2021

A Retrospective Analysis of Integrative Group Medical Visits for Low-Income Patients With Anxiety Disorders in Primary Care

Annamma Udaya Thomas
Walden University

Walden University

College of Health Professions

This is to certify that the doctoral dissertation by

Annamma Udaya Thomas

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Leslie Hussey, Committee Chairperson, Nursing Faculty
Dr. Janice Long, Committee Member, Nursing Faculty
Dr. Marilyn Losty, University Reviewer, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2021

Abstract

A Retrospective Analysis of Integrative Group Medical Visits for Low-Income Patients With Anxiety Disorders in Primary Care

by

Annamma Udaya Thomas

MSN, MPH, Johns Hopkins University School of Nursing and School & Bloomberg School of Public Health, 2004

BA, College of Wooster, 1993

BS, Binghamton University, 2000

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

Interdisciplinary Health

Walden University

September 2021

Abstract

High utilization of the emergency department (ED) by patients with anxiety symptoms has brought attention to mental health access disparities among low-income racially/ethnically diverse populations. The health system in this study attempted to increase access to mental health care with integrative group medical visits (IGMVs), a nonpharmacological intervention with biomedical care consultation, health education, and peer support. The purpose of this retrospective comparative analysis, guided by an integrative health equity in primary care framework, was to determine whether patients with diagnoses of anxiety who attended four or more IGMVs had reduced nonemergent ED utilization, reduced prescribed doses of benzodiazepine (BZD), and reduced severity of anxiety symptoms compared to usual care (no IGMV attendance). The 2017-2018 records of a sample of 85 patients (43 IGMVs, 42 usual care) with anxiety diagnoses were reviewed from one U.S. racially/ethnically diverse health system database. Nonemergent ED utilization, BZD use, and anxiety symptom severity data were analyzed using repeated-measures analysis of variance. Results demonstrated that the IGMV group had no statistically significant difference in ED utilization ($p = 0.82$), BZD use ($p = 0.67$), and anxiety symptom severity ($p = 0.89$) compared to usual care. Future research could focus on cost-effectiveness studies of allopathic versus nonallopathic practitioners facilitating IGMVs for integrated behavioral health in the primary care home for low-income diverse populations. This study contributes to social change by adding to the literature on the effect of IGMV access on behavioral health and health outcomes for racially/ethnically diverse low-income patients.

A Retrospective Analysis of Integrative Group Medical Visits for Low-Income Patients With Anxiety Disorders in Primary Care

by

Annamma Udaya Thomas

MSN, MPH, Johns Hopkins School of Nursing & Bloomberg School of Public Health, 2004

BA, College of Wooster, 1993

BS, Binghamton University, 2000

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

Interdisciplinary Health

Walden University

September 2021

Dedication

I dedicate this dissertation project, and labor of love, to the patients whom I serve, especially those whom I served in an integrative group medical visit setting. The majority of the primary care patients whom I serve are underserved Latino, Spanish-only speaking adults in Southeast Florida. While this inquiry is not about them directly, they inspired me to look into the subject of anxiety and access to mental health services in a different part of the United States with a more robust program of integrative group visits.

Listening to their stories of separation, partner or other family deportation, poor access, discrimination, and misinformation over their lifetime of care spurred this investigation into their mental health. While not all their stories were negative and they did highlight positive experiences also, the negative certainly outweighed the positive, and I noticed that the positive experiences were with minority practitioners. As we have seen over time in research, racially/ethnically diverse persons experience suboptimal care while less often, even from other racially/ethnically diverse practitioners. This is concerning and points to a need for increased vigilance and perhaps more implicit bias and other diversity and inclusion training. It also points to the need for equitable healthcare, increased focus on mental health for all to reduce opportunities to be treated differently, and improved access to mental health integrated with primary care to reduce transportation costs and time.

I heard my patients share with me their consumption of nonprescribed benzodiazepines (BZDs), getting BZDs over the counter in other countries, abuse of BZDs over decades, carrying BZDs into the United States, or getting supplies from

friends or family. This prompted me to realize that perhaps the standard notion of BZD abuse as a “White problem” was not accurate and led to this doctoral project inquiry.

I also dedicate this to all disadvantaged persons nationally and internationally, as inspired by the integrative health practitioner community, Integrative Medicine for the Underserved (IM4US), and my previous international public health work, to honor all indigenous communities and practices in their wealth of knowledge and practices over thousands of years that help to inform our work on blending allopathic with natural medicine approaches to create stronger and less vulnerable societies everywhere.

