). Finding ways to optimize health care and provide cost-effective health care, would ease the burden of health care accessibility, as well as enable people to get the appropriate health care they need without their health care needs getting overseen and/or neglected (Nardi, 2010). Having an integrated behavioral health care model, where BHCs are working on-demand together with PCPs to provide both physical and behavioral health interventions to patients, can be a first step toward shifting our current style of health care delivery by providing a "one-stop" style of health care, more cost-effective health care, more accurate diagnoses, and an interdisciplinary approach for intervention (Hunter et al., 2009).

Follow-up behavioral health care sessions with behavioral health care providers has shown to be effective for impacting various types of health behavior change, such as smoking cessation, where follow-up behavioral health care sessions are associated with

individuals quitting smoking (Fiore et al., 2000), yet, individuals would typically only follow-up with behavioral health care referrals made from primary care 10% of the time (Clay, 2014). Having BHCs working within primary care would allow individuals to receive behavioral health care on-demand, and not having to go through the extra step of making an appointment with a behavioral health care provider at another location (Hunter et al., 2009). While many may assume that the necessity for an integrated behavioral health care model is essential to optimize primary care (Glueck, 2015), and PCPs have overall positive attitudes toward the integration of BHCs within primary care (Torrence et al., 2014), the level of behavioral health care utilization and intensity within primary care is an important factor as to whether or not adopting an integrated behavioral health care model would be purposeful as well as sustainable.

The significance of this study is that it provided identification of individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model, by examining individual variables that are relational and predictive of behavioral health care utilization and intensity within an integrated behavioral health care model. This information will assist health care facilities considering adopting and sustaining an integrated behavioral health care model, so that they can identify and address individual variables serve as barriers toward behavioral health utilization and intensity within an integrated behavioral health care model. This study also provides information for health care facilities to see the benefits of an integrated behavioral health care model on both an individual and national level (Rozensky, 2014).

Social Change Implications

This study has social change implications by that which there has been a shift in climate within the United States health care style of health care delivery. Our current health care system is shifting more toward an interprofessional and integrated style of health care delivery where health care providers, governmental agencies, and the education and training community within professional psychology are investing time and money to adapt toward this shift in health care delivery (Rozensky, 2014). An integrated behavioral health care model is a good first step in achieving this shift in style of health care delivery (Wang et al., 2006).

This study has social change implications through providing empirical research toward this emerging shift in health care delivery by identifying individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model. This will better assist health care providers and health care facilities intending to adopt and sustain an integrated behavioral health care model. Moreover, assisting with this shift in health care delivery would not only more readily prepare health care providers to provide overall better health care to the individuals they service, it will also sooner reduce our current astronomical health care costs, making health care more affordable and accessible for the general population (Clay, 2014).

Summary

Individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model is a problem

because individuals will not get the appropriate health care necessary, as well as impede our current health care system merging toward an integrated behavioral health care style of health care delivery (Lindsay Nour et al., 2009). As individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model is a problem, this study is important as it identified these individual variables, which allows health care facilities to have this information when adopting such a model, how to go about sustaining such a model, and allowing for PCPs, patients, and health care administrators to be satisfied with the model's outcomes (Melchert, 2015; Rozensky, 2014). Additionally, the health care community, governmental agencies, and the education and training community within professional psychology intending to go forward with the shift in health care delivery can gain knowledge and be better equipped while going forward with an integrated behavioral health care style of health care delivery (Elhai et al., 2009; Lindsay Nour et al., 2009).

Chapter 2 discusses the origin and current use of integrated behavioral health care within primary care, as well as the specific model used at CHEMED Health Center. An outline of previous studies that relate to this study, as well as the literature search strategy for this study are delineated. The theoretical framework guiding this study are introduced and described as it relates to this study. There is an explanation of how although there are existing studies showing individual variables based on Andersen's behavioral model of health care use that predict behavioral health care utilization, they have not addressed how these individual variables would predict intensity of behavioral health care as well as

behavioral health care utilization and intensity when within an integrated behavioral health care model.

Chapter 2: Literature Review

Barriers affecting individuals' utilization and intensity of behavioral health care is a problem for individuals and society (Rozensky, 2014). Quality health care is compromised as behavioral health concerns and health behavior change necessary for overall physical health are not addressed (Hunter et al., 2009). Additionally, the United States health care system's movement toward an integrated behavioral health care style of health care delivery is impeded (Rozensky, 2014). The purpose of this study using secondary analysis of quantitative data was to address the problem of individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model. This is important to address as primary care is a major gateway for individuals in need of behavioral health care, and 70% of medical visits are behavioral health related (Bryan et al., 2009), and 70% of psychotropic medications are prescribed by medical providers other than behavioral health care providers (Hunter et al., 2009).

As Rozensky (2014) mentions, the Patient Protection and Affordable Care Act of 2010 will extend Medicaid coverage for all families that fall within 133% of the Federal poverty level. With this shift, it is predicted that there will be an increase of primary care visits anywhere between 15.07 to 24.6 million a year. Additionally, an estimated 3.7 million individuals with severe mental illness will be provided Medicaid coverage, as the Patient Protection and Affordable Care Act of 2010 will not exclude coverage for mental illness even though it falls under the category of a preexisting condition. This shift will impact both the medical and behavioral health care communities because the majority of

individuals treated for a behavioral health concern takes place within primary care (Wang et al., 2006).

As there is a lot of emphasis on integrating health care services, it necessitates for primary care and behavioral health care to shift from working as independent professions, to working in a more interprofessional and integrated system (Heath, Wise Romero, & Reynolds, 2013). This way, individuals can receive better coordinated care. Additionally, according to the Institute of Medicine (2004, as cited in Melchert, 2015), nearly half of all morbidity and mortality in the United States comes as a result of poor health behaviors. Having an integrated behavioral health care model where behavioral health care providers are embedded within primary care and are providing behavioral health care for individuals as part of the medical team can decrease these morbidity and mortality rates (Advisory Committee on Interdisciplinary, Community-Based Linkages, 2010). Accordingly, having BHCs facilitate health behavior change, can optimize the health care individuals receive within primary care.

This quantitative secondary analysis study identified individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care setting. I investigated the relationships and predictability between individual variables and behavioral health care utilization and intensity. Results of this study can assist individuals to receive the appropriate health care necessary through identifying barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model (Lindsay Nour et al., 2009). Additionally, through identifying individual variables that serve as barriers toward

utilization and intensity of behavioral health care within an integrated behavioral health care model, individuals can receive expanded and earlier access to behavioral health care. As an integrated behavioral health care model provides a "one-stop" visit for health care (Pomerantz, Kearney, Wray, Post, & McCarthy, 2014), helps battle health care costs by treating individuals on a multidisciplinary level, and helps reduce the stigma associated with behavioral health care (Nardi, 2010), identifying barriers toward receiving behavioral health care within the model will be beneficial so that individuals can receive optimized health care.

This chapter discusses the origin and current use of integrated behavioral health care within primary care as well as the specific model used at CHEMED Health Center. The literature search strategy is described in this chapter, along with a synopsis of the existing literature and the theoretical framework of this study. In particular, I highlight the many studies that have found Andersen's behavioral model of health care use (Andersen & Newman, 1973) to be a sound model for predicting behavioral health care utilization based on individual variables (Andersen, 1995; Fleury et al., 2015; Schomerus et al., 2013). Researchers have not yet addressed whether these individual variables are relational and predictive of general behavioral health care intensity as well as behavioral health care utilization and intensity within an integrated behavioral health care model (Elhai et al., 2009; Lindsay Nour et al., 2009). This study aims to examine individual variables that are relational and predictive of general behavioral health care intensity as well as behavioral health care utilization and intensity within an integrated behavioral health care model.

Literature Search Strategy

To access literature on integrated behavioral health care within primary care, I primarily searched EBSCO Host, which is available through Walden University's Library. EBSCO Host encompasses several psychological and medical databases, including PsychINFO, PsycARTICLES, PsychBOOKS, SocINDEX, MEDLINE, and Political Science Complete. Google Scholar Search was also used to locate various peer-reviewed articles that pertain to the fields of psychology and medicine as well as studies that address the integration of psychology and medicine.

Various government websites such as the United States Census Bureau and the World Health Organization were used as well. Independent websites were also utilized as they pertained to this study including the website for CHEMED Health Center, Cherokee Health Systems, and the Nicholson Foundation. There were multiple books used as reference for this study such as Integrated Behavioral Health in Primary Care: Step-By-Step Guidance for Assessment and Intervention (Hunter et al., 2009).

The search engine words used for this study included *integrated behavioral health care, primary care*, *health behaviors*, *brief interventions*, *health care barriers*, *psychotherapy attitudes*, *socioeconomic status*, *behavioral health and primary care*, and *mental health service use*. Using these keywords, the databases provided resources applying to this study including the integrated behavioral health care model, utilization and intensity of behavioral health care, effective behavioral health care delivery, and effective treatment models within primary care. With the exception of some references,

only peer-reviewed studies, and studies that were published within 5 years of this study have been used as reference. My emphasis on recent research is consistent with the dissertation research guidelines set forth by Walden University (Walden University, 2015a).

Overview of the Integrated Behavioral Health Care Model

Many researchers have studied and published research on the integrated behavioral health care model (e.g., Bridges et al., 2015; Hunter et al., 2009; Robinson & Reiter, 2007). This is a model in which behavioral health care providers are embedded within primary care settings and provide behavioral health care to patients in need of behavioral health care. A patient is referred to a behavioral health care provider by the PCP if the patient either reports a behavioral health concern as well as if the PCP feels that the patient's poor health behaviors are impacting the patient's overall physical health, to which at that point, the PCP would call in a behavioral health care provider. The PCP would refer to the behavioral health care provider as a BHC to reduce the stigma many have toward behavioral health care providers, as well as to emphasize the collaborative and interprofessional care for the patient, and introduce the BHC with a "warm-handoff" explaining to the patient how the BHC is a "member of the team" and will be providing collaborative care as a "member of the team" (Gatchel & Oordt, 2003).

The BHC would then conduct a brief session that would typically take place within the physical exam room. Sessions tend to be 20-30 minutes in length, providing evidence-based behavioral health care interventions tailored towards the fast paced style

of primary care. After the session, the BHC would provide recommendations for follow-up behavioral health care sessions. Based on the assessment of the BHC, the BHC would either recommend follow-up behavioral health care sessions with the BHC (which would occur less frequently compared to traditional behavioral health care), traditional behavioral health care sessions, or psychiatric sessions. The BHC would then provide a brief summary to the PCP of what was discussed as well as the applicable behavioral homework that was assigned, so that the PCP can follow through with the patient upon their next scheduled appointment. Patient collaboration among PCPs and BHCs have also shown to enhance the interprofessional relationship between PCPs and BHCs (Alexander et al., 2010; Bridges et al., 2015; Corrigan, Druss, & Perlick, 2014; Corso et al., 2012; Hunter et al., 2009; Krupnick & Melnikoff, 2012; Ward-Zimmerman & Cannata, 2012).

Origins of Integrated Behavioral Health Care within the United States

While an integrated behavioral health care style of health care delivery carries a long history outside of the United States, it has recently become an increasingly popular norm of health care delivery within the United States, especially given the legislative emphasis noted within the Patient Protection and Affordable Care Act of 2010 (Rozensky, 2014). The origin of integrated behavioral health care in the United States began within the Mayo Clinic during the late 1800's, when Dr. Mayo's sons formulated a team-approach style of care. Seeing the benefits of an integrated behavioral health care style of health care delivery, Kaiser Permanente became the first organization to provide prepaid behavioral health care benefits in the 1950's, which resulted in a 65% decrease in

overall medical expenses. Since the 1950's, health care providers have witnessed the necessity for integration and application of numerous disciplines while providing overall better health care, prompting many organizations to apply an integrated behavioral health care style of health care delivery. One such organization is the Department of Veterans Affairs, which is currently the largest organization to utilize an integrated behavioral health care style of health care delivery (Melchert, 2015).

CHEMED Health Center's Patient Population and Health Care Services

CHEMED Health Center opened in February of 2008 as a division of the Lakewood Resource & Referral Center (LRRC) to offer health care and education to Ocean County of New Jersey. CHEMED Health Center is a FQHC dedicated to providing primary health care, disease prevention, health education, case management services, and social service referral to all residents of their area to promote and help maintain healthier lifestyles. CHEMED Health Center provides comprehensive preventive and primary care, dental and behavioral health services for adults and children, as well as health education and nutrition services. CHEMED Health Center's mission is to provide a comprehensive, integrated system of health care to optimize the physical and mental well-being of individuals and families within the community by delivering health education, preventative, and treatment services. CHEMED Health Center makes their services available to all individuals regardless of their ability to pay, participates in all Medicaid, Medicare, and private insurance coverage, and provides a sliding fee scale option for uninsured individuals (CHEMED Health Center, 2015).

The target population of CHEMED Health Center is Lakewood Township, which the United States Census Bureau (2010a) has estimated for the year of 2010 having a total population of 92,843, a figure that represents a 54% increase since the year of 2000, where the population was at 60,352. The Lakewood Township service area is federally designated as a Medically Underserved Area (MUA) with the closest medical services outside of the MUA being in Monmouth County. Over 85% of CHEMED Health Center's patients currently reside in Lakewood Township, but residents from neighboring townships are also serviced at CHEMED Health Center.

Cherokee Health Systems

Similar to CHEMED Health Center's integrated behavioral health care model, Cherokee Health Systems, located in Knoxville, Tennessee, is a health care clinic that utilizes an integrated behavioral health care model within its departments of adult internal medicine, pediatrics, and women's health. Research supports Cherokee Health Systems as an effective integrated behavioral health care model that other clinics can adopt within their own health care facility (Cherokee Health Systems, 2015). Adopting such a model would involve building an interdisciplinary team, hiring and training that team, developing sustainable workflows, identifying evidenced-based interventions to include within a clinical pathway, and establishing processes to ensure sustainment of an integrated behavioral health care model (Mullin & Funderburk, 2013).

CHEMED Health Center implemented their integrated behavioral health care model within their adult internal medicine department based on the current model used at Cherokee Health Systems in which BHCs employed by CHEMED Health Center have

attended Cherokee Health Systems' Onsite Academy Training which provided an overview of the integrated behavioral health care model used at Cherokee Health Systems, description of the BHC role, implementation instruction, practitioner case studies, and administration oversight and financing information (Cherokee Health Systems, 2015). Additionally, CHEMED Health Center and Cherokee Health Systems had monthly administrative phone conferences addressing the progress and barriers implementing their integrated behavioral health care model, as well as BHC support calls where Cherokee Health Systems provided monthly support calls to the BHCs at CHEMED Health Center to review techniques and address any clinical or operational challenges. Adopting Cherokee Health Systems' evidence-based integrated behavioral health care model allowed the EMR data that emanated from the integrated behavioral health care model at CHEMED Health Center (MicroMD, 2015) to accurately assess utilization and intensity of behavioral health care within an integrated behavioral health care model.

Nicholson Foundation

The Nicholson Foundation is a foundation dedicated toward addressing the complex needs of vulnerable populations in New Jersey's urban areas by encouraging the reform of health and human services delivery systems (Nicholson Foundation, 2014). CHEMED Health Center has received funding from the Nicholson Foundation to implement their integrated behavioral health care model for a full year within their adult internal medicine department, which included the staffing of 2 part-time BHCs to work

with the adult internal medicine PCPs. Funding was provided beginning November 1, 2013 through October 31, 2014.

Project I.N.S.P.I.R.E.

Integrating Networks and Systems to achieve Patient health care Integration Reform Effectively (INSPIRE) is the name of the integrated behavioral health care model used at CHEMED Health Center. CHEMED Health Center has collaborated with Cherokee Health Systems to create an integrated behavioral health care model based on the model used there. CHEMED Health Center's goal with project INSPIRE is to provide enhanced health care delivery within their existing primary care system, as well as to expand their capacity to deliver behavioral health care to the individuals they service.

CHEMED Health Center has gone with the assumption that project INSPIRE will help provide overall better health care for CHEMED Health Center's patients by making behavioral health care more accessible to patients and removing various barriers facing patients in their attempts to receive behavioral health care (Robinson & Reiter, 2007), while also enhancing primary care practice, as behavioral symptoms often contribute to or exacerbate medical conditions, and medical symptoms often lead to or can present as psychological diagnoses (Hunter et al., 2009). Through this integrative approach, CHEMED Health Center's adult internal medicine PCPs will get a better understanding of the needs of their patients and formulate a more effective and appropriate treatment plan that will result in a more healthy and functional lifestyle for patients (Kenkel et al., 2005).

CHEMED Health Center's Integrated Behavioral Health Care Model

Chemed Health Center's integrated behavioral health care model is one in which CHEMED Health Center's adult internal medicine PCPs refer a patient to a BHC if a patient self-reports a behavioral health concern directly to their PCP, or if their PCP determines that the patient can use behavioral health care to address poor health behaviors that are impacting the patient's physical health. In both situations, the PCP will tell the patient that he/she has a "member of the team" available to provide behavioral health care to address their need. After receiving the patient's approval, the PCP will then notify a BHC through Spark, a computer-based instant messaging program (Ignite Realtime, 2015) that allows CHEMED Health Center staff to instant message each other, indicating that an individual needs to be seen for a behavioral health concern.

The BHC will enter the physical exam room and provide an introduction as well as conduct a co-interview with the PCP. After the initial introduction and co-interview, the PCP will leave the room to treat other patients while the BHC will provide an appropriate evidence-based brief intervention tailored toward the behavioral health concern presented by the patient. Once the BHC is finished treating the individual, the BHC will provide brief feedback to the PCP so that the PCP would be informed of the behavioral health intervention provided, which is often accompanied with behavioral homework assigned to the individual, so that the PCP can follow-up with the individual's progress at their next scheduled appointment (Ward-Zimmerman & Cannata, 2012).

A brief intervention may not be sufficient for some patients who require more long-term behavioral health care (Hunter et al., 2009). For those patients, the BHC will

have the option of making a referral to CHEMED Health Center's behavioral health department for the individual to receive weekly face-to-face traditional behavioral health care sessions from one of the 26 licensed behavioral health care providers currently employed at CHEMED Health Center. Additionally, the BHC will also have the option to refer a patient to one of the two psychiatric nurse practitioners currently employed by CHEMED Health Center if it is determined that the patient's specific behavioral health needs would be best addressed with psychotropic medication in addition to or in lieu of weekly traditional behavioral health care sessions (CHEMED Health Center, 2015).

Benefits of Integrated Behavioral Health Care within Primary Care

There has been a lot of support regarding the importance and effectiveness of an integrated behavioral health care model. Benefits of an integrated behavioral health care model include its cost-effectiveness within health care, overall better health care, and the expansion and accessibility of behavioral health care to the general population (Bryan et al., 2009; Pomerantz et al., 2014; Robinson & Reiter, 2007; Vuorilehto, Merartin, & Isometsa, 2006). An integrated behavioral health care model decreases the complexity of care, increases patient and provider satisfaction, and has shown to be effective for treating behavioral health concerns (Angantyr, Rimner, Nordén, & Norlander, 2015).

Although there has been a lot of support and evidence-based studies promoting an integrated behavioral health care style of health care delivery, there has been slow progress among health care facilities incorporating such a style of health care delivery model. This may be due to the lack of knowledge the health care community has on the benefits of an integrated behavioral health care style of health care delivery (Gunn &

Blount, 2009; Lynch, Askew, Mitchell, & Hegarty, 2012). Assisting the health care community become knowledgeable of how an integrated behavioral health care style of health care delivery allows providers to work collaboratively to achieve a combined diagnosis, prognosis, and treatment plan for individuals, can assist the health care community move toward this emerging style of health care delivery, especially by that which as to date, opportunities of an integrated behavioral health care style of health care delivery outweigh their challenges (Bridges et al., 2015).