Acknowledgments

I would first like to acknowledge my parents, who both immigrated to this country when I was a toddler. They gave me a strong foundation of discipline and love, which has translated into how I approach life, studies, and work. They taught me from a young age to read, listen, experience, reflect, and write. They are now both octogenarians, and I am grateful for their continued support and guidance in my life. Along with my ancestors, they keep me grounded and rooted.

I would also like to thank my siblings for their love and support. While we live far apart, we manage to stay in frequent contact, and they, along with my parents, also helped to raise me and teach me the ropes as we navigated being young immigrants with all the challenges of being brown in a rural setting. While we have all chosen different professions, it is by no accident that they are all in the service and education realms.

One a daily basis, the most critical support has been my daily yoga and meditation practice, along with the company and care of my partner/spouse, Miguel. He has pushed me to complete this journey, and in doing so signed up to provide regular and nutritious meals to keep this scholar practitioner in motion. He has also made sure that we laugh daily and has ensured that we take intermittent dancing breaks and end the evening with relaxing tea together.

My weekly rock has been my chair with her quick and accurate feedback. Dr. Hussey has both inspired and corrected me along the way. I am forever grateful. I am also grateful for my other committee members, Dr. Janice Long and Dr. Marilyn Murphy, who have also contributed and gotten me to this stage of defending my work. I am

indebted to all of them and Walden University for being the online educational institution that could carry me through this path. Walden's focus on social change inspired me to choose Walden.

My education would not have been possible without the financial and thematic support of the ANA MFP SAMHSA Fellowship. The advisors and other fellows have become like another family. I would especially like to thank Patty Wilson for introducing me to the Fellowship, encouraging me to apply, and providing encouragement along the way. She and Shaquita Starks have also volunteered to be there for me to practice my oral defenses. My MFP Mentors, Phyllis Raynor (primary) and Bridgette Brawner (secondary), have also provided detailed and critical feedback on my drafts and thought processes. In my final year, Phyllis and I had monthly calls to process and improve my delivery and address any gaps that might be present. Having her extra lens pre and post submissions to my chair and committee has been priceless. Overarching support from my MFP Program Director, Janet Jackson, and advisors, Dr. Frieda Outlaw and Dr. Hossein Yarandi, has also been priceless. The statistical guidance, reviews, and support of Dr. Yarandi during my coursework and my thesis were immeasurable.

Special thanks to my friend and Hopkins sister, Jessica Roman, for informal support and sharing of resources when asked and even when not asked when she saw something relevant to my work. To my IM4US colleague, Ariana Thompson-Lastad, a medical sociologist, who also researches integrative group medical visits and has been a tremendous support sharing resources, bibliographies to comb, and relevant articles or investigators to speak with. She led me to conversations with both Paula Gardiner and

Maria Chao, who are members of the IM4US community and key researchers in the field of integrative group medical visits. These conversations and following their work to identify future research opportunities was enlightening. While I cannot name them all, for the past 5 years, my IM4US tribe has also provided me with a rich in heart, mind, and spirit community all focused on volunteering time and effort to leveling the playing field for diverse underserved communities around the country. My previous IM4US Board of Directors, whom I met with monthly, kept me on my toes and active with the integrative community of practitioners that we serve. Thanks to each one of you, Jeffrey Geller, Priscilla Abercrombie, Tara DeMarco, Molly Burke, Deborah Gracia, Jude Bornstein-Chau, Steven Chen, and Ariana Thompson-Lastad, for your encouragement and support as we led this organization during these unprecedented times!

Finally, I owe a great debt to the clinical site that permitted me to utilize their data for analysis, especially to the senior researcher, Michael Changaris, without whose support, mentorship, and volunteer heart to assist with collecting and deidentifying the data this project could not have been completed. The experience with the site IRB was a reflection of the challenges and opportunities that we are all presented with during any endeavor to unlock data in a respectful and safe way, honoring the patients whom the information comes from. It's been a privilege and honor. Thank you.

Funding for Annamma Udaya Thomas' contribution was made possible in part by SAMHSA grant #5T06SM060559-07.

Table of Contents

Part 1: Overview

Introduction

Equitable access to appropriate, evidence-based, affordable, and integrated behavioral health care in primary care for low-income patients is lacking (Farber et al., 2017). Researchers and the U.S. government have recommended the integration of behavioral health in primary care, but integration has been limited (Linman et al., 2019). Group treatment models have been successful in behavioral health settings, but access to behavioral care is often delayed (Dark et al., 2017).