Beneficial Impact for PCPs

Patients treated within primary care often feel comfortable reporting behavioral health concerns to their PCP while they are getting treated in the physical exam room (Hunter et al., 2009). Without an integrated approach, behavioral health concerns within primary care can bring along many challenges for both patients presenting behavioral health concerns as well as for the PCPs treating these patients (Bray, Frank, McDaniel, & Heldring, 2004). When behavioral health concerns are reported within primary care, PCPs need to spend extra consultation time to deal with the behavioral health concern which limits the number of patients PCPs can see, which decreases health care capacity to be delivered for other patients (James & Folen, 2005). Additionally, without an integrated behavioral health care approach, patients often times do not receive appropriate overall health care. This can be due to that which physical symptoms that patients present to their PCP often stem from a behavioral health concern and goes undiagnosed (Hunter et al., 2009). Moreover, even if a PCP accurately diagnoses a patient's behavioral health concern and makes a referral, there is still concern that the

patient will not follow up with the treatment, and as a result, the patient's behavioral health concern may be neglected (Clay, 2014).

Beneficial Impact for Primary Care Patients

Studies show how 70% of primary care patients who receive behavioral health care within an integrated behavioral health care model see significant improvement, with improvement seen as early as the second session (Corso et al., 2012), and the improvement lasting up to 2 years post-treatment (Ray-Sannerud et al., 2012). BHC's primarily focus on improving individual functioning rather than just symptom alleviation, so that the individual's overall health care is addressed. BHC sessions are shorter than traditional behavioral health care sessions and follow-up behavioral health care sessions are more spread out, providing expanded and easier access of behavioral health care to individuals in need (Robinson & Reiter, 2007). Benefits of having BHCs working within primary care are to (a) ensure that individuals follow through with their PCP's referral to behavioral health care, (b) reduction in stigma toward behavioral health care as BHCs are considered to be a "member of the team," and (c) individuals get overall better health care as a result of better coordination of various health care providers working with the individuals they service (Kenkel, Deleon, Mantell, & Steep, 2005).

In addition, living within our busy world with competing responsibilities, the convenience of "one-stop" care is essential for many individuals (Coons, Morgenstern, Hoffman, Striepe, & Buch, 2004). Individuals across ethnic groups and social classes are often reluctant to seek behavioral health care treatment (Gary, 2005). When a PCP, with whom primary care patients already have a trusting relationship with, introduces a BHC

as a “member of the team,” they may be more receptive to a consultation, compared with making an appointment with an unknown behavioral health care provider at an unfamiliar location (Krupnick & Melnikoff, 2012). When behavioral health care is delivered within an integrated behavioral health care model, individuals can consequently avoid the stigma all too often associated with traditional outpatient behavioral health/psychiatric treatment settings. Additionally, when multiple services are provided within one onsite location, there are often fewer geographic, cultural, and linguistic barriers, which further reduces disparities in receiving behavioral health care (Coons et al., 2004).

Battling Stigma toward Behavioral Health Care

Within many families in the United States, there is stigma associated with individuals with a behavioral health care condition, as well as stigma associated with receiving behavioral health care (Hinshaw, 2005). Moreover, behavioral health care providers themselves serve as an object of stigma, as behavioral health care providers are considered to be ineffective and by some as even harmful. This further increases the stigma toward behavioral health care, which is a problem, as neglecting behavioral health care needs impacts not only those individuals with a behavioral health condition, but also their health care providers, support system, and other resources made available by the community. Finding ways to diminish the stigma toward behavioral health care would be beneficial to minimize the impact it has on multiple resources (Corrigan, Druss, & Perlick, 2014).

Having an integrated behavioral health care model, where behavioral health care providers are referred to as BHCs and not as psychologists or clinical social workers, decreases the negative association of the behavioral health care being provided (Krupnick & Melnikoff, 2012). Additionally, many perceive brief interventions to be less stigmatizing than they perceive traditional behavioral health care intervention (Strosahl, Robinson, & Gustavsson, 2012). As many medical providers have poor attitudes toward behavioral health care providers (Henke, Chou, Chanin, Zides, & Scholle, 2008), this may exacerbate the poor attitude individuals already have toward behavioral health care. Having behavioral health care providers collaborating within primary care, provides the opportunity for both discipline groups to educate each other, facilitating broader knowledge toward patient care, and enhancing interprofessionalism while treating patients (Ward-Zimmerman & Cannata, 2012).

Health Care Cost Offset

Studies have consistently shown how providing integrated behavioral health care within primary care would lower the overall cost of our health care system (Clay, 2014; Hunter et al., 2009; Melchert, 2015; Nardi, 2010). For instance a meta-analysis study using 91 studies found there to be a 20% cost savings among health care centers that integrated behavioral health care within their practice (Chiles, Lambert, & Hatch, 1999). According to Clay (2014), integrating behavioral health care within primary care, can lower annual health care costs for patients by approximately $900 per patient.

After reviewing numerous data collected from multiple studies on the cost-effectiveness of behavioral health care provided in collaboration with other health care interventions, Blount et al. (2007) found that behavioral health care was especially cost-effective when provided within primary care. According to a Milliman Report brought about by the American Psychiatric Association, when behavioral health care is integrated within primary care, it can save between 26 and 48 billion dollars for patients with comorbid medical conditions (Melek, Norris, & Paulus, 2014). Such studies indicate the significant health care cost offset to be gained through integrating behavioral health care within primary care, which is achieved through an integrated behavioral health care model.

Patient Protection and Affordable Care Act of 2010

The United States has been facing significant challenges within their health care system both economically and poor health care outcomes compared to other countries (Melchert, 2015). According to the World Health Organization (WHO; 2008), having an integrated behavioral health care style of health care delivery would be the best way for the United States to enhance its current health care system, and achieve a better health care system similar to that of other countries. For this among other reasons, the passing of the Patient Protection and Affordable Care Act of 2010, the largest expansion within the United States government health care system since the 1960s when Medicaid and Medicare passed into law, has placed strong legislative emphasis on integrated behavioral health care within primary care. As achieving an integrated behavioral health care style of

health care delivery would be a slow process involving shifts in politics, financial distribution, and restructuring of operations within health care facilities (Heath et al., 2013), this study aimed to provide data results that would assist our current health care system merge toward an integrated behavioral health care style of health care delivery.

Need for Integrated Behavioral Health Care

New Jersey

The State of New Jersey is within the top ten states within the United States in need of behavioral health care per capita. There is a greater demand for behavioral health care than there are services (Carrier Clinic, 2013). According to Nielsen, Langner, Zema, Hacker, and Grundy (2012), the State of New Jersey is in need of an integrated behavioral health care style of health care delivery as the State of New Jersey had a 40% decrease in emergency room visits when the individuals that would utilize the emergency room frequently received behavioral health care within a facility that had an integrated behavioral health care model in place.

Ocean County

As per data collected for year 2012, Ocean County has a population of 580,470 where 93.2% are White, 8.6% are Hispanic or Latino, 3.4% are African-American, and 1.9% are Asian. Within Ocean County, there has been an 86.5% increase of emergency room visits that were directly related to a behavioral health condition from 2007 to 2011, and 6.5% of Ocean County adults had a behavioral health condition that brought them to

the emergency room for treatment. Additionally, 60.7% of individuals suffering from depression were seen by general practitioners in 2011, and not by behavioral health care providers (Carrier Clinic, 2013). According to the New Jersey Census Data (2012, as cited by Carrier Clinic, 2012), 9.5% of persons in Ocean County fall below the national poverty level.

Lakewood Township

The Lakewood Township service area is federally designated as an MUA with the closest medical services outside of the MUA being in Monmouth County. Lakewood Township has a multi-cultural population consisting of significant Orthodox Jewish, and Hispanic/Latino populations (Schick, 2014; United States Census Bureau, 2010a). The annual birth rate of over 5,000 has been a major factor in making Lakewood Township the fastest-growing town in New Jersey (New Jersey Department of Human Services, 2005). Lakewood Township is predominantly low-income, as 53% of Lakewood Township's population is at or below 200% of the Federal poverty level and 15% are uninsured (United States Census Bureau, 2008). These figures indicate how within the same time period, Lakewood Township's poverty rate has been more than twice the poverty rate among other townships within the State of New Jersey.

Summary of the Integrated Behavioral Health Care Model and its Application to CHEMED Health Center

In summary, this study used the data of project I.N.S.P.I.R.E., a project in which CHEMED Health Center has adopted an integrated behavioral health care model that

mirrors the integrated behavioral health care model used at Cherokee Health Systems. As an integrated behavioral health care model is a beneficial form of health care delivery, and is increasingly becoming a standard form of health care delivery, individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model is a problem (Lindsay Nour et al., 2009). Through using existing data that emanated from the integrated behavioral health care model operating at CHEMED Health Center, the secondary analysis of quantitative data used in this study aimed to reduce the problem through identifying the relationships and predictors among individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model.

Specifically, the individual variables used in this study included gender, age, poverty level, payer type, family size, race, ethnicity, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use. These individual variables have been chosen based on the theoretical framework of Andersen's behavioral model of health care use (Andersen, 1995), which is discussed in the theoretical framework section below. The individual variables were analyzed in regard to their relationship and predictability of utilization and intensity of behavioral health care within an integrated behavioral health care model.

As explained in the theoretical orientation section below, the integrated theory of health behavior change provides a treatment approach within primary care that would not only initiate health behavior change in individuals, but also enable individuals to sustain health behavior change (Ryan et al., 2011). As individuals are more likely to sustain

health behavior change when behavioral health care is provided within an integrated behavioral health care model (Hunter et al., 2009), health care facilities that have an integrated behavioral health care model in place would be beneficial for providing overall better health care to the individuals they service. Results of this study can assist other health care facilities intending to adopt an integrated behavioral health care model within their health care facility.

This study is especially important for Ocean County, New Jersey. As the population within this study are from Ocean County, New Jersey, this can allow other health care facilities within Ocean County, New Jersey to adopt such a model where primary care patients can receive behavioral health care within primary care. Results of this study can assist in decreasing the high number of emergency room visits that are behavioral health related within Ocean County, New Jersey, as well as expand behavioral health care within the State of New Jersey, where there is a greater demand for behavioral health care than there are services (Carrier Clinic, 2013).

Theoretical Framework

Andersen's Behavioral Model of Health Care Use

There have been multiple national studies conducted that aimed toward identifying individual variables are predictive of behavioral health care utilization, to which many of these studies incorporate Andersen's behavioral model of health care use which categorizes individual variables that are predictive of health care utilization (Barrett &Young, 2012; Elhai & Ford, 2007; Fleury, Grenier, & Bamvita, 2015; Lindsay Nour et al., 2009; Wang et al., 2005). As Andersen and Newman (1973) note, there have

been many attempts to provide frameworks explaining predictors of health care utilization such as social group structures, disease characteristics, and economic demand analysis, yet, Andersen's behavioral model of health care use has shown to be ideal for operationalizing social survey research. The rational for selecting Andersen's behavioral model of health care use as a model that guided this study is because of its many years of empirical support (Schomerus et al., 2013), and because it is currently the most popular model used to predict health care use (Fleury et al., 2015).

The underpinnings of Andersen's behavioral model of health care use is that there are a sequence of conditions that impact health care utilization. Andersen categorizes individual variables among those seeing health care into three groups: (a) predisposing variables, (b) enabling variables, and (c) need variables. Multiple studies using Andersen's behavioral model of health care use have applied the model to predict behavioral health care utilization. Outcomes of these studies (Elhai & Ford, 2007) found higher utilization of behavioral health care to be among females, younger individuals, White individuals, and higher education (predisposing variables), unemployment, urban residence, individuals with health insurance coverage (enabling variables), individuals with mood disorders, substance abuse, and anxiety disorders (need variables).

Predisposing Variables

According to Andersen's behavioral model of health care use, predisposing variables include demographic, social structure, and beliefs (Andersen & Newman, 1973). Variables within this category have shown to be predictive of health care utilization (Elhai & Ford, 2007). For this study, the predisposing variables used to asses

behavioral health care utilization and intensity within an integrated behavioral health care model included gender, age, race, ethnicity, and family size, which fall into the predisposing variable category of Andersen's behavioral model of health care use (Lindsay Nour et al., 2009).

Enabling Variables

According to Andersen's behavioral model of health care use, enabling variables include family and community enabling variables. This would include an individual's payer type as well as an individual's poverty level which determines an individual's access to health care (Andersen, 2008). For this study, the enabling variables used to asses behavioral health care utilization and intensity within an integrated behavioral health care model included an individual's payer type and poverty level as defined according to the Federal poverty level.

Need Variables

According to Andersen's behavioral model of health care use (Andersen & Newman, 1973), need variables include both an individuals' perceived need level for health care use, as well as an individuals' evaluated need level which refers to an individuals' health care providers' evaluated need level of the individual. The more perceived or evaluated level of need an individual has regarding their illness, the more likely they are to utilize health care services. Fikretoglu, Elhai, Liu, Richardson, and Pedlar (2009) found that need variables are stronger and more consistent predictors of health care use than are predisposing and enabling variables. For this study, the need variables used to assess behavioral health care utilization and intensity within an

integrated behavioral health care model included preexisting conditions of obesity, diabetes, hypertension, and tobacco use. Analyzing such data would be unique even with Andersen's behavioral model of health care use, as Andersen did not include preexisting conditions as part of need variables within his model (Andersen, 1995).

Integrated Theory of Health Behavior Change

The integrated theory of health behavior change is an effective theory for promoting and maintaining health behavior change within primary care (Ryan et al., 2011). The theory is founded on the principle that while there are many evidence-based interventions for health behavior change, there lacks a concrete theory in regard to promoting and maintaining health behavior change in individuals (Ryan, 2009). For instance, theories of health behavior change that focus on health beliefs such as the Health Belief Model or the Health Promotion Model have shown to be effective for the initiation of change, yet not for the health behavior change to be sustained. Such a trend for health behavior change seems to be across the board like maintaining healthy eating habits and smoking cessation, where there is typically initial progress toward health behavior change, and then a relapse occurring soon after (Institute of Medicine, 2001).

The integrated theory of health behavior change aims to provide a treatment approach within primary care that would not only initiate behavior change in individuals, but also enable individuals to sustain change in their behaviors. It is for this reason that the integrated theory of health behavior change was designed as a midrange theory, which is advantageous by that which it provides broad information based on various circumstances and phenomenon, and is more concrete and pragmatic than other types of

theories (Rodgers, 2005). The theory has been constructed through combining numerous evidence-based theories of health behavior change, and posits that the way to go about promoting and maintaining health behavior change within primary care is through: (a) fostering knowledge and addressing health beliefs, (b) enhancing self-regulation skills and potential of individuals, and (c) social facilitation through family, community, and health care providers (Ryan, 2009).

An integrated behavioral health care model is beneficial for individuals to receive overall better health care, as well as for the work flow within primary care to run smoothly so that medical care can be more accessible to others. This is due largely to that which PCPs report not having enough time engaging patients through behavioral methods such as motivational interviewing to encourage health behavior change (Tully, Cupples, & Young, 2004). Having BHCs available on-demand within primary care to provide behavioral health care, which would include fostering knowledge and addressing health beliefs, enhancing self-regulation skills and potential of individuals, and social facilitation through family, community, and health care providers (Hunter et al., 2009), would be a most effective way of promoting and sustaining health behavior change. The rational for selecting the integrated theory of health behavior change as a model that guided this study is because the theory is key to this study which investigated the utilization and intensity of behavioral health care where individuals are provided with interventions mirroring those within the integrated theory of health behavior change, and has shown to be effective for promoting and maintaining health behavior change within primary care (Ryan et al., 2011).

Theoretical Synthesis

This study utilized Andersen's behavioral model of health care use and the integrated theory of health behavior change as the theoretical frameworks for this study. Due to its empirical support over the years, and its popularity for predicting health care use (Fleury et al., 2015; Schomerus et al., 2013) Andersen's behavioral model of health care use has been chosen as a as a model that guided this study, as it provides the categories of individual variables that are most likely to predict health care utilization. These categories are categorized as predisposing, enabling, and need variables (Andersen, 1995). The individual variables used in this study were based on those categories. The individual variables used in this study included gender, age, poverty level, payer type, family size, race, ethnicity, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use.

As the purpose of this study was to address the problem of individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model, this study examined the relationships and predictability between individual variables and utilization and intensity of behavioral health care within an integrated behavioral health care model. Results of this study help optimize the use of an integrated behavioral health care model by applying the integrated theory of health behavior change which proposes that individuals treated within primary care can better sustain health behavior change through fostering knowledge and addressing health beliefs, enhancing self-regulation skills and potential of individuals,

and social facilitation through family, community, and health care providers (Hunter et al., 2009; Ryan, 2009).

Review of Methodology

This study used secondary analysis of quantitative data to analyze relational, mean difference, and predictive variable characteristics between individual variables and behavioral health care utilization and intensity within an integrated behavioral health care model. The secondary data analyzed in this study was extracted from CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems. MicroMD EMR provided the individual variables of this study's sample population, and MicroMD Practice Management Systems' color coding system provided identification of the various types of behavioral health care sessions individuals had, which included an initial session with a BHC, subsequent sessions with a BHC, traditional behavioral health care sessions, and psychiatric sessions (MicroMD, 2015).

According to Greenhoot and Dowsett (2012), secondary data analysis is a most powerful and effective tool to bring forth empirical data, especially in studies similar to this study, where there are multiple hypotheses that involve multiple variables. Based on national and international changes as to how research is funded and made accessible, the use of secondary data analysis for research has become increasingly popular in recent years (Whiteside, Mills, & McCalman, 2012). Benefits of using secondary data analysis are widely established, and the pros of using secondary data analysis outweigh the limitations that come along with secondary data analysis (Nicholas, 2015). This especially holds true for this study which used secondary data that was extracted from

EMR, as EMR collect and store data safely, making its data reliable (Dean et al., 2009; Liu et al., 2013). As recommended with secondary data analysis, initial care was taken to have a well thought-out theoretical model as well as the types of variables that would be needed for the study before accessing the data (Greenhoot & Dowsett, 2012).

There are multiple analytical methods one can use while using secondary data including descriptive analysis, interpretive analysis, comparative analysis, verification, reanalysis of data, and integration through analysis of research design and setting. This study used interpretive analysis as its secondary data analytical method for analyzing the data. Using interpretive analysis allows researchers to identify larger meaning than the underlying data, and draw research results from that meaning (Stewart, 2012). As it applies to this study, there is significant existing data regarding individual variables that are predictive of utilization of health care services, yet, there is limited research regarding individual variables that are relational and predictive of behavioral health care intensity as well as behavioral health care utilization and intensity within an integrated behavioral health care model (Andersen, 1995; Elhai & Ford, 2007; Lindsay Nour et al., 2009). Using interpretive analysis through the secondary data collected, this study built on those previous studies by applying the data to identify individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model.

According to Andersen and Newman (1973), the most efficient way of predicting health care utilization are by analyzing their predisposing, enabling, and need variables. This would apply as well to behavioral health care utilization and behavioral health care

intensity (Lindsay Nour et al., 2009). This study incorporated the framework of thinking that the specific individual variables within these categories would be relational and predictive of behavioral health care utilization and intensity within an integrated behavioral health care model. The specific individual variables within these categories that were analyzed within this study included gender, age, poverty level, payer type, family size, race, ethnicity, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use. Below is a description of these specific individual variables, where they are categorized within predisposing, enabling, and need variables, which are the categories set forth by Andersen's behavioral model of health care use (Andersen, 2008).

Review of Specific Study Health Care Variables

Predisposing Variables: Gender, Age, Race, Ethnicity, and Family Size

Elhai and Ford (2007) provide outcomes of previous studies that analyzed individual variables of gender, age, and race. The studies found higher utilization of behavioral health care among females, younger individuals, and White individuals. Waheed, Hughes-Morley, Woodham, Allen, and Bower (2015) provide outcomes of previous studies showing the underutilization of behavioral health care among ethnic minorities due to barriers that include stigma, mistrust based on cultural beliefs, and language barriers. Fleury et al. (2015) found higher utilization of behavioral health care among those with a smaller family size, as individuals with a larger family size often do not have the same leisure of going for health care services as do individuals with a smaller family size.

Enabling Variables: Payer Type and Poverty Level

Studies have shown higher utilization of behavioral health care among individuals that have a better payer type as is the case with some health insurances. This is due to that which individuals lacking a good payer type would need to use their financial resources in order to receive behavioral health care **(**Price, Davidson, Ruggiero, Acierno, & Resnick, 2014). According to Alvidrez, Shumway, Morazes, and Boccellari (2011), studies that have found underutilization of behavioral health care among African-Americans, can be directly associated by that which they are less likely to have health insurance as do White individuals.

An individual's poverty level has shown to be directly associated with behavioral health care utilization. Individuals within a low poverty level, underutilize behavioral health care due to barriers that include lack of transportation, needing child care for appointment, and limited hours made available by clinics (Borschuk, Jones, Parker, & Crewe, 2015). Additionally, individuals with a low poverty level tend to feel of lower class in comparison to their behavioral health care provider and as a result feel misunderstood, hindering the establishment of rapport, which subsequently impedes utilization of behavioral health care for these individuals (Krupnick & Melnikoff, 2012).

Need Variables: Preexisting Conditions of Obesity, Diabetes, Hypertension, and Tobacco Use

Regarding preexisting conditions and their relationship to behavioral health care utilization, Jones, Macias, Barreira, Fisher, Hargreaves, and Harding (2004) provide numerous studies showing how individuals with poor physical health conditions are more likely to have behavioral health concerns and tend to have higher utilization of behavioral

health care. The authors note that this is particularly the case in regard to poor physical health conditions of obesity, hypertension, and diabetes. As Fleury et al. (2015) notes, 50% to 90% of people with behavioral health concerns suffer from a physical condition. Regarding tobacco use and its relationship to behavioral health care utilization, Jones et al. (2004) found the relationship between tobacco use and behavioral health concerns to be unusually high.

While previous studies have shown how the predisposing, enabling, and need variables mentioned above are significant predictors of behavioral health care utilization, these variables have not been examined in regard to behavioral health intensity as well as their relationships and predictability of behavioral health care utilization and intensity within an integrated behavioral health care model (Elhai et al., 2009; Lindsay Nour et al., 2009). Within an integrated behavioral health care model, many barriers toward behavioral health utilization and intensity such as poverty level, lack of transportation, family size, and stigma are avoided. Having behavioral health care available within primary care helps individuals be more agreeable to receive behavioral health care, have already coordinated transportation and child care, there is no additional cost for traveling to another location for services, and there is less stigma associations toward behavioral health care when provided within primary care (Borschuk et al., 2015).

Additionally, within an integrated behavioral health care model, there may be higher utilization and intensity of behavioral health care by that which many individuals that would not otherwise feel the need to seek out behavioral health care would agree and receive behavioral health care. For instance, individuals with poor physical health

conditions such as obesity, hypertension, and diabetes, would be referred to a BHC for the sole purpose of better managing their condition. The same would go for individuals that use tobacco, who would typically be referred to a BHC within primary care just for smoking cessation counseling (Hunter et al., 2009). For these reasons, this study is important as it identified individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model.

Research Design for this Study

A quantitative design using secondary analysis has been selected as this study's research design based on its appropriate construction to examine the variables of interest (gender, age, poverty level, payer type, family size, race, ethnicity, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use) using relational, mean difference, and predictive analytic approaches to assess between these individual variables and an individual's utilization and intensity of behavioral health care within an integrated behavioral health care model (Gravetter & Wallnau, 2009). This study used interpretive analysis based on the secondary data providing larger meaning to the underlying data (Stewart, 2012). Specifically, this study's interpretive analysis comes about using descriptive statistics, independent sample *t*-tests, Chi-square tests of independence, and multivariate logistic regression analysis.

Using this design, this study provided information regarding the relationships between individual variables and those seen by a BHC within primary care, the mean differences between single behavioral health care sessions and multiple behavioral health

care sessions, and the individual variables that are predictive of behavioral health care intensity. While a longitudinal approach for investigating the intensity of behavioral health care when within an integrated behavioral health care model would be beneficial to determine the long term effectiveness of such a model, the time allotted for this study did not allow for such a study. For further research, a longitudinal study would be most beneficial for determining a better assessment of how the variables relate to each other (Gravetter & Wallnau, 2009).

Summary

There is a growing need for an integrated behavioral health care style of health care delivery within the United States' current health care system (Heath et al., 2013). As individual variables that serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model is a problem, this study examined and identified those individual variables. Results of this study can assist the health care community, governmental agencies, and the education and training community within professional psychology have a smoother transition toward this emerging style of health care delivery (Melchert, 2015; Rozensky, 2014).

While it is known that Andersen's behavioral model of health care use is a sound model for determining which individual variables are predictive of behavioral health care utilization, there is a gap in the literature regarding using Andersen's behavioral model of health care use to determine individual variables that serve as barriers toward behavioral health care intensity as well as behavioral health care utilization and intensity within an

integrated behavioral health care model (Elhai et al., 2009; Lindsay Nour et al., 2009). This study aimed to fill this gap in the literature by analyzing the relationships and predictability between individual variables and behavioral health care utilization and intensity within an integrated behavioral health care model. The individual variables analyzed in this study included gender, age, poverty level, payer type, family size, race, ethnicity, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use.

Chapter 3 highlights the methods used to examine the relationships and predictability between individual variables and behavioral health care utilization and intensity within an integrated behavioral health care model. The chapter describes the procedures for data collection and the ethical procedures for this study. The statistical power and sample size of this study is described and the operational definitions of primary variables are defined.

Chapter 3: Research Method

The purpose of this study using secondary analysis of quantitative data was to identify individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model. Through investigating the relationships and predictability between individual variables and their behavioral health care utilization and intensity within an integrated behavioral health care model, one can determine which individual variables may stand as a barrier toward behavioral health care utilization and intensity (Elhai et al., 2009). Identifying and addressing these barriers will allow individuals to receive overall better health care, as well as assist our current United States health care system merging toward an integrated behavioral health care style of health care delivery (Rozensky, 2014). Additionally, individual variables that serve as barriers toward utilization and intensity of behavioral health care has shown to be problematic for sustaining an integrated behavioral health care model (Lindsay Nour et al., 2009). This study aimed to achieve identification of those individual variables, so that health care facilities can sustain such a model, and provide expanded and earlier access to behavioral health care to the individuals they service.

Specifically, I examined the individual variables of gender, age, race, ethnicity, family size, poverty level, payer type, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use and how they affect an individual's utilization and intensity of behavioral health care within an integrated behavioral health care model. These individual variables all fall into the predisposing, enabling, and need variable

categories described within Andersen's behavioral model of health care use (Andersen & Newman, 1973). This chapter discusses the rationale for my research design, the research methodology used to provide answers to the research questions of this study, and how data were gathered and examined. The specific statistical methods used for this study included descriptive statistics, independent sample *t*-tests, Chi-square tests of independence, and multivariate logistic regression analysis. The data analysis plan, ethical considerations, and permissions obtained for the study are also described in this chapter.

Research Design and Rationale

In this study, I performed a secondary analysis of quantitative data that was retrieved from CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems, which tracks all appointments and health care information of the individuals they service (MicroMD, 2015). I decided to do a secondary data analysis for this study as secondary data analysis has shown to be a most efficient and popular form of data analysis being used for research in recent years, despite the limitations that come along with any secondary data analysis (Nicholas, 2015). Extracting secondary data by way of EMR has shown to be a beneficial source for conducting research. EMR is a most reliable system for gathering and storing information, which limits the amount of human error that is possible when collecting data (Dean et al., 2009; Liu et al., 2013).

This study used a quantitative design through secondary analysis using relational, mean difference, and predictive analytic approaches to examine individual variables and behavioral health care utilization and intensity within an integrated behavioral health care

model (Gravetter & Wallnau, 2009). I sought to clarify the relationships between individual variables and utilization of behavioral health care through an initial BHC session. Additionally, I investigated which individual variables predicted individuals' intensity of behavioral health care. As part of my analysis, I calculated the mean differences between single behavioral health care sessions and multiple behavioral health care sessions.

The individual variables examined in this study included gender, age, race, ethnicity, family size, poverty level, payer type, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use. These individual variables were examined in regard to their relationships and predictability of utilization and intensity of behavioral health care within an integrated behavioral health care model. For this study, behavioral health care included an initial BHC session, follow-up behavioral health care sessions with either a BHC, and/or a traditional behavioral health care provider within CHEMED Health Center's behavioral health department, and/or a behavioral health care session with a psychiatric nurse practitioner within CHEMED Health Center's behavioral health department.

One of the analytical methods that researchers can use when conducting a secondary data analysis is interpretive analysis. Interpretive analysis allows researchers to identify larger meaning than underlying data (Stewart, 2012). Such an analytical method was utilized for this study allowing for the analyzing between individual variables and behavioral health care utilization and intensity within an integrated behavioral health care model to provide new information and meaning of the data. The selected analytical tools

used for this secondary data analysis included descriptive statistics, independent sample *t*-tests, Chi-square tests of independence, and multivariate logistic regression analysis. These analytical tools allowed me to provide information regarding the relationships between individual variables and their utilization of behavioral health care through an initial BHC session as well as the mean differences between single behavioral health care sessions and multiple behavioral health care sessions. It also allowed me to provide information regarding which individual variables are predictive of behavioral health care intensity (Gravetter & Wallnau, 2009).

Methodology

Participants

The target population for this study were individuals who came to CHEMED Health Center's adult internal medicine department for primary care services. CHEMED Health Center is an FQHC located in Lakewood, New Jersey. The health center services a MUA made up of a culturally unique population, consisting of significant Orthodox Jewish and Hispanic/Latino populations (Schick, 2014; United States Census Bureau, 2010a). CHEMED Health Center is located in the fastest-growing township in the State of New Jersey. In addition, 53% of the township's population is at or below 200% of the Federal poverty level, and 15% are uninsured (United States Census Bureau, 2008).

In 2012, CHEMED Health Center had over 73,000 patient visits and provided medical services to nearly 18,000 patients. CHEMED Health Center provides health care services to individuals throughout their lifespans, and has the following onsite departments: adult internal medicine, pediatric, behavioral health, dental, and a

pharmacy. At the time of my study, CHEMED Health Center employed 26 licensed behavioral health care providers who work within the behavioral health department providing traditional behavioral health care and two psychiatric nurse practitioners who provide psychiatric services to individuals (CHEMED Health Center, 2015).

This study utilized archival data of 315 individuals that have seen their PCP within CHEMED Health Center's adult internal medicine department between November 1, 2013 and October 31, 2014, and have been referred and seen by a BHC during that visit. The 315 individuals used for this study are the total amount of individuals that have been seen by a BHC within primary care from November 1, 2013 and October 31, 2014. The individuals that have come in for a primary care visit may have come in for a variety of health care services including new patients seeking health care, annual well visits, and sick visits.

Procedure

The secondary data analyzed in this study was extracted from CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems. MicroMD EMR provided the individual variables of this study's sample population, and MicroMD Practice Management Systems' color coding system provided identification of the various types of behavioral health care sessions individuals had. The various types of behavioral health care sessions that individuals had included an initial session with a BHC, subsequent sessions with a BHC, traditional behavioral health care sessions, and psychiatric sessions (MicroMD, 2015).

The sampling process included all individuals that were seen by a BHC within CHEMED Health Center's adult internal medicine department for behavioral health care so that it can be entirely representative of the population of interest (Gravetter & Wallnau, 2009). Additionally, in order to have a more significant power for the sample of this study, this study used all 315 individuals that have been referred and seen by a BHC within CHEMED Health Center's adult internal medicine department. As this study used all the individuals that were identified through CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems to have seen a BHC from November 1, 2013 and October 31, 2014, there are no inclusion or exclusion criteria for this study.

Procedure for Data Collection

Permission for this study was obtained from Walden University's Institutional Review Board (IRB; 2016) prior to the commencement of this study (IRB # 01-11-16-0307125). A letter of authorization for data use and cooperation with CHEMED Health Center has been obtained for this study. This allowed for unidentifiable raw data to be extracted from CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems to be compiled, organized, and analyzed through statistical analysis. The data fields allowed for this study included gender, age, race, ethnicity, family size, poverty level, payer type, obesity, diabetes, hypertension, tobacco use, primary care visits, BHC sessions, and follow-up behavioral health care sessions. Prior to collecting data for this study, I received certification on "Protecting Human Research Participants" from the National Institutes of Health Office of Extramural Research.

Data Collection

The data manager of CHEMED Health Center extracted data from CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems (MicroMD, 2015) and provided unidentifiable raw data for the 315 individuals that have been seen by a BHC within CHEMED Health Center's adult internal medicine department. The data obtained for this study were the individual variables that included gender, age, race, ethnicity, family size, poverty level, payer type, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use, primary care visits, BHC sessions, and follow-up behavioral health care sessions. The data was complied, organized, and entered on Excel spreadsheets. Careful measures were taken while gathering the data, entering the data on the Excel spreadsheets, and while screening for entry errors and missing data.

Statistical Power and Sample Size

Given the lack of previous research in this area and the exploratory nature of this study, it was difficult to determine effects sizes necessary to estimate a priori power. RQ1 that examined the demographic, socio-economic, and clinical characteristics of individuals seen by a BHC for behavioral health care within CHEMED Health Center's adult internal medicine department did not require inferential analyses. This study's sample population was all individuals seen by a BHC from November 1, 2013 and October 31, 2014, and is therefore entirely representative of the population of interest (Gravetter & Wallnau, 2009).

RQ2 explored the differences between individuals seen for a single behavioral health care session versus multiple behavioral health care sessions on a variety of demographic, socio-economic, and clinical characteristics. Analytical techniques included independent sample *t*-tests and Chi-square tests of independence, and power analyses were conducted using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007). Given that effective sizes are not available in previous research, Cohen's (1992) guidelines were utilized, which suggest that a medium effect represent a *d* of .50. Given a sample size of 315, this study achieved greater than 99% power to detect medium effects using two-sample *t*-tests. In terms of Chi-square tests of independence, a posthoc power analysis suggested that the study achieved greater than 99% power to detect medium effects ($w = .30$) in all analyses.

For the multivariate logistic regression analysis to address RQ3 that examined which of all individual variables are predictive of behavioral health care intensity, the traditional rule of thumb is 10 events per variable which this study's sample meets. In addition, simulation studies suggested that this rule of thumb is too conservative and samples with as few as 7-8 events per variable generally yield accurate estimates (Vittinghoff & McCulloch, 2007). However, this study has a more complex mediation analyses and is more sensitive to power. To address this concern, the following sentence was added to the limitations section: "Although previous simulation studies suggest that this study's sample was large enough to detect medium sized mediation effects with power of at least .80 (Fritz & MacKinnon, 2007), replication in a larger sample is

necessary to more conclusively test for small mediation effects among variables that did not reach significance in this study."

Table 1

Descriptive Statistics of Individuals Seen for an Initial BHC Session

Demographic category	*N*	*%*
Gender		
Female	188	60%
Male	127	40%
Race		
African-American	28	9%
White	277	88%
Multiracial or other	4	1%
Did not respond	6	2%
Ethnicity		
NonHispanic	279	87%
Hispanic	30	10%
Payer type		
Medicaid	196	62%
Medicare	19	6%
Private insurance	52	17%
Uninsured	48	15%
Federal Poverty level		
100%	125	59%
133%	55	18%
200%	26	8%
250%	6	2%
Preexisting conditions		
Obesity	47	14%
Diabetes	31	10%
Hypertension	85	27%
Tobacco use	16	5%
Age	*M* = 40.11, *SD* = 13.08, range: 18-93	
Family Size	*M* = 2.45, *SD* = 2.49, *range*: 1-14	

Operational Definitions of Primary Variables

Age

For this study, the age of this study's sample population were examined. The age of the individuals were self-identified and were defined in years. Age of the sample population were compiled on an Excel spreadsheet using numbers to reflect an individual's age. Age for this study's sample population ranged from 18 to 93.

Behavioral Health Care Utilization and Intensity

For this study, behavioral health care utilization is defined as an individual having an initial BHC session within CHEMED Health Center's adult internal medicine department, and behavioral health care intensity is defined as follow-up behavioral health care sessions that took place within CHEMED Health Center. Follow-up behavioral health care sessions include sessions with either a BHC, and/or a traditional behavioral health care provider within CHEMED Health Center's behavioral health department, and/or a psychiatric nurse practitioner within CHEMED Health Center's behavioral health department. Behavioral health care utilization and intensity amongst individuals within this study's sample population took place at CHEMED Health Center within the 12-month timeframe that this study was designed for which is between November 1, 2013 and October 31, 2014.

Diabetes

According to the CDC (2015), diabetes is a disease in which there are high levels of blood glucose in an individual's blood stream. This comes as a result of cells in the body not absorbing the glucose that comes out of foods, because of the depletion of the

hormone called insulin which is responsible for getting the glucose inside cells. Individuals living with diabetes are at serious risk for heart disease, blindness, kidney failure, and body amputations, and is the seventh leading cause of death in the United States. For this study, individuals examined were those whom have been diagnosed by a medical provider with diabetes, and carried a diagnosis of diabetes in their medical record at the time they were seen by a BHC within primary care, and were categorized as: diabetic or not diabetic.

Ethnicity

According to Zaff et al. (2002), ethnicity is a social construct of "individuals' socially defined membership in putatively cultural, but sometimes also physiognomically, linguistically, geographically, or ancestrally based, ethnic groups." For this study, ethnicity of the individuals within this study's sample population were examined through self-identification by the individuals and were categorized as: Hispanic or non-Hispanic.

Family Size

For this study, family size of individuals within this study's sample population were examined. Family size was self-identified by the individuals and were defined by the number of members in the individual's family. Family size were compiled on an Excel spreadsheet using numbers to reflect the individual's family size. Family size numbers ranged from 1 to 14.

Follow-Up Behavioral Health Care Sessions

For this study, behavioral health care follow-up sessions refer to individuals that have had follow-up behavioral health care sessions within CHEMED Health Center, once

they have already had an initial BHC session within CHEMED Health Center's adult internal medicine department. Follow-up behavioral health care sessions include follow-up sessions with either a BHC, and/or a traditional behavioral health care provider within CHEMED Health Center's behavioral health department, and/or a psychiatric nurse practitioner within CHEMED Health Center's behavioral health department. These follow-up behavioral health care sessions took place within the 12-month timeframe that this study was designed for, which is between November 1, 2013 and October 31, 2014. The number of follow-up behavioral health care sessions were compiled on an Excel spreadsheet using numbers to reflect the amount of follow-up behavioral health care sessions an individual had.

Gender

For this study, gender of the individuals within this study's sample population was examined. Gender was self-identified by the individuals and were categorized as: female or male.

Hypertension

According to the American Heart Association (2014), hypertension is defined as a condition where an individual's blood level is elevated, which can be determined if an individual's systolic blood pressure is higher than 140 mm Hg and/or the diastolic blood pressure level is higher than 90 mm Hg. It can also be determined by a medical provider if the patient is on high blood pressure medication, or if there has been an occurrence of two or more times in the past where the systolic blood pressure was higher than 140 mm Hg and/or diastolic blood pressure level was higher than 90 mm Hg. For this study,

individuals examined were those whom have been diagnosed by a medical provider with hypertension, and carried a diagnosis of hypertension in their medical record at the time they were seen by a BHC within primary care, and were categorized as: hypertension or no hypertension.