The purpose of this retrospective, quantitative comparative analysis study was to investigate whether an integrative medicine model of care increased behavioral health access and improved health outcomes for low-income patients with anxiety within the context of their primary care medical home (PCMH). The research questions were as follows:

1. What effect does integrative group medical visits (IGMVs) have on the number of nonemergent visits to the emergency department (ED) in 1 year in low-income adult patients with anxiety disorders versus low-income adult patients with anxiety disorders receiving usual care?
2. What is the effect of IGMVs on the benzodiazepine (BZD) prescription dose in 1 year in low-income adult patients with anxiety disorders compared to low-income adult patients with anxiety disorders receiving usual care?

3. What is the effect of IGMVs on anxiety disorder symptom severity reduction in 1 year compared to usual care groups in low-income adult patients with anxiety disorders?

Using secondary data from 2017-2018 from a U.S. health system with an established integrated behavioral health (IBH) and IGMV program, I hypothesized that ED visits, benzodiazepine use, and anxiety symptom severity would be different in the IGMV group compared to a group of low-income adults who received usual care without IGMVs.

One in every five Americans has a mood disorder (NIH, 2017). Mood disorders rank as the second highest reason for ED utilization among safety-net institutions versus sixth in non-safety-net institutions (Sutton et al., 2016). In the United States, safety-net institutions are organizations that provide patient care to those who are uninsured and underserved (Altman & Lewin, 2000). Anxiety disorders, often comorbid with mood disorders, have the highest global burden of disease, currently at about 7% both nationally and globally with a 3-month prevalence of up to 10% and one third of Americans experiencing an anxiety disorder in their lifetime (Alonso et al., 2018; Chisholm et al., 2016; National Institutes of Health [NIH], 2017).

While safety-net institutions may serve patients at all income levels, the majority of racially/ethnically diverse low-income patients receive care within safety-net institutions (Sutton et al., 2016). Unlike patients with psychiatric disorders who are hospitalized, those with anxiety disorders who are not hospitalized are discharged back to the community (Simpson et al., 2014). With delays into primary care, patients who have not had their mental health needs met often end up back in the ED with the likelihood of

being given BZDs to relieve their anxiety (Dark et al., 2017). For many patients, the ED has become the provider for unmet mental health care needs. The ED as a mental health provider illuminates the first entry to a larger systemic problem (Stone et al., 2012) of healthcare segregation, making available healthcare separate and not equal.

Systemic Concerns of Inequality

EDs are not routinely equipped or skilled for mental health care services that may be required by the patients who seek care in the ED. The diverse population with a wide range of presenting mental ailments sets the stage for a systemic problem that goes beyond the ED scope of patient care. Additionally, high utilization increases the economic burden on the health system (Dark et al., 2017) or the patients and families that utilize them.

Secondly, regularly prescribed BZDs for anxiety contribute to drug use, misuse, and an increase in morbidity and mortality alone or with opioid use. Disparities in access to mental health assessment and treatment have been documented in lower socioeconomic status patients and racially/ethnically diverse patients. Specifically, the standard of initiation of treatment within 14 days and engagement within 30 days is lower for African Americans, Native Americans, and Latinos (Acevedo, 2015).

Complementary and integrative health (CIH) models of care in primary care, while not novel, are not the standard of care, despite evidence of a variety of integrative treatment modalities improving health outcomes, primarily pain and mental health (Hull et al., 2019). Specific to this study, the benefits of mindfulness meditation have been widely studied and published (Goyal et al., 2014; Kabat-Zinn et al., 1985; Miller et al.,

1995). Goyal et al.'s (2014) systematic review covered 47 trials, finding moderate evidence for mindfulness meditation as a means of anxiety reduction. While models of clinical practice have been disseminated, a framework for the healthcare system and educational system to incorporate CIH has not been realized. More recently, research has shown that low-income racially/ethnically diverse populations respond well to incorporation of mindfulness meditation practices (Bowen et al., 2014; Charlot et al., 2018).

Treatment for Low-Income or Racially/Ethnically Diverse Patients

Low-income racially/ethnically diverse patients have increased barriers to care, experience inequities in care provided, and experience longer wait times for post ED follow-up appointments (James et al., 2010; Saluja et al., 2019). Compared to non-safety-net ED utilization, higher utilization of the ED for mental health care by the underserved brings attention to the problem of mental health access disparity among low-income racially/ethnically diverse populations (Cook et al., 2017; Richardson et al., 2003) compared to middle- and high-income individuals who do not return or access mental health services from an ED. Iturralde et al. (2019) found that patients with anxiety were independently associated with more ED utilization and reported them to be disproportionately found among the highest cost patients in a large, diverse sample of health system users.

Treatment for Opioid or Benzodiazepine Misuse or Abuse

Singularly or concurrently with opioids, BZD use and misuse are a population health and systemic concern. In a retrospective study of medical expenditure data from

2011, 2013, and 2015, persons with anxiety had an almost 10-fold odds ratio for opioid BZD concurrent use (Vadiei & Bhattacharjee, 2020). As with opioids, efforts have also been underway to curb the use of BZDs, which are often used concurrently with opioids and increase morbidity and mortality from overdose (Vadiei & Bhattacharjee, 2020).

BZDs are modulators of the neurotransmitter gamma-aminobutyric acid and act as tranquilizers and sedatives (Fluyau et al., 2018). BZDs were designed as a rescue medication primarily for panic attacks and sleep or preprocedural sedation, respectively (Fluyau et al., 2018). However, due to the highly effective short-term results and addictive properties of BZDs, these substances have become misused and abused.

According to the 2018 National Survey on Drug Use and Health, an estimated 5 million adults aged 18 and over misused BZDs (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019). In countries of origin (of many racially/ethnically diverse persons), BZDs are available over the counter without a prescription from a licensed practitioner (Moreno et al., 2018). This challenges the current evidence that BZD use is more prevalent in non-Hispanic Whites, as those data come from medical expenditure reviews. Resident immigrants while traveling purchase BZDs (or receive BZDs from contacts that have traveled abroad) that their U.S. primary care provider (PCP) may not have prescribed for them. Since the recognition of the opioid epidemic, many PCPs no longer prescribe controlled substances. If BZDs are used longer than 1 month routinely, stopping abruptly may produce seizures or life-threatening delirium (Fluyau et al., 2018).

Addiction to BZD is a factor in high-cost utilization when supplies run out or alternatives to addressing anxiety are not available (Dark et al., 2017). In prescriptions alone, BZD are the most misused and abused medications (Fluyau et al., 2018) leading to a substance use disorder. Cryptomarkets, otherwise known as the hidden or dark web online, represent another portal for access to BZDs that is difficult to investigate; such markets were not included in this study but are a known source contributing to ongoing abuse of BZDs (Van Hout & Hearne, 2017). Therefore, the aforementioned SAMHSA (2019) estimate was the only calculable figure.

BZDs are not a recommended first-line intervention for anxiety. However, practitioners often prescribe BZDs prior to any of the recommended first-line agents such as selective serotonin reuptake inhibitors (SSRIs) or serotonin and norepinephrine reuptake inhibitors (SNRIs; Blackwelder & Bragg, 2016). While BZDs are considered a short-term method, early initiation and the propensity for addiction have led to inappropriate long-term use and subsequently substance use disorders (Bouvier et al., 2018).

Complementary or Alternative Treatment Options

In efforts to improve their mental health or due to wait times for a consultation, many patients may, alone or in conjunction with prescribed medications, self-medicate with home remedies, teas, herbs, and nutritional supplements that they may not discuss with their practitioner. More than half report that their practitioner has never asked them about their herb or supplement use (Pruitt et al., 2018). While many are relatively safe, others have potentiating effects, interactions, or alternatively no evidence-based effect

(Pruitt et al., 2018). Self-medicating with both allopathic and nonallopathic substances may result and has resulted in serious and/or fatal consequences (Alford et al., 2016; Fluyau et al., 2018).

Healthcare practitioners receive little education on herbs, supplements, and integrative approaches (Pruitt et al., 2018). Creating a practice environment for patients with support from their peers that increases options and trust (Lavoie et al., 2013; Thompson-Lastad, 2018) to disclose self-treatments aids in the discovery of alternative coping mechanisms that are critical in addressing this mental health access problem.

Mental Health Access

Access to mental health care that provides appropriate, evidence-based, step-wise care for anxiety disorders may address this systemic problem. The ED provider provides rescue medication and in some cases a navigator to find an appropriate medical home. However, the wait time to see a psychiatric practitioner or even a PCP is conducive to repeat ED visits until care is established.

In many cases, patients prefer that their PCP manage their mental health care (Buche et al, 2017). The integration of primary care and behavioral health (via a team-based care model) as IBH has been established as a strategy for social change to improve health outcomes and reduce high-cost utilization (Buche et al., 2017). Once care is established, group medical visits (GMV) with a PCP are spaces, whether virtual or in person, that have been created in some health systems to allow patients increased access to their medical home.