Initial BHC Session

For this study, an initial BHC session is defined as an individual that received his/her initial BHC session within CHEMED Health Center's adult internal medicine department. The initial BHC session took place within the 12-month timeframe that this study was designed for which is between November 1, 2013 and October 31, 2014.

Obesity

According to the CDC (2014), obesity is defined by an individual's weight that is higher than what is considered to be healthy based on the individual's height. Obesity is measured with Body Mass Index (BMI) and is diagnosed among those with a BMI of > 30.0 kg/m2 or > 30 pounds above what is considered to be the average of individuals within the same gender and age classification. For this study, individuals examined were those whom have been diagnosed by a medical provider with obesity, and carried a diagnosis of obesity in their medical record at the time they were seen by a BHC within primary care, and were categorized as: obese or not obese.

Payer Type

For this study, payer type refers to the method in which individuals pay for their health care services. The payer type is documented within their medical record and were categorized as: Medicaid, Medicare, uninsured, or private insurance.

Poverty level

For this study, poverty level refers to the Federal poverty level in which the United States Census Bureau (2015) defines as follows: "Following the Office of Management and Budget's (OMB) Statistical Policy Directive 14, the Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The official poverty thresholds do not vary geographically, but they are updated for inflation using Consumer Price Index (CPI-U). The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps)." For this study, poverty level was self-identified by the individuals of this study's sample population and were categorized as: 100%, 133%, 200%, and 250%.

Primary Care Visit

For this study, a primary care visit is defined as any type of encounter an individual had with their PCP within the adult internal medicine department at CHEMED Health Center. The primary care visit took place within the 12-month timeframe that this study was designed for which is between November 1, 2013 and October 31, 2014.

Race

According to Zaff et al. (2002), race is a social construct of "physiognomic distinctions between people, with the concomitant assumption that social or psychological differences are rooted in biological differences." For this study, race of the individuals within this study's sample population were examined through self-

identification by the individuals and were categorized as: African-American, American Indian, more than one race, or White.

Tobacco use

For this study, individuals that used tobacco were examined. Tobacco use was self-identified by the individuals, and these individuals carried a diagnosis of tobacco use in their medical record at the time they were seen by a BHC within primary care. Tobacco use was categorized as: tobacco use or no tobacco use.

Research Questions and Hypotheses

Based on the theoretical framework consisting of Andersen's behavioral model of health care use which posits that predisposing, enabling, and need variables help predict health care utilization (Andersen & Newman, 1973), which can be applied to optimize an integrated behavioral health care model by identifying individual variables that serve as barriers toward behavioral health care utilization and intensity (Lindsay Nour et al., 2009), and the integrated theory of health behavior change which posits that health care providers within primary care play an essential role in facilitating health behavior change (Ryan, 2009), the following research questions were addressed:

RQ1: What are the relationships between individual variables and those seen by a BHC within primary care?

$H_0$1: There are no significant relationships between individual variables and those seen by a BHC within primary care.

H_a1: There are significant relationships between individual variables and those seen by a BHC within primary care.

RQ2: What are the mean differences between single behavioral health care sessions and multiple behavioral health care sessions based on individual variables?

$H_0 2$: There is no significant difference in single behavioral health care sessions and multiple behavioral health care sessions based on individual variables.

$H_a 2$: There is a significant difference in single behavioral health care sessions and multiple behavioral health care sessions based on individual variables.

RQ3: Which of all individual variables are predictive of behavioral health care intensity?

$H_0 3$: There are no individual variables that are predictive of behavioral health care intensity within an integrated behavioral health care model.

$H_a 3$: There are individual variables that are predictive of behavioral health care intensity within an integrated behavioral health care model.

The independent variable for RQ1 are the individual variables and a primary care visit, and the dependent variable for RQ1 is an initial BHC session. The independent variable for RQ2 is an initial BHC session provided within an integrated behavioral health care model, and the dependent variable is follow-up behavioral health care sessions. The independent variables for RQ3 are the individual variables and an initial BHC session provided within an integrated behavioral health care model, and the dependent variable is follow-up behavioral health care sessions. Follow-up behavioral health care sessions for the dependent variables of RQ2 and RQ3 include follow-up

behavioral health care sessions with a BHC, and/or a traditional behavioral health care provider within CHEMED Health Center's behavioral health department, and/or a psychiatric nurse practitioner within CHEMED Health Center's behavioral health department. These follow-up behavioral health care sessions took place within the 12-month timeframe that this study was designed for.

Data Analyses

This study utilized the Statistical Package for Social Sciences (SPSS) version 18.0 for the collected data. SPSS assisted in finding the means, standard deviations, and range of scores for all independent and dependent variables collected in this study (Gravetter & Wallnau, 2009). This study examined multiple individual variables to determine whether they are relational and predictive of behavioral health care utilization and intensity within an integrated behavioral health care model. This study used archival data of 315 individuals that have seen their PCP within CHEMED Health Center's adult internal medicine department between November 1, 2013 and October 31, 2014.

The individual variables used for this study were extracted from CHEMED Health Center's MicroMD EMR, version 10.5, which tracks patient information such as demographics, medical conditions, and insurance type, as well as from MicroMD Practice Management Systems, version 10.5, which tracks the types of health care visits that patients had within CHEMED Health Center. These two systems are a registered trademark of Henry Schein Medical Systems (MicroMD, 2015). Through these two systems, the necessary data was collected for this study. Care was taken to screen for any missing data, entry errors, and ensuring that all the necessary data of the 315 individuals

for this study were accounted for. According to Gravetter and Wallnau (2009), descriptive statistics allow for analyzing relationships among variables as it relates to the variable being studied. To test the first hypothesis that there are significant relationships between individual variables and those seen by a BHC within primary care, descriptive statistics were performed. They also assert that independent sample *t*-tests and Chi-square tests of independence are appropriate analytical tools to analyze mean differences among variables. To test the second hypothesis that there is a significant difference in single behavioral health care sessions and multiple behavioral health care sessions based on individual variables, independent sample *t*-tests and Chi-square tests of independence were performed.

According to Menard (2000), logistic regression is a reliable analytical tool for measuring the strengths and weakness of variables as they relate to the variable being studied, and the probability each variable has to predict outcomes versus the probability of not predicting outcomes. To test the third hypothesis that individual variables are predictive of behavioral health care intensity within an integrated behavioral health care model, multivariate logistic regression analysis was performed.

Ethics Safeguards

As this study used archival data extracted from EMR, many ethical concerns were avoided. Dean et al. (2009) and Liu et al. (2013) note how data collection via EMR is a most reliable source of data collection, minimizing common mistakes made by other methods of data collection. In terms of ethical safeguards that were taken into consideration during the data collection for this study, CHEMED Health Center's data

manager provided the individual variables necessary for this study by coding the individuals with numbers and not with their identifying information. Aside from the data manager, no other individual had access to the identifying information of the archival data used in this study. As to avoid bias within the selection process of participants within the study, this study utilized all individuals that have been seen by a BHC for behavioral health care within CHEMED Health Center's adult internal medicine department between November 1, 2013 and October 31, 2014.

This study kept in accordance with the guidelines set forth by the American Psychological Association (APA; 2002). In accordance with Ethics Code 8.02, this research was conducted with institutional approval, and careful measures were taken to avoid plagiarism and to accurately report study results. To ensure accurate study results, caution was taken while entering the data on Excel spreadsheets. Careful measures were taken while screening for entry errors and missing data. According to Trau, Härtel, and Härtel (2013), a most effective way to avoid altered responses when conducting research among stigmatized groups, such as individuals with behavioral health concerns, is to have the participants be "invisible" within the research project, which was achieved within this study which analyzes archival data.

Summary

This study was conducted using secondary analysis of quantitative data examining the relationships and predictability between individual variables and behavioral health care utilization and intensity within an integrated behavioral health care model. This study used archival data of 315 individuals that have seen their PCP within CHEMED

Health Center's adult internal medicine department between November 1, 2013 and October 31, 2014. Data was extracted from CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems which is CHEMED Health Center's method of collecting all health care data of the individuals they service. Ethical considerations were adhered to while conducting this study, based on Ethics Code 8.02 described within the APA's ethical principles of psychologists and code of conduct (APA, 2002).

Individual variables of gender, age, poverty level, payer type, family size, race, ethnicity, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use, were measured in regard to their relationships and predictability of behavioral health care utilization and intensity of behavioral health care within an integrated behavioral health care model. To address this study's study hypotheses, descriptive statistics was used to examine the relationships between individual variables and those seen for an initial session by a BHC, independent sample *t*-tests and Chi-square tests of independence to examine the mean differences between single behavioral health care sessions and multiple behavioral health care sessions based on individual variables, as well as multivariate logistic regression analysis to examine which individual variables are predictive of behavioral health care intensity (Gravetter & Wallnau, 2009).

Chapter 4 highlights the statistical tests used for data analyses, and the data results of this study. Tables and figures are provided to illustrate results. The chapter includes a description of patterns found among the relationships and predictability between

individual variables and behavioral health care utilization and intensity within an integrated behavioral health care model.

Chapter 4: Results

In this secondary analysis of quantitative data, I investigated relational, mean difference, and predictive variable characteristics between individual variables and their utilization and intensity of behavioral health care within CHEMED Health Center's integrated behavioral health care model. As individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model is a problem, the purpose of this study was to identify those individual variables. Identification of the individual variables that serve as barriers toward behavioral health care within an integrated behavioral health care model, optimizes the care and services provided within an integrated behavioral health care model (Rozensky, 2014).

I based my research on Andersen's behavioral model of health care use (Andersen & Newman, 1973), specifically, the model's identification of predisposing, enabling, and need variables. I used individuals' gender, age, race, ethnicity, family size, poverty level, payer type, and certain preexisting conditions (obesity, diabetes, hypertension, and tobacco use) as my study variables. I hypothesized that there are relationships among these individual variables and an initial BHC session. I also hypothesized that there are predictive variable characteristics of intensity of behavioral health care among individuals receiving behavioral health care within an integrated behavioral health care model.

Chapter 4 provides the statistical tests and analytical approaches used for the data analyses of this study. Tables and figures are provided to illustrate results. A description

of patterns found among the relationships and predictability between individual variables and behavioral health care utilization and intensity within an integrated behavioral health care model is provided. The research questions for this study are answered using relational, mean difference, and predictive variable characteristics of individual variables and their utilization and intensity of behavioral health care among individuals serviced within CHEMED Health Center's integrated behavioral health care model. Results of the study are outlined and described using tables and figures to illustrate the results.

Data Collection

CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems (MicroMD, 2015) were used to extract individual variables and behavioral health care utilization and intensity for 315 individuals. These individuals were seen within CHEMED Health Center's integrated behavioral health care model between November 1, 2013 and October 31, 2014. As is the case with EMR, these individual variables were stored and retrieved electronically (Castillo et al., 2010).

The data manager of CHEMED Health Center provided me with access to data for this study which included the raw unidentifiable individual variables of the 315 individuals along with their appointment history which included primary care visits, BHC sessions, and follow-up behavioral health care sessions. The data was complied, organized, and entered on Excel spreadsheets. Careful measures were taken while gathering the data, entering the data on the Excel spreadsheets, and while screening for entry errors and missing data.

For this study, predisposing variables included gender, age, race, ethnicity, and family size, enabling variables of payer type and poverty level, and need variables of preexisting conditions of obesity, diabetes, hypertension, and tobacco use. The independent variables of this study were the individual variables and a primary care visit. CHEMED Health Center's MicroMD EMR was used to extract the above individual variables, and MicroMD Practice Management Systems was used to identify that an individual had a primary care visit. The dependent variables for this study were an initial BHC session and follow-up behavioral health care sessions. For the dependent variables, follow-up behavioral health care sessions included the various types of behavioral health care sessions individuals had during the study time frame. These sessions included an initial BHC session, subsequent sessions with a BHC, traditional behavioral health care sessions, and psychiatric sessions. MicroMD Practice Management Systems were used to gather the dependent variables.

The data collected for this study included all individuals that have been seen for behavioral health care by a BHC within CHEMED Health Center's adult internal medicine department between November 1, 2013 and October 31, 2014. As this study analyzed archival data, typical ethical concerns like altered responses (which would often apply within stigmatized groups such as individuals with a behavioral health condition), were avoided (Trau et al., 2013). This study used archival data via EMR. Using it precludes many ethical concerns in human subject research. Also, data collection via EMR is a reliable means of collecting data (Dean et al., 2009; Liu et al., 2013). The data collection process for this study included careful entry of data on Excel spreadsheets, a

thorough screening process, identifying any outliers, entry errors, and missing data; all of which can alter study results if care is not taken with the data collection process (Tabachnick & Fidell, 2007).

Results

My sample population for this study were 315 adults (i.e., individuals over the age of 18) who came to CHEMED Health Center for a primary care visit and, during their primary care visit, were referred to, and seen by, a BHC provider. The sample size for this study included all adults that saw a BHC within their primary care visit between November 1, 2013 and October 31, 2014. Therefore, the sample size for this study is entirely representative of the population of interest (Gravetter & Wallnau, 2009).

The focus of RQ1 was on identifying the demographic, socio-economic, and clinical characteristics of participants. I used descriptive statistics to address this research question. As this study examined all individuals who have been referred and seen by a BHC within their primary care visit at CHEMED Health Center's adult internal medicine department, my sample population is entirely representative of the population of interest.

For RQ2, which examined the mean differences between single and multiple behavioral health care sessions based on individual variables, independent sample *t*-tests and Chi-square tests of independence were used. Power analyses were conducted using G*Power (Faul et al., 2007). For the two sample *t*-tests used in this study, this study achieved greater than 99% power to detect medium effects, adhering to Cohen's (1992) guideline that a medium effect represent a *d* of .50. For the Chi-square tests of

independence, a posthoc power analysis suggested that this study achieved greater than 99% power to detect medium effects (w = .30) in all analyses.

For RQ3 that examined which of all individual variables are predictive of behavioral health care intensity, multivariate logistic regression analysis was utilized. As the traditional rule of thumb for conducting logistic regression is that 10 events per variable is necessary, this study's sample met that requirement. In addition, simulation studies suggested that this rule of thumb is too conservative and samples with as few as 7-8 events per variable generally yield accurate estimates (Vittinghoff & McCulloch, 2007). However, this study has a more complex mediation analyses and is more sensitive to power. Accordingly, the following sentence was added to the limitations section: "Although previous simulation studies suggest that this study's sample was large enough to detect medium sized mediation effects with 80% power (Fritz & MacKinnon, 2007), replication in a larger sample is necessary to more conclusively test for small mediation effects among variables that did not reach significance in this study."

Participants

This study examined 315 individuals that have come to CHEMED Health Center's adult internal medicine department for a primary care visit, and subsequently has been referred and seen by a BHC for behavioral health care. All demographic, socio-economic, and clinical characteristics of this study's sample population were accessed using CHEMED Health Center's MicroMD EMR (MicroMD, 2015). The individuals within this study's sample population ranged in age from 18 to 93 with a mean of 40.11.

The majority of individuals within this study's sample population were female (60%) versus male (40%).

Aside for analyzing the demographic, socio-economic, and clinical characteristics of this study's sample population in regard to those seen for an initial BHC session, this study analyzed the demographic, socio-economic, and clinical characteristics of this study's sample population in regard to their intensity of behavioral health care. Intensity of behavioral health care include follow-up behavioral health care sessions with a BHC, and/or a traditional behavioral health care provider within CHEMED Health Center's behavioral health department, and/or a behavioral health care session with a psychiatric nurse practitioner within CHEMED Health Center's behavioral health department. Intensity of behavioral health care was accessed through MicroMD Practice Management Systems (MicroMD, 2015).

RQ1: What are the relationships between individual variables and those seen by a BHC within primary care?

From November 1, 2013 through October 31, 2014, 315 individuals seen within CHEMED Health Center's adult internal medicine department were referred and seen by a BHC for behavioral health care. All 315 individuals were included in this study's sample population, and they ranged in age from 18 to 93 with a mean of 40.11 (*SD* = 13.08). Family size ranged from 1 to 14 with a mean size of 2.45 (*SD* = 2.49) and this information was missing for two individuals.

There were 188 females (60%) and 127 males (40%) seen for an initial BHC session. Race varied with 28 (9%) who self-identified as African-American, 277 (88%) as

White, and 4 (1%) as multi-racial or other. Six (2%) did not provide information about their race. In terms of ethnicity, 279 (87%) self-identified as non-Hispanic, 30 (10%) as Hispanic, and 6 (2%) declined to provide ethnicity.

Socio-economic status in this study's sample population was measured using two proxies, the type of health insurance individuals utilized, and if available, their family income categorized as a percent of the Federal poverty level. Results indicated that 196 (62%) utilized Medicaid, 19 (6%) Medicare, and 52 (17%) private insurance. An additional 48 individuals (15%) were uninsured and paid for care using a sliding scale. Income information was only available for 212 (67%) individuals who completed sliding fee applications. Of these, the distribution of income was highly positively skewed with 125 (59%) at the poverty level, 55 (18%) at 133% of the poverty level, 26 (8%) at 200%, and 6 (2%) at 250%.

In addition, this study examined the degree to which those who had an initial BHC session carried four specific preexisting conditions. Results indicated that 47 (14%) were diagnosed with obesity, 31 (10%) with diabetes, 85 (27%) with hypertension, and 16 (5%) tobacco use.

RQ2: What are the mean differences between single behavioral health care sessions and multiple behavioral health care sessions based on individual variables?

To assess this study's hypothesis that individual variables would significantly differ between individuals who attended a single behavioral health care session and those who attended multiple behavioral health care sessions, a series of bivariate correlational analyses were conducted. Mean differences between these groups on continuous

individual variables were tested using independent sample *t*-tests, while differences between these groups on categorical individual variables were tested using Chi-square tests of independence. Results of the *t*-tests are summarized in table 2 and indicated that these two groups did not significantly differ in terms of age ($t(313) = 1.48$, $p = .14$) or family size ($t(313) = 1.46$, $p = .69$).

Table 2

Independent Sample t-tests Examining Continuous Individual Variables

	Single session		Multiple sessions				
Variable	*M*	*SD*	*M*	*SD*	*T*	*Df*	*P*
Age	39.27	12.75	41.52	12.54	1.48	313	.14
Family size	2.43	2.53	2.54	2.44	1.46	311	.69

In terms of other demographic characteristics, results indicated that there were no significant differences on gender (χ^2 (1) = .71, $p = .71$), race (χ^2 (3) = 2.79, $p = .43$), ethnicity (χ^2 (1) = .85, $p = .65$), or poverty level (χ^2 (3) = 2.003, $p = .57$). Payer type did significantly differ between groups such that individuals insured through Medicare were more likely to attend multiple sessions (73.7%) and those who were uninsured were less likely (25%; χ^2 (3) = 13.85, $p = .003$). In terms of clinical characteristics, only a preexisting condition of hypertension reached statistical significance showing that those individuals were more likely to attend multiple sessions (χ^2 (1) = 5.77, $p = .02$), however, all clinical characteristics besides tobacco use trended to significant (See Table 3)

suggesting that individuals with non-addiction preexisting conditions may have been more likely to attend multiple sessions.

Table 3

Chi-Square Tests of Independence Examining Categorical Individual Variables

	Single session		Multiple sessions				
Variable	*N*	%	*N*	%	χ^2	*Df*	*P*
Gender					.71	1	.71
Female	116	58.9%	72	61.0%			
Male	81	41.1%	46	39.0%			
Race					2.79	3	.43
African-American	16	8.1%	12	10.2%			
White	173	87.8%	104	88.1%			
Multi-racial or other	4	2.0%	0	0%			
Did not respond	2	2.0%	2	1.7%			
Ethnicity					.85	2	.65
Non-Hispanic	172	87.3%	107	90.7%			
Hispanic	21	10.7%	9	7.6%			
Payer type					13.85	3	.003
Medicaid	123	62.4%	73	61.9%			
Medicare	5	2.5%	14	11.9%			
Private insurance	33	16.8%	19	16.1%			
Uninsured	36	18.3%	12	10.2%			
Federal poverty level					2.003	3	.57
100%	74	56.9%	51	62.2%			
133%	36	27.7%	19	23.2%			
200%	15	11.5%	11	13.4%			
250%	5	3.8%	1	1.2%			
Preexisting conditions							
Obesity	24	12.2%	23	19.5%	3.11	1	.08
Diabetes	15	7.6%	16	13.6%	2.94	1	.09
Hypertension	44	22.3%	41	34.7%	5.77	1	.02
Tobacco use	8	4.1%	8	6.8%	1.13	1	.29

RQ3: Which of all individual variables are predictive of behavioral health care intensity?

To assess this study's hypothesis that individual variables would jointly predict behavioral health care intensity within an integrated behavioral health care model, a multivariate logistic regression analysis was utilized. Results indicated that overall, the multivariate logistic regression analysis significantly predicted follow-up behavioral health care sessions ($\chi^2(2) = 22.72$, $p < .001$) with a small effect size (overall correct classification percent = .64, McFadden's Pesudo-R^2= 0.06). Coefficients for the model are reported in Table 4 and suggested that this effect was driven by payer type such that those paying through Medicare were more likely to attend multiple behavioral health care sessions (74%) and those who were uninsured were less likely (25%) when compared to those insured by Medicaid (59%).

Table 4

Multivariate Logistic Regression Analysis Examining Individual Variables

Variable	*B*	*SE*	*Wald* χ^2	*P*	*OR*	*95% LL OR*	*95% UL OR*
Constant	-0.76	0.80	0.94	0.35	0.47	.09	2.22
Age	0.00	0.01	0.36	0.72	1.00	.97	1.02
Gender	-0.03	0.26	0.12	0.91	0.97	.58	1.62
Race	0.27	0.46	0.58	0.56	1.31	.53	3.56
Ethnicity	0.21	0.47	0.45	0.66	1.23	.50	3.26
Family size	-0.01	0.06	0.12	0.91	0.99	.89	1.11
Federal poverty level	0.00	0.00	-1.15	0.25	1.00	1.00	1.00
Payer type: Private	-0.13	0.35	0.38	0.70	0.87	.43	1.72
Payer type: Uninsured	-0.83	0.41	2.06	0.04	0.43	.19	.94
Payer type: Medicare	1.57	0.60	2.64	0.01	4.80	1.58	16.90
Obese	0.44	0.37	1.20	0.23	1.55	.75	3.18
Diabetes	0.27	0.45	0.60	0.55	1.31	.54	3.20
Tobacco use	0.33	0.60	0.55	0.59	1.38	.42	4.52
Hypertension	0.39	0.32	1.24	0.21	1.48	.79	2.76

Summary of Findings

The aim of this study was to identify relational, mean difference, and predictive variable characteristics between individual variables and utilization and intensity of behavioral health care among individuals who received behavioral health care within CHEMED Health Center's integrated behavioral health care model. The individual variables used for this study included gender, age, race, ethnicity, family size, poverty level, payer type, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use. As previous studies have found these individual variables to be predictive of general health care use as well as behavioral health care use (Andersen, 2008; Elhai & Ford, 2007; Lindsay Nour et al., 2009), this study is unique by that which it examined (a) individual variables that are relational and predictive of intensity of behavioral health care, and (b) individual variables that are relational and predictive of behavioral health care utilization and intensity within an integrated behavioral health care model.

Results of the Chi-square tests of independence found a preexisting condition of hypertension to be significantly associated with multiple behavioral health care sessions, indicating that intensity of behavioral health care is significantly associated with individuals that have a preexisting condition of hypertension. Results also indicated that individuals with non-addiction preexisting conditions are more likely to attend multiple sessions. Results of the Chi-square tests of independence and multivariate logistic regression analysis found payer type to significantly predict the intensity of an individual's behavioral health care use. These results mirror previous studies that found

payer type and need variables to be closely associated with intensity of behavioral health care within an integrated behavioral health care model (Elhai et al., 2006; Ford et al., 2005; Lindsay Nour et al., 2009).

In summary, study results found that predisposing variables, enabling variables with the exception of payer type, and need variables with the exception of a preexisting condition of hypertension, do not play a significant role in regard to utilization and intensity of behavioral health care within an integrated behavioral health care model. This suggests that most of the individual variables used in this study do not serve as barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model. While previous studies have found many of the individual variables used in this study to serve as barriers toward behavioral health care use (Barrett & Young, 2012; Elhai et al., 2009; Elhai & Ford, 2007; Elhai et al., 2006; Fleury et al., 2015; Lindsay Nour et al., 2009; Wang et al., 2005), this may imply that there is a decrease of barriers toward behavioral health care utilization and intensity when behavioral health care is provided within an integrated behavioral health care model.

Chapter 5 highlights the interpretation of this study's findings, the rational for conducting this study, how the study was conducted, and how it provides answers to the study's research questions. Additionally, limitations of this study are addressed, recommendations for future research are provided, and implications for positive social change are highlighted.

Chapter 5: Discussion, Conclusions, and Recommendations

The United States health care community, governmental agencies, and the education and training community within professional psychology are shifting toward a more interprofessional and integrated style of health care delivery. This shift includes integrating behavioral health care within primary care (Rozensky, 2014). Individuals wishing to access behavioral health care within an integrated setting, however, face many barriers in using these services (Lindsay Nour et al., 2009). There is limited research regarding individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care setting (Elhai et al., 2009; Lindsay Nour et al., 2009).

To address this gap, I examined a range of predisposing, enabling, and need variables for individuals who had accessed behavioral health care care services while seeing a PCP for primary care at my study location. Descriptive statistics, independent sample *t*-tests, Chi-square tests of independence, and multivariate logistic regression analysis were used to analyze the data collected for this study. I sought to identify which individual variables serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model, so that health care provided within primary care can be optimized, and to assist our current health care system merging toward an integrated behavioral health care style of health care delivery. Optimizing primary care is important as primary care continues to be the main gateway for individuals receiving health care services (Rozensky, 2014).

Results of this study found gender, age, race, ethnicity, family size, poverty level, and a preexisting condition of tobacco use to have no significant impact on behavioral health care utilization and intensity within primary care. A preexisting condition of hypertension reached statistical significance showing that those individuals were more likely to attend multiple sessions, χ^2 (1) = 5.77, p = .02, and all clinical characteristics besides tobacco use trended to significant suggesting that individuals with non-addiction preexisting conditions may have been more likely to attend multiple sessions. Payer type was also found to be predictive of behavioral health care intensity. Medicare recipients were more likely to attend multiple behavioral health care sessions (74%) than Medicaid recipients (59%) and those who were uninsured (25%).

Interpretation of Findings

Individuals' utilization and intensity of behavioral health care within CHEMED Health Center's integrated behavioral health care model was examined based on their individual variables. The individual variables chosen for this study were based on the predisposing, enabling, and need variables outlined within Andersen's behavioral model of health care use (Andersen & Newman, 1973). Descriptive statistics were used to examine the relationships between individual variables and those seen for an initial BHC session within primary care. Independent sample *t*-tests and Chi-square tests of independence were used to examine the mean differences between single behavioral health care sessions and multiple behavioral health care sessions. Multivariate logistic regression analysis was used to examine which individual variables are predictive of behavioral health care intensity within an integrated behavioral health care model.

Descriptive Statistics

Descriptive statistics support the first hypothesis, showing there were significant relationships between individual variables and their utilization of behavioral health care through seeing a BHC within their primary care visit. It also supports this study's theoretical framework of Andersen's behavioral model of health care use (Andersen & Newman, 1973), in which predisposing, enabling, and need variables determine behavioral health care use (Andersen, 2008; Elhai & Ford, 2007; Lindsay Nour et al., 2009). Some of this study's findings support previous findings while others do not support them.

In regard to gender, the majority of those seen for an initial BHC session were female (60%) than male (40%). This is consistent with studies that females have a higher utilization of behavioral health care both traditionally as well as within an integrated behavioral health care model (Elhai et al., 2009). In regard to age, results found the mean age of those seen for an initial BHC session to be 40.11. This is contrast to previous studies, finding higher utilization of behavioral health care among younger individuals (Elhai & Ford, 2007). This study's finding of the mean family size to be 2.45, indicates that family size does not play too much of a role in utilization of behavioral health care within an integrated behavioral health care model , as the family size nationally is at 2.59 (United States Census Bureau, 2010b). This is in contrast to findings where individuals with a lower family size tend to have higher utilization of general behavioral health care (Fleury et al., 2015).

In regard to ethnicity, the majority of those seen for an initial BHC session were non-Hispanic (88%) in comparison to Hispanic (10%). In regard to race, the majority of those seen for an initial BHC session were White (88%) compared to African-American (9%) and multi-racial or other (1%). This study's findings showing the majority of those seen for an initial BHC session were White and non-Hispanic, may have to do with that which general behavioral health care utilization has been found to be higher among White and non-Hispanic (Elhai & Ford, 2007), and lower among racial/ethnic minorities (Cook et al., 2013; Le Meyer et al., 2009). This study's findings demonstrate the strong disparity of behavioral health care utilization among racial/ethnic minorities even when provided within an integrated behavioral health care model.

This is concerning, as non-behavioral health care providers, such as medical providers, are the first professional contact individuals have while under emotional distress, especially among racial/ethnic minorities (Ferrer, 2007). This study's findings may have to do with that which studies have found medical providers to lack the knowledge and skill to recognize behavioral health concerns (Fiscella & Holt, 2007; Reschovsky & O'Malley, 2008). This is especially the case in regard to the racial/ethnic minority individuals they provide services for (Dwight-Johnson, Sherbourne, Liao, & Wells, 2000; Yeung, Yu, Fung, Vorono, & Fava, 2006).

In regard to payer type, the majority of those seen for an initial BHC session utilized Medicaid (62%), compared to Medicare (6%), private insurance (17%), and uninsured (15%). This demonstrates the strong relationship of an individual's payer type and their behavioral health care utilization. As in previous studies, there has been a

significant relationship between an individual's payer type for behavioral health care and their utilization of behavioral health care (Simon et al., 1994). In regard to poverty level, the majority of those seen for an initial BHC session fell within the Federal poverty level, which has also been a significant factor in previous studies determining an individual's utilization of general behavioral health care as well as within an integrated behavioral health care model (Elhai et al., 2009).

In regard to preexisting conditions, the majority of those seen for an initial BHC session carried a preexisting condition of hypertension (27%), compared to obesity (14%), diabetes (10%), and tobacco use (5%). As previous studies found, need variables of individuals, such as poor physical and behavioral health functioning, has shown to be relational of general behavioral health care utilization as well as within an integrated behavioral health care model (Elhai et al., 2006; Ford et al., 2005; Lindsay Nour et al., 2009). This study's findings showing the majority of those seen for an initial BHC session carried a preexisting condition of hypertension may have to do with that which individuals suffering with hypertension trend to also have a behavioral health condition, such as depression and/or anxiety which is often connected to their hypertension (Jonas, Franks, & Ingram, 1997; Paine, Watkins, Blumenthal, Kuhn, & Sherwood, 2015).

Independent Sample *t*-Tests

Conducting a series of bivariate correlational analysis, the independent sample *t*-tests used did not find a statistically significant relationship among the individual variables of age or family size to be associated with follow-up behavioral health care sessions. Results of the independent sample *t*-tests does not support this study's

hypothesis that there is a significant difference in single behavioral health care sessions and multiple behavioral health care sessions based on individual variables. It also does not support this study's theoretical framework of Andersen's behavioral model of health care use, in which predisposing and enabling variables determine behavioral health care use (Andersen, 2008; Elhai & Ford, 2007; Lindsay Nour et al., 2009).

This study's findings do not support previous findings as well. This study's findings that age was not significantly associated with follow-up behavioral health care sessions, is in contrast to previous findings where age (younger age) is closely associated with behavioral health care intensity within an integrated behavioral health care model (Elhai et al., 2006). Family size also appeared to not be a factor in regard to behavioral health care intensity within an integrated behavioral health care model. This is in contrast to the findings of Fleury et al. (2015), where smaller family size is associated with higher intensity of behavioral health care within an integrated behavioral health care model.

Chi-Square Tests of Independence

Results of the Chi-square tests of independence found a part of the individual variables examined to show a significant difference in single behavioral health care sessions and multiple behavioral health care sessions. For those that were found to be significant, it supports this study's hypothesis that there is a significant difference in single behavioral health care sessions and multiple behavioral health care sessions based on individual variables. It also supports this study's theoretical framework of Andersen's behavioral model of health care use, in which enabling and need variables determine

behavioral health care use (Andersen, 2008; Elhai & Ford, 2007; Lindsay Nour et al., 2009).

Some of this study's findings support previous findings while others do not support them. Results of the Chi-square tests of independence found no statistical significance among the individual variables of gender, race, ethnicity, or poverty level. While studies have found a distinction in gender where females have higher intensity of general behavioral health care (Elhai & Ford, 2007) as well as within an integrated behavioral health care model (Elhai et al., 2006), this study did not find this distinction. It should be noted that the results of the descriptive statistics for this study found 20% more females than males had an initial BHC session during their primary care visit.

While Elhai and Ford (2007) found higher intensity of behavioral health care among White individuals when behavioral health care was provided within an integrated behavioral health care model, results of the Chi-square tests of independence did not find statistical significance in this regard. This is also in contrast to recent studies showing less intensity of behavioral health care among racial/ethnic minorities (Cook et al., 2013; Le Meyer et al., 2009). While results of the descriptive statistics found 88% of this study's sample population with an initial BHC session to be White, this could be attributed to the racial disproportion of the population CHEMED Health Center provides their services for.

In regard to ethnicity, results of the Chi-square tests of independence did not find a significant difference among ethnicity, as there was no significant difference of intensity of behavioral health care within an integrated behavioral health care model

among Hispanic and non-Hispanic. This is in contrast with previous studies that found less intensity of behavioral health care among ethnic minorities due to barriers that include stigma, mistrust based on cultural beliefs, and language barriers (Waheed et al., 2015). Both of this study's findings regarding race and ethnicity came short of the 2001 Surgeon General's Report describing lower intensity of behavioral health care among racial/ethnic minorities (United States Department of Health and Human Services, 2001), as well as current studies concurring that intensity of behavioral health care is less among racial/ethnic minorities (Cook et al., 2013; Le Meyer et al., 2009). In regard to both race and ethnicity, this study's findings suggest that there may be a decrease of barriers toward intensity of behavioral health care among racial/ethnic minorities when provided within an integrated behavioral health care model.

In regard to poverty level, results of the Chi-square tests of independence did not find an individual's poverty level to be significantly associated with follow-up behavioral health care sessions. However, results of the descriptive statistics found that the majority of this study's sample population that had an initial BHC session fell within the Federal poverty level. That which results of the descriptive statistics found the majority of this study's sample population that had an initial BHC session to fall within the Federal poverty level, may just have to do with the unique population CHEMED Health Center provides services to. This study's findings that an individual's poverty level was not significantly associated with follow-up behavioral health care sessions, is in contrast with previous findings that poverty level is significantly associated with an individual's

intensity of general behavioral health care as well as within an integrated behavioral health care model (Elhai et al., 2009).

In regard to payer type, results of the Chi-square tests of independence found payer type to be significantly associated with follow-up behavioral health care sessions, indicating that payer type can serve as a barrier toward behavioral health care intensity within an integrated behavioral health care model. Specifically, the analysis found that follow-up behavioral health care sessions were most likely attended by individuals with a payer type of Medicare (73.7%), likely among individuals with a payer type of Medicaid (37%), and least likely among individuals who were uninsured (25%; χ^2 (3) = 13.85, p = .003). This finding mirrors previous findings where payer type for behavioral health care is directly associated with behavioral health care intensity (Simon et al., 1994).

This study's finding is especially important, showing that even within an integrated behavioral health care model, where behavioral health care is more readily accessible, less stigmatizing, and more appealing to individuals with its brief intervention delivery style (Borschuk et al., 2015; Nardi, 2010; Pomerantz et al., 2014; Strosahl et al., 2012), one's payer type would play a significant factor as to whether an individual would continue receiving behavioral health care. However, a caveat to this finding is that studies have shown how PCPs are less likely to ask their uninsured patients regarding their behavioral health concerns than they are to their insured patients (Meyer, Saw, Cho, & Fancher, 2015). If the PCPs that provided primary care to this study's sample population refrained from asking their uninsured patients regarding their behavioral health concerns,

many of the uninsured patient's behavioral health concerns may have gone unnoticed, not providing them the option of having an initial BHC session.

In regard to individuals carrying a preexisting condition, results of the Chi-square tests of independence only found individuals carrying a preexisting condition of hypertension to be significantly associated with of follow-up behavioral health care sessions. However, a preexisting condition of obesity and a preexisting condition of diabetes trended to significant. Out of the four preexisting conditions examined, only tobacco use showed no significant relationship with follow-up behavioral health care sessions. This suggests that individuals with non-addiction preexisting conditions are more likely to have higher intensity of behavioral health care. This study's findings mirror similar findings in which need variables such as preexisting conditions are closely associated with general behavioral health care intensity as well as within an integrated behavioral health care model (Elhai et al., 2006; Ford et al., 2005; Lindsay Nour et al., 2009).

Multivariate Logistic Regression Analysis

Results of the multivariate logistic regression analysis found a part of the individual variables examined to significantly predict behavioral health care intensity. For those that were found to be significant, it supports this study's hypothesis that enabling variables are predictive of behavioral health care intensity within an integrated behavioral health care model. It also supports this study's theoretical framework of Andersen's behavioral model of health care use, in which enabling variables determine

behavioral health care use (Andersen, 2008; Elhai & Ford, 2007; Lindsay Nour et al., 2009).

Some of this study's findings support previous findings while others do not support them. Results of the multivariate logistic regression analysis found that payer type was the single individual variable that significantly predicted an individual's intensity of behavioral health care within an integrated behavioral health care model. Specifically, individuals with a payer type of Medicare were more likely to attend multiple sessions (74%), those who were uninsured were less likely (25%), and those with a payer type of Medicaid were likely to attend multiple sessions (59%). Results of the multivariate logistic regression analysis mirrored the findings of the independent sample *t*-tests and Chi-square tests of independence, with the exception of a preexisting condition of hypertension which results of the Chi-square tests of independence found to be significantly associated with follow-up behavioral health care sessions within an integrated behavioral health care model. This suggests that multicolinearity between a preexisting condition of hypertension and other predictors may have attenuated its effect in the multivariate logistic regression analysis (Gravetter & Wallnau, 2009).

Limitations of Study

Although results of this secondary analysis of quantitative data study shed light on the need for an integrated behavioral health care style of health care delivery, assist with the merge of health care facilities intending to adopt an integrated behavioral health care model, and identified individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model

(Elhai et al., 2009; Lindsay Nour et al., 2009; Rozensky, 2014), this study has its limitations that are important to address. Firstly, the integrated behavioral health care model at CHEMED Health Center has been recently implemented, where the PCPs and BHCs have been working independently before the model has been implemented. As Nordal (2012) found that many providers and consumers share disappointment in the twists and turns our health care system has been taking in recent years, there may have been negative attitudes toward the integrated behavioral health care model among the CHEMED Health Center adult internal medicine PCPs as well as by the patients they were treating. This negative attitude may have impacted the amount of BHC referrals made by the PCPs, as well as the utilization and intensity of behavioral health care amongst the patients. Additionally, as Corrigan et al. (2014) describes how medical providers are often skeptical of the effectiveness of behavioral health care as they relate to physical health, this may have impacted the ambition of the CHEMED Health Center adult internal medicine PCPs to make a BHC referral.

Another limitation concerns this study's sample population. This study's sample population consists of a specific geographic population consisting of a culturally unique population. As CHEMED Health Center is located within the Lakewood Township of New Jersey, a township that consists of significant Orthodox Jewish, and Hispanic/Latino populations (Schick, 2014; United States Census Bureau, 2010a), many individuals serviced within CHEMED Health Center have unique cultural backgrounds that include diverse attitudes toward behavioral health care and health care in general, stigma toward behavioral health care, and linguistic challenges (Borschuk et al., 2015; Coons et al.,

2004; Gary, 2005). Additionally, Lakewood Township is the fastest-growing town in the State of New Jersey (New Jersey Department of Human Services, 2005) with an annual birth rate of over 5,000, 53% of Lakewood Township's population is at or below 200% of the Federal poverty level, and 15% are uninsured. As cultural and SES characteristics impact behavioral health care utilization and intensity (Lindsay Nour et al., 2009; Nordal, 2012), the behavioral health care utilization and intensity within this study's sample population may be due to their unique cultural and SES characteristics, and may not apply to other populations.

In regard to statistical analyses for this study, it was difficult to determine effects sizes necessary to estimate a priori power, given the lack of previous research in this area and exploratory nature of this study. While multivariate logistic regression analysis was utilized to address research question three, as the traditional rule of thumb is 10 events per variable, and even as few as 7-8 events per variable generally yield accurate estimates (Vittinghoff & McCulloch, 2007), this study's more complex mediation analyses are more sensitive to power. Although previous simulation studies suggest that this study's sample was large enough to detect medium sized mediation effects with 80% power (Fritz & MacKinnon, 2007), replication in a larger sample is necessary to more conclusively test for small mediation effects among variables that did not reach significance in this study.

Additionally, while results of the Chi-square tests of independence found a preexisting condition of hypertension to be significantly associated with follow-up behavioral health care sessions within an integrated behavioral health care model, results

of the multivariate logistic regression analysis did not yield these results. This discrepancy may however be due to that which multicolinearity between a preexisting condition of hypertension and other predictors attenuated its effect in the multivariate logistic regression analysis (Gravetter & Wallnau, 2009). There is also a limitation in regard to this study's usage of a preexisting condition of hypertension as a need variable for this study, as individuals with a condition of hypertension trend to also have a behavioral health condition, such as depression and/or anxiety which is often connected to their hypertension (Jonas et al., 1997; Paine et al., 2015). That being the case, such individuals may be more likely to have higher intensity of behavioral health care to address their behavioral health condition regardless of their hypertension condition.

Recommendations for Further Research

As the United States health care system is merging toward an integrated behavioral health care style of health care delivery, it would be beneficial for the health care community to facilitate this shift in the most efficient way possible (Rozensky, 2014). As there is limited research available regarding various components that may impact the utilization and intensity of behavioral health care within an integrated behavioral health care model, more research investigating barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model would be beneficial to accommodate this shift toward a more integrated behavioral health care style of health care delivery (Elhai et al., 2009; Lindsay Nour et al., 2009). While this study's secondary analysis of quantitative data study investigated specific individual variables to identify those that serve as barriers toward utilization and intensity of

behavioral health care within an integrated behavioral health care model, there are many more factors that need to be considered.

Firstly, in regard to individual variables, there are important variables that were not examined in this study. Specifically, the day and time that individuals come in for their primary care visit may impact their utilization and intensity of behavioral health care within an integrated behavioral health care model. As time-related variables play a major role in utilization and intensity of behavioral health care (Cree et al., 2015; Tucker & Davison, 2000), an individual who is employed or has children that need child care services or need to be in school, and comes to their PCP on a weekday during working/school hours may be reluctant to see a BHC in addition to their visit with their PCP.

Another important individual variable that was not addressed in this study, is if an individual had received behavioral health care in the past. Weiner (2005) found that those individuals are more likely to seek out additional behavioral health care. An individual that received behavioral health care in the past may be more agreeable to see a BHC when referred to one within an integrated behavioral health care model.

Additionally, as PCPs are constantly constrained for time while seeing their patients, they often times forego making the appropriate health care referrals and connections before their patient leaves their visit (Braddock & Snyder, 2005). As a result, individuals that see their PCP during a hectic time of day for the PCP, may not be referred to a BHC. Furthermore, consideration must be taken as to whether an individual is coming for an annual visit, where PCPs generally carve out more time for their

patients, or if they are just coming in for acute symptoms (Hunter et al., 2009). The possible disparities of behavioral health care utilization and intensity within an integrated behavioral health care model between rural and urban areas need to be examined as well. This is due to that which there may be higher behavioral health care utilization and intensity within rural areas as PCPs within rural areas spend more time with their patients and are more likely to address behavioral health concerns with their patients, as well as that which access to traditional behavioral health care is more limited in rural areas (Hartley, Korsen, Bird, & Agger, 1998).

Other variables that would be beneficial for understanding barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model would include the specific characteristics of the PCP making the referral, as well as the specific characteristics of the BHC providing the behavioral health care. Cultural, demographic, gender, age, religious and other characteristics of health care providers may impact the way individuals adhere to the referrals and interventions provided by their health care providers (Alegría et al., 2013; Jerant, Bertakis, Fenton, Tancredi, & Franks, 2011). Therefore, additional research would be necessary to help identify these variables so that the PCPs and BHCs themselves don't serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model.

Finally, more research is necessary evaluating the effectiveness of the interventions provided by BHCs within an integrated behavioral health care model. While

BHCs use evidence-based interventions similar to the interventions used by traditional behavioral health care providers (cognitive behavioral therapy, solution-focused therapy etc.), these interventions are tailored to keep up with the fast-paced style of primary care. As a result, the interventions they provide may be in question as to whether they are effective when they are tailored within primary care (Alexander et al., 2010; Robinson & Strosahl, 2009).

Implications for Positive Social Change

This study's secondary analysis of quantitative data study results have implications for positive social change. As individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model is a problem because individuals will not get the appropriate health care necessary, as well as impede our current health care system merging toward an integrated behavioral health care style of health care delivery (Lindsay Nour et al., 2009), this study identified individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model, in attempt to benefit the shift in climate within our current health care delivery style (Rozensky, 2014). This study has implications for positive social change as it provides important information for health care facilities intending to adopt an integrated behavioral health care model within their health care facility, as well as create awareness of the importance of an integrated behavioral health care style of health care delivery.

As 70% of medical visits are behavioral health related (Bryan et al., 2009), and 70% of psychotropic medications are prescribed by medical providers other than behavioral health care providers (Hunter et al., 2009), adopting an integrated behavioral health care style of health care delivery would have implications for positive social change as it would optimize primary care. Individuals would receive overall better health care, behavioral health care will be more accessible and affordable, and there would be a decrease of barriers toward behavioral health care utilization and intensity. Within an integrated behavioral health care model, there would be decrease of barriers toward behavioral health care utilization and intensity, such as stigma toward behavioral health treatment, geographic, cultural, and linguistic barriers (Borschuk et al., 2015; Clay, 2014; Coons et al., 2004; Kenkel et al., 2005; Nardi, 2010; Pomerantz et al., 2014).

On a national level, providing an integrated behavioral health care style of health care delivery would reduce our current astronomical health care costs, which would facilitate overall less government spending on health care (Clay, 2014). Additionally, an integrated behavioral health care style of health care delivery would limit barriers toward utilization and intensity of behavioral health care that are common among populations with their own unique barriers. This would include racial/ethnic minorities, individuals lacking transportation, needing child care to make appointments, and limited hours made available by clinics (Borschuk et al., 2015; Cook et al., 2013; Le Meyer et al., 2009; United States Department of Health and Human Services, 2001).

As this study found payer type to impact an individual's intensity of behavioral health care within an integrated behavioral health care model, these findings have

implications for positive social change for individuals treated within primary care. PCPs should become aware of how an individual's payer type impacts their intensity of behavioral health care, and they should ask and address their patient's behavioral health concerns, regardless of their reluctance to ask their uninsured patients (Meyer et al., 2015). As suggested by Lindsay Nour et al. (2009), PCPs should ask their patients about their behavioral health concerns regardless of their payer type, as well as make a referral to a behavioral health care provider for even a few sessions, as this alone may help improve both the patient's physiological and psychological well-being, as well as save the patient preventable health care costs in the future (Clay, 2014).

As this study found a preexisting condition of hypertension to be predictive of higher intensity of behavioral health care within an integrated behavioral health care model, PCPs should be cognizant of this while treating individuals carrying a preexisting condition of hypertension. While typically PCPs may treat hypertension through medical intervention, PCPs should become aware of that which a behavioral health condition may be contributing to the hypertension, or that the hypertension may exacerbate a behavioral health condition, which would prompt the PCP to make a BHC referral (Jonas et al., 1997; Paine et al., 2015). As this study found individuals with a preexisting condition of obesity and a preexisting condition of diabetes to trend toward higher intensity of behavioral health care within an integrated behavioral health care model, PCPs should become aware of how a behavioral health condition may be contributing to the obesity and diabetes, or that the obesity and diabetes may exacerbate a behavioral health condition, which would prompt the PCP to make a BHC referral.

Whether an individual is hesitant to seek out behavioral health care as a result of his/her payer type, or a PCP would like to refer an individual with a preexisting condition of hypertension, obesity, or diabetes due to the behavioral health component that may be involved, having a BHC under one roof can provide immediate behavioral health care to these individuals. This encourages PCPs to make behavioral health care referrals to their patients, and for the patients to be agreeable to receive behavioral health care from a BHC (Robinson & Reiter, 2007). Having a BHC easily accessible is especially important, as individuals typically only follow-up with specialty behavioral health care referrals made from primary care only 10% of the time (Clay, 2014). Additionally, having BHCs available on-demand within primary care will limit the consultation time PCPs have with their patients, which has implications for positive social change as this allows PCPs to expand their capacity for providing primary care services for additional patients (James & Folen, 2005).

Aside from this study having implications for positive social change on a national level, this study has implications for positive social change for Ocean County, New Jersey and the Lakewood Township, where CHEMED Health Center provides their health care services. As an integrated behavioral health care model allows for behavioral health care to be more accessible to individuals (Clay, 2014), this study has implications for positive social change by providing study results that other health care facilities within the State of New Jersey can utilize to adopt and optimize an integrated behavioral health care model. This is especially important for the State of New Jersey which has a greater demand for behavioral health care than there are services. Specifically for Ocean

County, this study has implications for positive social change as data from 2011 showed how 60.7% of individuals suffering from depression were seen by general practitioners and not by behavioral health care providers (Carrier Clinic, 2013).

Finally, this study has implications for positive social change for the Lakewood Township, a township consisting of significant Orthodox Jewish, and Hispanic/Latino populations (Schick, 2014; United States Census Bureau, 2010a), is predominantly low-income (United States Census Bureau, 2008), and is the fastest-growing town in New Jersey (New Jersey Department of Human Services, 2005). As cultural and SES characteristics impact behavioral health care utilization and intensity (Lindsay Nour et al., 2009; Nordal, 2012), the results of this study have implications for positive social change as it identified barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model, a model that decreases many barriers toward behavioral health care utilization and intensity including cultural and SES barriers (Coons et al., 2004; Borschuk et al., 2015). Additionally an integrated behavioral health care model would allow for behavioral health care to be easily accessible, which would help the Lakewood Township keep up with the needs of its burgeoning population (Clay, 2014).

Recommendations for Practice

As this study found payer type to be a significant barrier toward intensity of behavioral health care within an integrated behavioral health care model, PCPs should become aware of this barrier. They should become familiar with the Patient Protection and Affordable Care Act of 2010, which provides information for making behavioral

health care more accessible and affordable. Additionally, it provides new billing codes in which there would be reimbursements for behavioral health care provided within primary care.

Following the Patient Protection and Affordable Care Act of 2010, many organizations such as the American College of Physicians (2013), Inter Organizational Practice Committee (2016), and the American Psychological Association Practice Directorate (2016), provide valuable resources how to navigate the Patient Protection and Affordable Care Act of 2010, in regard to new health care billing codes, regulations, and reimbursement for behavioral health care provided within primary care. These organizations are designed to make behavioral health care more accessible and affordable to the general population. A recommendation for any health care facility intending to provide an integrated behavioral health care style of health care delivery would be to utilize the above resources to minimize the barrier of behavioral health care intensity due to an individual's payer type.

An additional recommendation for practice is for PCPs to become aware of the shifts that will be emerging within primary care, largely due to the Patient Protection and Affordable Care Act of 2010. One such shift is that which it is estimated that Medicaid coverage will be provided for all families that fall within 133% of the Federal poverty level, which would increase primary care visits between 15.07 to 24.6 million a year (Rozensky, 2014). Many of these patients include racial/ethnic minorities, where PCPs are less likely to recognize and inquire about their behavioral health concerns (Dwight-Johnson et al., 2000; Yeung et al., 2006). This presents a problem for utilization and

intensity of behavioral health care among racial/ethnic minorities even within an integrated behavioral health care model, as Ledoux, Barnett, Garcini, and Baker (2009) found non-behavioral health care providers to be the strongest predictor of behavioral health care use, which holds especially true among PCPs within primary care (Wang et al., 2006).

As this study found how individuals with a preexisting condition of hypertension are likely to have higher intensity of behavioral health care, and individuals with a preexisting condition of obesity and a preexisting condition of diabetes trend to have higher intensity of behavioral health care, recommendations for practice include for PCPs to identify preexisting conditions of hypertension, obesity, and diabetes, and address any behavioral health component that may be involved (Jonas et al., 1997; Paine et al., 2015). The same would go for that which this study found payer type to be a significant barrier toward intensity of behavioral health care within an integrated behavioral health care model. Recommendations for practice include for PCPs to inquire and address an individual's behavioral health concerns within primary care regardless of the individual's payer type (Meyer et al., 2015).

Another important recommendation for practice is that behavioral health care providers working as BHCs need to be aware of the different style of behavioral health care they will be providing within primary care, in which this shift in style can be similar to changing career paths (Glueck, 2015). This is due to the brief intervention style of behavioral health care delivered within primary care, the ability to communicate and provide feedback to the PCPs, as well as keeping up with the fast-paced nature of primary

care. As BHCs need to learn how to adapt their previous education, trainings, and experiences of behavioral health care to one that will work out of primary care (Cox, Adams, & Loughran, 2014), there is much concern that BHCs may not be well-equipped to appropriately apply their previous education, trainings, and experiences to provide behavioral health care within a primary care setting (Blount & Miller, 2009). Additionally, BHCs need to be able to provide behavioral health care that apply to the unique concerns that come up within primary care such as dealing with chronic health conditions (Funderburk et al., 2011). Without adequate training for behavioral health care providers working within primary care, health care facilities intending to sustain an integrated behavioral health care model may not generate enough BHC referrals from the PCPs as well as follow-up behavioral health care sessions which is necessary in order to sustain such a model.

To address these concerns, implications for practice would include graduate courses and internship placements within the field of psychology to develop an integrated behavioral health care track so students can receive education, trainings, and experiences on providing behavioral health care within primary care (Rozensky, 2014). Additionally, there would need to be additional resources for continuing education in regard to providing behavioral health care within primary care. Additionally, behavioral health care providers that intend to provide behavioral health care within primary care would need to acquire medical background, shadow BHCs working within an existing integrated behavioral health care model, join the various networks and associations providing

training on integrated behavioral health care, and attend continuing education on integrated behavioral health care (Glueck, 2015).

Conclusion

The need for integrated behavioral health care within the United States health care system has been recognized by the health care community, governmental agencies, and the education and training community within professional psychology, prompting shifts within our current style of health care delivery (Rozensky, 2014). One pathway toward achieving integrated behavioral health care is an integrated behavioral health care model where behavioral health care providers work within primary care, addressing behavioral health concerns and poor health behaviors that impact an individual's overall health (Hunter et al., 2009). Individual variables that serve as barriers toward utilization and intensity of behavioral health care within an integrated behavioral health care model is a problem as this impacts individuals from getting the appropriate health care they need as well as impedes our current health care delivery system merging toward an integrated behavioral health care style of health care delivery (Lindsay Nour et al., 2009).

As there is limited research regarding behavioral health care utilization and intensity within an integrated behavioral health care model (Elhai et al., 2009; Lindsay Nour et al., 2009), the purpose of this secondary analysis of quantitative data was to limit the gap in literature by identifying barriers toward behavioral health care utilization and intensity within an integrated behavioral health care model. Specifically, this study used individual variables of predisposing, enabling, and need variables to examine the relationships and predictability of behavioral health care utilization and intensity within

an integrated behavioral health care model (Andersen & Newman, 1973; Lindsay Nour et al., 2009). These individual variables included gender, age, race, ethnicity, family size, poverty level, payer type, and preexisting conditions of obesity, diabetes, hypertension, and tobacco use.

This study was based on the foundations of Andersen's behavioral model of health care use (Andersen & Newman, 1973) and the integrated theory of health behavior change (Ryan, 2009). Andersen's behavioral model of health care use is a model that has many years of empirical grounding and is a most popular model used for identifying individual characteristics that are predictive of health care utilization based on predisposing, enabling, and need variables (Andersen, 2008; Barrett &Young, 2012; Elhai & Ford, 2007; Fleury et al., 2015; Lindsay Nour et al., 2009; Schomerus et al., 2013; Wang et al., 2005). This study applied the integrated theory of health behavior change, one in which incorporates both existing and new ways of facilitating health behavior change within primary care, and has shown to be an effective theory for health behavior change within primary care, to that which BHCs working within an integrated behavioral health care model facilitate health behavior change through fostering knowledge and addressing health beliefs, enhancing self-regulation skills and potential of individuals, and social facilitation through family, community, and health care providers (Ryan, 2009; Ryan et al., 2011).

This study's sample population included 315 individuals that have come to CHEMED Health Center's adult internal medicine department for a primary care visit within the dates of November 1, 2013 through October 31, 2014, and have received

behavioral health care by a BHC within CHEMED Health Center's integrated behavioral health care model. Data for this study was collected using CHEMED Health Center's MicroMD EMR and MicroMD Practice Management Systems (MicroMD, 2015). Hypotheses of this study were that there are relationships among individual variables and an initial BHC session, as well as follow-up behavioral health care sessions, and that among individual variables there are predictive variable characteristics of intensity of behavioral health care within an integrated behavioral health care model. Analytical tools used for this study included descriptive statistics, independent sample *t*-tests, Chi-square tests of independence, and multivariate logistic regression analysis (Gravetter & Wallnau, 2009).

Results of this study found how among the individual variables examined, the individual variables of obesity, diabetes, and hypertension were closely associated with behavioral health care intensity, and only payer type was found to be predictive of behavioral health care intensity within an integrated behavioral health care model. Gender, age, race, ethnicity, family size, poverty level, and a preexisting condition of tobacco use had no significant impact on utilization and intensity of behavioral health care within an integrated behavioral health care model. These results brought about this study's recommendations for PCPs to become aware of the impact an individual's payer type for health care services has on their likelihood of intensity of behavioral health care within primary care, and to take the necessary steps addressing behavioral health concerns regardless of an individual's payer type (Meyer et al., 2015), as well as familiarizing with the recent heath care coverage changes, making behavioral health care

more affordable to the general population (Melchert, 2015; Rozensky, 2014). Additionally, PCPs should identify preexisting conditions of obesity, diabetes, and hypertension and address any behavioral health component that may be connected (Jonas et al., 1997; Paine et al., 2015).

Study results from this study have implications for positive social change by providing insight for other health care facilities intending to adopt and sustain an integrated behavioral health care model, which would allow the health care facilities to provide overall better health care, making behavioral health more accessible, and freeing up the time of their PCPs so that they can expand their primary care to more individuals (Bryan et al., 2009; Clay, 2014; James & Folen, 2005; Robinson & Reiter, 2007; Vuorilehto et al., 2006). An integrated behavioral health care model would also help battle the stigma toward behavioral health care and limit geographic, cultural, and linguistic barriers toward behavioral health care utilization and intensity (Borschuk et al., 2015; Coons et al., 2004; Kenkel et al., 2005; Nardi, 2010; Pomerantz et al., 2014). Additionally, study results from this study have implications for positive social change by providing the health care community, governmental agencies, and the education and training community within professional psychology to gain better knowledge and insight adopting and sustaining an integrated behavioral health care model (Melchert, 2015; Rozensky, 2014).

In conclusion, shifts within our current style of health care delivery is necessary, and applying an integrated behavioral health care style of health care delivery, such as

through an integrated behavioral health care model would be a good first step (Rozensky, 2014). Utilizing Andersen's behavioral model of health care use (Andersen & Newman, 1973) and the integrated theory of health behavior change (Ryan, 2009), this study highlighted the benefits of an integrated behavioral health care model, as well as identified individual variables that serve as barriers toward behavioral health utilization and intensity within an integrated behavioral health care model. Further research into other potential barriers of behavioral health care utilization and intensity within an integrated behavioral health care model would be beneficial as our current health care system merges toward an integrated behavioral health care style of health care delivery.

References

Advisory Committee on Interdisciplinary, Community-Based Linkages. (2010). Preparing the interprofessional workforce to address health behavior change: Ensuring a high quality and cost-effective healthcare system. Rockville, MD: Bureau of Health Professions. Retrieved from http://www.hrsa.gov/advisory committees/bhpradvisory/acicbl/index.html

Alegría, M., Roter, D. L., Valentine, A., Chen, C. N., Li, X., Lin, J., ... & Shrout, P. E. (2013). Patient–clinician ethnic concordance and communication in mental health intake visits. *Patient education and counseling*, *93*(2), 188-196. Retrieved from http://www.sciencedirect.com/science/article/pii/S0738399113002760

Alexander, C. L., Arnkoff, D. B., & Glass, C. R. (2010). Bringing psychotherapy to primary care: Innovations and challenges. *Clinical Psychology: Science and Practice, 17,* 191–214. doi:10.1111/j.1468-2850.2010.01211.x

Alvidrez, J., Shumway, M., Morazes, J., & Boccellari, A. (2011). Ethnic disparities in mental health treatment engagement among female sexual assault victims. *Journal of Aggression, Maltreatment & Trauma, 20,* 415–425. doi:10.1080/ 10926771.2011.568997

American College of Physicians. (2013). An internist's practical guide to understanding health system reform. Retrieved from https://www.acponline.org/advocacy/ where_we_stand/understanding_reform.htm

American Heart Association (2014). Condition: About high blood pressure. Retrieved from http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/AboutHighBloodPressure/About-High-Blood-Pressure_UCM_002050_Article.jsp

American Psychological Association. (2002). Ethical principles of psychologists and code of conduct. *American Psychologist, 57*, 1060-1073. doi:10.1037/0003-066X.57.12.1060

American Psychological Association. (2016). Primary Care Association (PCA) initiative. Retrieved from http://www.apa.org/practice/programs/rural/primary-care.aspx

American Psychological Association, Presidential Task Force on Integrated Health Care for an Aging Population. (2008). Blueprint for change: Achieving integrated health care for an aging population. Washington, DC: Author. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/e582542010-001

Angantyr, K., Rimner, A., Nordén, T., & Norlander, T. (2015). Primary care behavioral health model: Perspectives of outcome, client satisfaction, and gender. *Social Behavior and Personality*, *43*(2), 287-302. doi:10.2224/sbp.2015.43.2.287 doi:http://dx.doi.org.ezp.waldenulibrary.org/10.2224/sbp.2015.43.2.287

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior, 36,* 1–10. Retrieved from http://web.a.ebscohost.com.ezp.waldenulibrary.org/ehost/pdfviewer/pdfviewer?sid=82ccc888-3240-4dee-91e9-5eb771d6c570%40sessionmgr4001&vid=28&hid=4101

Andersen, R. M. (2008). National health surveys and the behavioral model of health services use. *Medical Care, 46,* 647–653. doi:10.1097/MLR.0b013e31817a835d

Andersen, R. M., & Newman, J. F. (1973). Societal and individual determinants of medical care utilization in the United States. *Milbank Quarterly, 51,* 95–124. Retrieved from http://www.milbank.org/uploads/documents/QuarterlyCentennial Edition/ Societal%20and%20Indv.pdf

Barrett, B. &Young, M. S. (2012). Past-year acute behavioral health care utilization among individuals with mental health disorders: Results from the 2008 national survey on drug use and health. *Journal of Dual Diagnosis, 8*(1), 19-27. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1080/15504263.2012.648438

Blount, A., & Miller, B. (2009). Addressing the workforce crisis in integrated primary care. *Journal of Clinical Psychology in Medical Settings, 16,* 113-119. doi:10.1007/s10880-008-9142-7

Blount, A., Schoenbaum, M., Kathol, R., Rollman, B. L., Thomas, M., O'Donohue, W., & Peek, C. J. (2007). The economics of behavioral health services in medical settings: A summary of the evidence. *Professional Psychology: Research and Practice, 38,* 290 –297. doi:10.1037/07357028.38.3.290

Borschuk, A. P., Jones, H. A., Parker, K. M., & Crewe, S. (2015). Delivery of behavioral health services in a pediatric primary care setting: A case illustration with adolescent depression. *Clinical Practice in Pediatric Psychology, 3*(2), 142-153. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/cpp0000087

Braddock, C. H., & Snyder, L. (2005). The doctor will see you shortly: The ethical significance of time for the patient-physician relationship. *Journal of general internal medicine, 20*(11), 1057-1062. Retrieved from http://onlinelibrary.wiley.co m/doi/10.1111/j.1525-1497.2005.00217.x/epdf

Bray, J. H., Frank, R. G., McDaniel, S. H., & Heldring, M. (2004). Education, practice, and research opportunities for psychologists in primary care. In R. G. Frank, S. H. McDaniel, J. H. Bray, & M. Heldring (Eds.), *Primary care psychology.* Washington DC: American Psychological Association. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/10651-001

Bridges, A. J., Gregus, S. J., Hernandez Rodriguez, J., Andrews, A. R. III, Villalobos, B. T., Pastrana, F. A., & Cavell, T. A. (2015). Diagnoses, intervention strategies, and rates of functional improvement in integrated behavioral health care patients. *Journal of Consulting and Clinical Psychology, Mar 16, 2015.* doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/a0038941

Bryan, C. J., Morrow, C., & Appolonio, K. K. (2009). Impact of behavioral health consultant interventions on patient symptoms and functioning in an integrated family medicine clinic. *Journal of Clinical Psychology, 65*(3), 281-293. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1002/jclp.20539

Carrier Clinic. (2013). *Carrier Clinic Community Health Needs Assessment.* Retrieved from http://carrierclinic.org/documents/CarrierClinicCHNAFINAL12.10.2013.pdf,

Castillo, V., Martínez-García, A., & Pulido, J. (2010). A knowledge-based taxonomy of critical factors for adopting electronic health record systems by physicians: A systematic literature review. *BMC Medical Informatics and Decision Making, 10,* 60. doi:10.1186/1472-6947-10-60

Center for Health Education, Medicine, and Dentistry. (2015). About CHEMED. Retrieved on March 15, 2015, from http://www.chemedhealth.org/about.php

Centers for Disease Control and Prevention. (2014). Division of nutrition, physical activity, and obesity: defining adult overweight and obesity. Retrieved from http://www.cdc.gov/obesity/adult/defining.html

Centers for Disease Control and Prevention. (2015). Basics about diabetes: what is diabetes? Retrieved from http://www.cdc.gov/diabetes/basics/diabetes.html

Cherokee Health Systems. (2015). Integrated care. Retrieved on March 15, 2015, from http://www.cherokeetraining.com/

Chiles, J. A., Lambert, M., & Hatch, A. L. (1999). The impact of psychological interventions on medical cost offset: A meta-analytic review. *Clinical Psychology: Science and Practice, 6*, 204–220. doi:10.1093/clipsy.6.2.204

Clay, R. A. (2014). Integrating psychology and primary care saves money in Oregon. *Monitor on Psychology*, *45*(2), 11. Retrieved from http://www.apa.org/monitor/2014/02/integrating-psychology.aspx

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/0033-2909.112.1.155

Cook, B. L., Doksum, T., Chen, C. N., Carle, A., & Alegria, M. (2013). The role of provider supply and organization in reducing racial/ethnic disparities in mental health care in the U.S. *Social Science and Medicine, 84,* 102-109. doi:10.1016/j.socscimed.2013.02.006

Coons, H. L., Morgenstern, D., Hoffman, E. M., Striepe, M. I., & Buch, C. (2004). Psychologists in women's primary care and obstetrics and gynecology: Consultation and treatment issues. In R. Frank, S. H. McDaniel, J. H. Bray, & M. Heldring (Eds.), Primary care psychology. Washington, DC: American Psychological Association Publications. doi:10.1037/10651-011

Corrigan, P. W., Druss, B. G., & Perlick, D. A. (2014). The impact of mental illness stigma on seeking and participating in mental health care, *Psychological Science in the Public Interest, 15*(2) 37– 70. doi:10.1177/1529100614531398

Corrigan, P. W., & Rao, D. (2012). On the self-stigma of mental illness: stages, disclosure, and strategies for change. *The Canadian Journal of Psychiatry, 57*(8), 464-469. Retrieved from http://web.a.ebscohost.com.ezp.waldenulibrary.org/ehost/pdfviewer/pdfviewer?sid=ccf54085-6dcf-4083-bd2b0eb7b7eec0e8%40sessionmgr4004&vid=9&hid =4212

Corso, K. A., Bryan, C. J., Corso, M. L., Kanzler, K. E., Houghton, D. C., Ray-Sannerud, B., Morrow, C. E. (2012). Therapeutic alliance and treatment outcome in the primary care behavioral health model. *Families, Systems, & Health, 30*(2), 87-100. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/a0028632

Cox, J., Adams, E., & Loughran, M. J. (2014). Behavioral health training is good medicine for counseling trainees: An exploration of two curricular experiences in interprofessional collaboration. *Journal of Mental Health Counseling, 36,* 115–129. doi:http://dx.doi.org/10.17744/mehc.36.2.c426q74431666762

Cree, L., Brooks, H. L., Berzins, K., Fraser, C., Lovell, K., & Bee, P. (2015). Carers' experiences of involvement in care planning: A qualitative exploration of the facilitators and barriers to engagement with mental health services. *BMC Psychiatry, 15,* 208. doi:10.1186/s12888-015-0590-y

D'Amour, D., & Oandasan, I. (2005). Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept. *Journal of Interprofessional Care, 19,* 8–20. doi:10.1080/13561820500081604

Dean, B. B., Lam, J., Natoli, J. L., Butler, Q., Aguilar, D., & Nordyke, R. J. (2009). Review: Use of electronic medical records for health outcomes research a literature review. *Medical Care Research and Review*, *66*(6), 611-638. doi:10.1177/1077558709332440

Dwight-Johnson, M., Sherbourne, C. D., Liao, D., & Wells, K. B. (2000). Treatment preferences among depressed primary care patients. *Journal of General Internal Medicine, 15*(8), 527-534. doi:10.1046/j.1525-1497.2000.08035.x

Elhai, J. D., & Ford, J. D. (2007). Correlates of mental health service use intensity in the national comorbidity survey and national comorbidity survey replication. *Psychiatric Services, 58,* 1108–1115. doi:10.1176/appi.ps.58.8.1108

Elhai, J. D., Voorhees, S., Ford, J. D., Min, K. S., & Frueh, B. C. (2009). Sociodemographic, perceived and objective need indicators of mental health treatment use and treatment seeking intentions among primary care medical patients. *Psychiatry Research, 165,* 145–153. doi: 10.1016/j.psychres.2007

Elhai, J. D., Patrick, S. L., Anderson, S., Simons, J. S., & Frueh, B. C. (2006). Gender- and trauma-related predictors of use of mental health treatment services among primary care patients. *Psychiatric Services, 57,* 1505–1509. Retrieved from http://ps.psychiatryonline.org/doi/full/10.1176/ps.2006.57.10.1505

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior research methods, 39*(2), 175-191. Retrieved from http://www.uvm.edu/~dhowell/methods7/Supplements/GPower3-BRM-Paper.pdf

Ferrer, R. L. (2007). Pursuing equity: Contact with primary care and specialist clinicians by demographics, insurance, and health status. *Annals of Family Medicine, 5*(6), 492-502. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1370/afm.746

Fikretoglu, D., Elhai, J. D., Liu, A., Richardson, J. D., & Pedlar, D. (2009). Predictors of likelihood and intensity of past-year mental health service use in an active Canadian military sample. *Psychiatric Services, 60,* 358–366. doi:10.1176/appi.ps.60.3.358.

Fiore, M., Bailey, W., Cohen, S., Dorfman, S., Goldstein, M., Gritz, E., et al. (2000). Treating tobacco use and dependence. Clinical practice guideline. Rockville, MD:

U.S. Department of Health and Human Services, Public Health Service. doi:http://www.ncbi.nlm.nih.gov/books/NBK63952/

Fiscella, K., & Holt, K. (2007). Impact of primary care patient visits on racial and ethnic disparities in preventive care in the United States. *Journal of the American Board of Family Medicine, 20*(6): 587-597. doi:10.3122/jabfm.2007.06.070053

Fleury, M., Grenier, G., & Bamvita, J. (2015). Predictors of frequent recourse to health professionals by people with severe mental disorders. *The Canadian Journal of Psychiatry / La Revue canadienne de psychiatrie*, *60*(2), 77-86. Retrieved from http://web.a.ebscohost.com.ezp.waldenulibrary.org/ehost/detail/detail?vid=41&sid=ccf54085-6dcf-4083-bd2b-0eb7b7eec0e8%40sessionmgr4004&hid=4212&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=101142559&db=a9h

Ford, J. D., Tennen, H., Trestman, R. L., & Allen, S. (2005). Depression, anxiety, and alcohol use disorders prospectively predict potentially problematic utilization of primary and specialty medical services. *Social Science and Medicine, 61,* 1618–1625. doi:10.1016/j.socscimed.2005.03.017

Fries, J., Koop, C., & Beadle, C. (1993). Reducing health care costs by reducing the need and demand for medical services. *The New England Journal of Medicine, 15,* 321-325. doi:10.1056/NEJM199307293290506

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science, 18*(3), 233–239. doi:10.1111/j.1467-9280.2007.01882.x

Funderburk, J. S., Sugarman, D. E., Labbe, A. K., Rodrigues, A., Maisto, S. A., & Nelson, B. (2011). Behavioral health interventions being implemented in a VA primary care system. *Journal of Clinical Psychology in Medical Settings, 18,* 22-29. doi:10.1007/s10880-011-9230-y

Funk and Wagnalls New World Encyclopedia. (2002). *Race classification.* World Almanac Education Group, Inc.

Gary, F. (2005). Stigma: Barrier to mental health care among ethnic minorities. *Issues in Mental Health Nursing, 26,* 979 –999. doi:10.1080/01612840500280638

Gatchel, R. J., & Oordt, M. S. (2003). Clinical health psychology and primary care: Practical advice and clinical guidance for successful collaboration. Washington, DC: American Psychological Association. doi:10.1037/10592-000

Gleason, H., Hobart, M., Bradley, L., Landers, J., Langenfeld, S., Tonelli, M., & Kolodziej, M. (2014). Gender differences of mental health consumers accessing integrated primary and behavioral care. *Psychology, Health & Medicine, 19*(2): 146-152. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1080/13548506.2013.793371

Glueck, B. P. (2015). Roles, attitudes, and training needs of behavioral health clinicians in integrated primary care. *Journal of Mental Health Counseling, 37*(2), 175-188. Retrieved from http://web.a.ebscohost.com.ezp.waldenulibrary.org/ehost/detail/detail?vid=67&sid=ccf54085-6dcf-4083-bd2b0eb7b7eec0e8%40sessionmgr4004&hid=4212&bd ata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=2015-16073-007&db=psyh

Gravetter, F. J., & Wallnau, L. B. (2009). Statistics for the behavioral sciences (8th ed.). Belmont, CA: Wadsworth.

Greenhoot, A. F., & Dowsett, C. J. (2012). Secondary data analysis: An important tool for addressing developmental questions. *Journal of Cognition and Development, 13*(1), 2-18. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1080/15248372.2012.646613

Greist, J. H., Marks, I. M., Baer, L., Kobak, K. A., Wenzel, K. W., Hirsch, M. J., et al. (2002). Behavior therapy for obsessive-compulsive disorder guided by a computer or by a clinician compared with relaxation as a control. *Journal of Clinical Psychiatry*, *63*(2), 138–145. doi:10.4088/JCP.v63n0209

Gunn, W. B., & Blount, A. (2009). Primary care mental health: A new frontier for psychology. *Journal of Clinical Psychology, 65*(3), 235-252. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1002/jclp.20499

Hartley, D., Korsen, N., Bird, D., & Agger, M. (1998). Management of patients with depression by rural primary care practitioners. *Archives of Family Medicine*, *7*(2), 139. Retrieved from https://triggered.clockss.org/ServeContent?url=http://archfami.ama-assn.org%2Fcgi%2Fcontent%2Ffull%2F7%2F2%2F139

Heath, B., Wise Romero, P., & Reynolds, K. (2013). A standard framework for levels of integrated healthcare. Washington, DC: SAMHSA-HRSA Center for Integrated Health Solutions. Retrieved from http://www.integration.samhsa.gov/integrated-care-models/A_Standard_Framework_for_Levels_of_Integrated_Healthcare.pdf

Henke, R. M., Chou, A. F., Chanin, J. C., Zides, A. B., & Scholle, S. H. (2008). Physician attitude toward depression care interventions: Implications for implementation of quality improvement initiatives. *Implementation Science, 3*, 40. doi:http://dx.doi.org/10.1186/1748-5908-3-40

Hinshaw, S. P. (2005). The stigmatization of mental illness in children and parents: Developmental issues, family concerns, and research needs. *Journal of Child Psychology and Psychiatry, 46*, 714–734. doi:http://dx.doi.org/10.1111/j.1469-7610.2005.01456.x

Hunter, C. L., Goodie, J. L., Oordt, M. S., & Dobmeyer, A. C. (2009). Integrated behavioral health in primary care: Step-by-step guidance for assessment and intervention. Washington, DC: American Psychological Association. doi:http://dx.doi.org/10.1037/11871-000

Ignite Realtime (2015). Spark 2.7.1. Retrieved on June 18, 2015 from 2015http://www.igniterealtime.org/projects/spark/

Institute of Medicine. (2001). Health and behavior: The interplay of biological, behavioral, and societal influences. Washington, DC: National Academy Press. Retrieved from http://www.pprl.org/fileserv/Health%20and%20Behavior.pdf

Institute of Medicine. (1994). Defining primary care: An interim report. Washington, DC: National Academy Press. Retrieved from https://books.google.com/books?id=d1grAAAAYAAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Inter Organizational Practice Committee. (2016). Health Care Reform and Neuropsychology Toolkit. Retrieved from http://neuropsychologytoolkit.com/

James, L. C., & Folen, R. A. (2005). The primary care consultant: The next frontier for psychologists in hospitals and clinics. Washington, DC: American Psychological Association. doi:10.1037/10962-000

Jerant, A., Bertakis, K. D., Fenton, J. J., Tancredi, D. J., & Franks, P. (2011). Patient-provider sex and race/ethnicity concordance: a national study of healthcare and outcomes. *Medical care, 49*(11), 1012-1020. doi:10.1097/MLR.0b013e31823688ee

Jonas, B. S., Franks, P., & Ingram, D. D. (1997). Are symptoms of anxiety and depression risk factors for hypertension? Longitudinal evidence from the National Health and Nutrition Examination Survey I Epidemiologic Follow-up Study. *Archives of family medicine*, *6*(1), 43. Retrieved from https://triggered.clockss.org/ ServeContent?url=http://archfami.ama-assn.org%2 Fcgi%2Freprint%2F6%2F1%2F43.pdf

Jones D. R., Macias C., Barreira P. J., Fisher, W. H., Hargreaves, W. A., & Harding, C. M. (2004). Prevalence, severity, and co-occurence of chronic physical health problems of persons with serious mental illness. *Psychiatric Services, 55*(11), 1250-1257. doi:http://dx.doi.org/10.1176/appi.ps.55.11.1250

Kay-Lambkin, F. J., Baker, A. L., Lewin, T. J., & Carr, V. J. (2009). Computer-based psychological treatment for comorbid depression and problematic alcohol and/or

cannabis use: a randomized controlled trial of clinical efficacy. *Addiction, 104*(3), 378-388. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1111/j.1360-0443.2008.02444.x

Kelly, J. F., Coons, H. L. (2012). Integrated health care and professional psychology: Is the setting right for you? *Professional Psychology: Research and Practice, 43*(6), 586-595. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/a0030090

Kenkel, M. B., Deleon, P. H., Mantell, E. O., & Steep, A. E. (2005). Divided no more: Psychology's role in integrated health care. *Canadian Psychology/Psychologie canadienne, 46*(4), 189-202. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/h0087026

Krall, V., Christian, E., & Curtis, R. (2012). Important terminology and abbreviations. In R. Curtis & E. Christian (Eds.), *Integrated care: Applying theory to practice* (xxii–xxvi). New York, NY: Routledge.

Krupnick, J. L., & Melnikoff, E. (2012). Psychotherapy with low-income patients: Lessons learned from treatment studies. *Journal of Contemporary Psychotherapy, 42*, 7–15. doi:http://dx.doi.org/10.1007/s10879-011-9182-4

Le Meyer, O., Zane, N., Cho, Y. I., & Takeuchi, D. T. (2009). Use of specialty mental health services by Asian Americans with psychiatric disorders. *Journal of Consulting and Clinical Psychology, 77*(5), 1000-1005. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/a0017065

Ledoux, T., Barnett, M. D. Garcini, L. M., & Baker, J. (2009). Predictors of recent mental health service use in a medical population: Implications for integrated care. *Journal of Clinical Psychology in Medical Settings, 16,* 304-10. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1007/s10880-009-9171-x

Lindsay Nour, B. M., Elhai, J. D., Ford, J. D., & Frueh, B. C. (2009). The role of physical health functioning, mental health, and sociodemographic factors in determining the intensity of mental health care use among primary care medical patients. *Psychological Services, 6*(4), 243-252. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/a0017375.

Liu, J., Luo, L., Zhang, R., & Huang, T. (2013). Patient satisfaction with electronic medical/health record: A systematic review. *Scandinavian Journal of Caring Sciences, 27*(4), 785-791. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1111/scs.12015

Lo, K., & Fulda, K. G. (2008). Impact of predisposing, enabling, and need factors in accessing preventive medical care among U.S. children: results of the national survey of children's health. *Osteopathic Medicine and Primary Care, (2),* 12. doi:10.1186/1750-4732-2-12

Lynch, J. M., Askew, D. A., Mitchell, G. K., & Hegarty, K. L. (2012). Beyond symptoms: Defining primary care mental health clinical assessment priorities, content and process. *Social Science & Medicine, 74*(2), 143-149. doi:10.1016/j.socscimed.2011.08.043

Marks, I., Baer, L., Greist, J., et al. (1998). Home self-assessment of obsessive compulsive disorder: use of a manual and a computer-conducted telephone interview: two UK-US studies. *British Journal of Psychiatry, 172,* 406-412. doi:10.1192/bjp.172.5.406

Marks, I. M., Kenwright, M., McDonough, M., Whittaker, M., & Mataix-Cols, D. (2004). Saving clinicians' time by delegating routine aspects of therapy to a computer: a randomized controlled trial in phobia/panic disorder. *Psychological Medicine, 34*(1), 9-17. doi:http://dx.doi.org/10.1017/S003329170300878X

Melchert, T. P. (2015). Integrating behavioral health care into primary health care. In Biopsychosocial practice: A science-based framework for behavioral health care. Washington DC: American Psychological Association. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/14441-014

Melek, S. P., Norris, D. T., & Paulus, J. (2014). Economic impact of integrated medical-behavioral healthcare implications for psychiatry. Denver, CO: Milliman. Retrieved from https://ncpsych.memberclicks.net/assets/docs/IntegratedCare/full%20milliman%20report.pdf

Menard, S. (2000). Coefficients of determination for multiple logistic regression analysis. *The American Statistician, 54*(1), 17-24. doi:10.1080/00031305.2000.10474502

Meyer, O. L., Saw, A., Cho, Y., & Fancher, T. L. (2015). Disparities in assessment, treatment, and recommendations for specialty mental health care: Patient reports

of medical provider behavior. *Health Services Research, 50*(3), 750-767. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1111/1475-6773.12261

MicroMD. (2015). *About Henry Schein MicroMD PM, DMS & EMR Software Vendors.* Retrieved on March 29, 2015 from http://www.micromd.com/about-us.html

Mullin, D. J., & Funderburk, J. S. (2013). Integrated behavioral health in primary care. New York, NY: Springer.

Nardi, D. (2010). Health reform and Politics 101 for psychiatric nurse therapists. *Journal of Psychosocial Nursing and Mental Health Services, 48*(2), 8-9. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.3928/02793695-20100108-05

New Jersey Department of Human Services. (2005). Municipal chartbook of social and health indicators Ocean County, New Jersey. Retrieved from http://www.state.nj.us/humanservices/dmhas/publications/epidemiological/Municipal Chart Books/Ocean.pdf

Nicholson Foundation (2014). Healthcare: Service delivery reform. Retrieved on June 17, 2014 from https://thenicholsonfoundation.org/what-we-do/healthcare-service-delivery-reform

Nielsen, M., Langner, B., Zema, C., Hacker, T., & Grundy, P. (2012). Benefits of implementing the primary care patient-centered medical home: A review of cost and quality results, 2012. Retrieved from http://www.pcpcc.net/guide/benefits-implementing-primary-caremedical-home

Nordal, K. C. (2012). Healthcare reform: Implications for independent practice. *Professional Psychology: Research and Practice, 43,* 535–544. doi:10.1037/a0029603

Ocean County Community Health Improvement Plan. (2009). Issue Two: Mental health. Retrieved from http://www.ochd.org/SiteData/docs/CHIPFinal/904fb0280ab3e542/CHIP%20Final.pdf

Osgood-Hynes, D., Greist, J., Marks, I., et al. (1998). Self-administered psychotherapy for depression using a telephone-accessed computer system plus booklets: an open US-UK study. *Journal of Clinical Psychiatry*, *59,* 358-365. doi:http://dx.doi.org/10.4088/JCP.v59n0704

Paine, N. J., Watkins, L. L., Blumenthal, J. A., Kuhn, C. M., & Sherwood, A. (2015). Association of Depressive and Anxiety Symptoms with 24-Hour Urinary Catecholamines in Individuals with Untreated High Blood Pressure. *Psychosomatic medicine*, *77*(2), 136-144. doi: 10.1097/PSY.0000000000000144

Patient Protection and Affordable Care Act (Public Law No: 111–148, March 23, 2010).

Pomerantz, A. S., Kearney, L. K., Wray, L. O., Post, E. P., & McCarthy, J. F. (2014). Mental health services in the medical home in the Department of Veterans Affairs: Factors for successful integration. *Psychological Services, 11,* 243–253. doi:http://dx.doi.org/10.1037/a0036638

Price, M., Davidson, T. M., Ruggiero, K. J., Acierno, R., & Resnick, H. S. (2014). Predictors of using mental health services after sexual assault. *Journal of*

Traumatic Stress, 27(3), 331-337. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1002/jts.21915

Ray-Sannerud, B., Dolan, D., Morrow, C., Corso, K., Kanzler, K., Corso, M., & Bryan, C. (2012). Longitudinal outcomes after brief behavioral health intervention in an integrated primary care clinic. *Families, Systems, & Health, 30*, 60-71. doi:http://doi.org/fznmb3

Reschovsky, J. D., & O'Malley, A. S. (2008). Do primary care physicians treating minority patients report problems delivering high-quality care? *Health Affairs 27*(3), 222-231.

Robinson, P. J., & Reiter, J. T. (2007). Behavioral consultation and primary care: A guide to integrating services. New York, NY: Springer. doi:http://dx.doi.org/10.1007/978-0-387-32973-4

Robinson, P. J., & Strosahl, K. D. (2009). Behavioral health consultation and primary care: Lessons learned. *Journal of Clinical Psychology in Medical Settings, 16*(1), 58-71. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1007/s10880-009-9145-z

Rodgers, B. L. (2005). Developing Nursing Knowledge: Philosophical Traditions and Influences. Philadelphia, PA: Lippincott Williams & Wilkins.

Rozensky, R. H. (2014). Implications of the Patient Protection and Affordable Care Act: Preparing the professional psychology workforce for primary care. *Professional Psychology: Research and Practice, 45*(3), 200-211. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/a0036550

Ryan, P. (2009). Integrated theory of health behavior change: Background and intervention development. *Clinical Nurse Specialist, 23*(3): 161–172. doi:10.1097/NUR.0b013e3181a42373

Ryan, P., Weiss, M., Traxel, N., & Brondino, M. (2011). Testing the integrated theory of health behaviour change for postpartum weight management. *Journal of Advanced Nursing, 67*(9), 2047-2059. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1111/j.1365-2648.2011.05648.x

Saegert, S. C., Adler, N. E., Bullock, H. E., Cauce, A. M., Liu, W. M., & Wyche, K. F. (2006). Report of the APA task force on socioeconomic status. Retrieved from http://www.apa.org/pi/ses/resources/publications/task-force-2006.pdf

Schick, M. (2014). A census of Jewish day schools in the United States 2013-2014. Retrieved on July 8, 2015 from http://avichai.org/knowledge_base/a-census-of-jewish-day-schools-in-the-united-states-2013-14-2014/

Schomerus, G., Appel, K., Meffert, P. J., Luppa, M., Andersen, R. M., Grabe, H. J., & Baumeister, S. E. (2013). Personality-related factors as predictors of help-seeking for depression: A population-based study applying the behavioral model of health services use. *Social Psychiatry and Psychiatric Epidemiology*, *48*(11), 1809-1817. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1007/s00127-012-0643-1

Simon, G. E., VonKorff, M., & Durham, M. L. (1994). Predictors of outpatient mental health utilization by primary care patients in a health maintenance organization.

American Journal of Psychiatry, 151, 908–913. doi:http://dx.doi.org/10.1176/ajp.151.6.908

Stewart, D. W. (2012). Secondary analysis and archival research: Using data collected by others. In: APA handbook of research methods in psychology, (3). *Data analysis and research publication* (473-484). Washington DC: American Psychological Association. doi:http://dx.doi.org/10.1037/13621-024

Strosahl, K., Robinson, P., & Gustavsson, T. (2012). Brief interventions for radical change: Principals and practice of focused acceptance and commitment therapy. Oakland, CA: New Harbinger.

Tabachnick, B. G., & Fidell, L. S. (2007). Using multivariate statistics (5th Ed.). Boston: Pearson Education, Inc. Allyn and Bacon.

Torrence, N. D., Mueller, A. E., Ilem, A. A., Renn, B. N., DeSantis, B., & Segal, D. L. (2014). Medical provider attitudes about behavioral health consultants in integrated primary care: a preliminary study. *Families, Systems, & Health, 32*(4), 426-432. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1037/fsh0000078

Trau, R. N. C., Härtel, C. E. J., & Härtel, G. F. (2013). Reaching and hearing the invisible: Organizational research on invisible stigmatized groups via web surveys. *British Journal of Management, 24*(4), 532-541. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1111/j.1467-8551.2012.00826.x

Tucker, J. A., & Davison, J. W. (2000). Waiting to see the doctor: The role of time constraints in the utilization of health and behavioral health services. *Reframing health behavior change with behavioral economics*, 219-264.

Tully, M. A., Cupples, M. E., & Young, I. S. (2004). Promoting physical activity in primary care: How to get over the hurdles? *The Ulster Medical Journal, 73,* 1-3. (PMID: 15244117)

United States Census Bureau. (2008). 2008 American community survey. Retrieved from http://www.census.gov/acs/www/data_documentation/2008 _release/

United States Census Bureau. (2010a). Lakewood township, Ocean County, New Jersey. Retrieved from http://www.census.gov/quickfacts/#table/PST045214/34 029 38550,00

United States Census Bureau. (2010b). U.S. census bureau reports men and women wait longer to marry. Retrieved from http://www.census.gov/newsroom/releases /archives/families_households/cb10-174.html

United States Census Bureau. (2015). Poverty definition. Retrieved from http://www.census.gov/hhes/www/poverty/methods/definitions.html

United States Department of Health and Human Services. (2001). Mental health: Culture, race, and ethnicity – a supplement to mental health: A report of the Surgeon General. Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK44243/

Vittinghoff, E., & McCulloch, C. E. (2007). Relaxing the rule of ten events per variable in logistic and cox regression. *American Journal of Epidemiology, 165* (6), 710-718. doi:10.1093/aje/kwk052

Vogt, F., Hall, S., & Marteau, T. M. (2005). General practitioners' and family physicians' negative beliefs and attitudes towards discussing smoking cessation with patients:

A systemic review. *Addiction, 100,* 1423-1431. doi:10.1111/j.1360-0443.2005.01221.x

Vuorilehto, M. S., Merartin, T. K., & Isometsa, E. T. (2006). Suicidal behaviour among primary-care patients with depressive disorder. *Psychological Medicine, 36,* 203–210. doi:10.1017/S0033291705006550

Waheed, W., Hughes-Morley, A., Woodham, A., Allen, G., & Bower, P. (2015). Overcoming barriers to recruiting ethnic minorities to mental health research: A typology of recruitment strategies. *BMC Psychiatry,15.* doi:10.1186/s12888-015-0484-z

Walden University (2015a). Dissertation guidebook. Retrieved on September 20, 2015, from http://academicguides.waldenu.edu/researchcenter/osra/phd

Walden University (2015b). Psychology research: Databases: Articles & more. Retrieved on September 21, 2015, from http://web.a.ebscohost.com.ezp.waldenulibrary.org/ehost/search/advanced?sid=282cc859-d468-4c93-b102-4c76aeb0589f%40sessionmgr4003&vid=0&hid=4212

Walden University Institutional Review Board. (2016). Institutional review board for ethical standards in research. Retrieved on February 10, 2016 from http://academicguides.waldenu.edu/researchcenter/orec

Wang, P. S., Demler, O., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2006). Changing profiles of service sectors used for mental health care in the

United States. *American Journal of Psychiatry, 163,* 1187–1198. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1176/appi.ajp.163.7.1187

Wang, P. S., Lane, M., Olfson, M., Pincus, H. A.,Wells, K. B., & Kessler, R. C. (2005). Twelve-month use of mental health services in the United States: Results from the national comorbidity survey replication. *Archives of General Psychiatry, 62*, 629–640. doi:10.1001/archpsyc.62.6.629

Ward-Zimmerman, B., & Cannata, E. (2012). Partnering with pediatric primary care: Lessons learned through collaborative colocation. *Professional Psychology: Research and Practice, 43,* 596–605. doi:http://dx.doi.org/10.1037/a0028967

Weiner, I. B. (2005). Client variables. In M. J. Lambert (Ed.), Bergin and Garfield's handbook of psychotherapy and behavior change (194–226). New York, NY: Oxford University Press. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1080/10503300512331335075

Whiteside, M., Mills, J., & McCalman, J. (2012). Using secondary data for grounded theory analysis. *Australian Social Work, 65*(4), 504-516. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1080/0312407X.2011.645165

World Health Organization. (2008). The world health report 2008: primary health care now more than ever. World Health Organization. Retrieved from http://www.who.int/whr/2008/en/

Yeung, A., Yu, S. C., Fung, F., Vorono, S., & Fava, M. (2006). Recognizing and engaging depressed Chinese Americans in treatment in a primary care setting.

International Journal of Geriatric Psychiatry 21(9), 819-23. doi:http://dx.doi.org.ezp.waldenulibrary.org/10.1002/gps.1566

Zaff, J. F., Blount, R. L., Phillips, L., & Cohen, L. (2002). The role of ethnic identity and self-construal in coping among African American and Caucasian American seventh graders: An exploratory analysis of within-group variance. *Adolescence, 37*(148), 751-774.Retireved from http://web.a.ebscohost.com.ezp.waldenulibrary.org/ehost/pdfviewer/pdfviewer?scf54085-6dcf-4083-bd2b-0eb7b7eec0e8%40sessionmgr4004&vid=203&hid=4212

Appendix A: NIH Certificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Joseph Shafer** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 09/16/2012

Certification Number: 989659

Appendix B: Letter of Cooperation from CHEMED Health Center

CHEMED
CENTER FOR HEALTH EDUCATION MEDICINE & DENTISTRY

[redacted]

July 27, 2015

Dear Joseph Shafer,

We are pleased to work with you in your capacity as a behavioral health provider, providing behavioral health care services within our behavioral health department, as part of our organization's operations during our behavioral health department's designated hours. We agree to supervise and assume responsibility for these activities within the scope of our regular operations.

We understand that you will also be undertaking a Walden University student researcher role that is separate from your behavioral health provider role.

To support this research inquiry, our organization is also willing to release de-identified data to you, as outlined in the attached Data Use Agreement. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

Mr. Yaakov Schwartz, CIO
CHEMED Health Center
[redacted]

Appendix C: Data Use Agreement

DATA USE AGREEMENT

This Data Use Agreement ("Agreement"), effective as of July 27, 2015 ("Effective Date"), is entered into by and between Joseph Shafer ("Data Recipient") and CHEMED Health Center ("Data Provider"). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set ("LDS") for use in research **in accord with laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program.** In the case of a discrepancy among laws, the agreement shall follow whichever law is more strict.

1. Definitions. Due to the study's affiliation with Laureate, a USA-based company, unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the USA "HIPAA Regulations" and/or "FERPA Regulations" codified in the United States Code of Federal Regulations, as amended from time to time.

2. Preparation of the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program.

3. Data Fields in the LDS. **No direct identifiers such as names may be included in the Limited Data Set (LDS).** In preparing the LDS, Data Provider shall include the **data fields specified as follows,** which are the minimum necessary to accomplish the research: gender, age, race, ethnicity, family size, poverty level, payer source for health care, obesity, diabetes, hypertension, tobacco use, primary care visits, behavioral health consultations, and follow-up behavioral health sessions.

4. Responsibilities of Data Recipient. Data Recipient agrees to:

    a. Use or disclose the LDS only as permitted by this Agreement or as required by law;

    b. Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;

    c. Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;

    d. Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and

    e. Not use the information in the LDS to identify or contact the individuals who are data subjects.

5. Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose the LDS **for its Research activities only.**

6. Term and Termination.

   a. Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.

   b. Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.

   c. Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.

   d. For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.

   e. Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

7. Miscellaneous.

   a. Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

   b. Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.

   c. No Third Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.

d. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

e. Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER

Signed: YS

Print Name: YAAKOV SCHWARTZ

Print Title: CHEMED, CIO

7/27/15

DATA RECIPIENT

Signed: Joseph Shafer

Print Name: Joseph Shafer

Print Title: Behavioral Health/ Data Recipient

7/27/15