Background

Anxiety disorders are a growing population health concern, the prevalence of which has surpassed that of depression disorders, with women having twice the rate of men (NIH, 2017). Of note, according to the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), posttraumatic stress disorder (PTSD) has been removed from anxiety disorders classification and is now classified under trauma-related disorders (American Psychiatric Association [APA], 2013). In the DSM-5, anxiety disorders include primarily childhood separation anxiety disorder, selective mutism, and specific phobias, whereas in adulthood there are higher percentages of panic disorder, agoraphobia, social anxiety disorder (SAD), general anxiety disorder (GAD), substance/medication-induced anxiety disorder, anxiety disorder due to a medical concern, and anxiety disorder unspecified (Alonso et al., 2018; APA, 2013; Bandelow et al., 2017).

In practice, PCPs commonly use GAD-7 and additional questions to diagnose anxiety. If the diagnosis is unclear, the diagnosis "unspecified anxiety disorder" is often utilized. In research, common instruments for measuring anxiety in participants include the Hamilton Anxiety Scale and GAD-7 (Sampaio et al., 2016; Spitzer et al., 2006; Webster et al., 2017). The current study's sample of patients was low-income adults already diagnosed by the PCP with any of the aforementioned adult anxiety disorders.

After the age of 50, GAD is the most common anxiety disorder (Bandelow et al., 2017). Anxiety often presents in somatic forms, such as palpitations, tremors, dizziness, nausea, muscle tension, shortness of breath, headaches, chest pain, digestive complaints,

and sweating (Bandelow et al., 2017; Gates et al., 2016). Investigating the somatic complaints often delays recognition and hence appropriate mental health care for anxiety disorders. Patients' awareness of their own somatic symptoms related to anxiety, such as shortness of breath or pain and an inability to manage those symptoms, often results in overutilization of emergency services for acute relief (Dark et al., 2017).

Group Medical Visits

The Agency for Healthcare Research Quality (AHRQ) has recommended GMV to address patient access to care, increase patient and practitioner satisfaction in care delivered, and decrease high-cost health care utilization, including ED and specialty visits (AHRQ, 2018; Shaw et al., 2014). GMV are shared medical appointments (SMA) with a group of patients being seen simultaneously, lasting from 1-2 hours with a range in attendance from five to 16 patients with some common diagnoses and/or common interest in receiving an intervention (AHRQ, 2018).

There are various GMV types, which include drop-in, diagnosis-based, transdiagnostic, and intervention-based group visits (AHRQ, 2018), all of which are done either in person or virtually. GMV combine biomedical care and consultation with health education and peer support. For example, a group of patients may be coming to the group because they all have chronic pain and simultaneously would like to receive acupuncture for their chronic pain condition. Other chronic pain groups may focus on acceptance of pain or mindfulness techniques to cope with pain and participate in activities to uncover their source of pain (i.e., contributors of pain via nutrition, work, or home life activities)

and share experiences and community resources (Gardiner et al., 2014) and are referred to as an integrative group medical visit (IGMV).

Significant positive health outcomes that have been documented in systematic reviews include increased patient satisfaction, increased patient knowledge, reduction in symptom severity, weight reduction, and increased healthy eating habits (Parikh et al., 2019). There is evidence that GMV participants (diabetes patients and elders) have lower ED utilization and hospitalizations while active in groups (Edelman et al., 2012; Gardiner et al., 2019; Shaw et al., 2014).

While there is little counterevidence of the benefits of GMV, Canadian researchers surveyed 111 patients and found that patients reported both individual visits and GMV to be positive (Remick & Remick, 2014). There was only a slightly higher preference for GMV, and using repeated measure analysis of variance (ANOVA) for analysis resulted in no difference (Remick & Remick, 2014). However, it should be noted that all of the patients were patients of the same psychiatrist who were having their follow-up appointments in groups versus individually to reduce the wait time to see the psychiatrist, and this was not in the context of a PCMH or IBH setting.

While not in the context of IGMVs, in an earlier systematic review and meta-analysis, Goyal et al. (2014) found moderate evidence of meditation improving anxiety, depression, and pain. There was no significant evidence for substance use, positivity, eating habits, and weight reduction. Goyal et al. did recommend that stronger study designs were needed for clinicians to give stronger recommendations to patients on the benefits of meditation.

Context Within Patient-Centered Medical Homes

In the past 20 years, practitioners serving the underserved have offered GMV in the context of primary care that is deemed a PCMH. PCMHs include private and government community clinics, national health service, and federally qualified health centers (FQHCs; Wadsworth et al., 2019). PCMH certification requires that there is a health care team for each patient coordinating care to ensure that there are no care gaps and addressing different aspects of their health, including social determinants of health (Linman et al., 2019).

With the utilization of GMV in PCMH, researchers have noted that the efficiency of care increases as care team members work together with multiple patients at a time, creating access and peer support simultaneously (Parikh et al., 2019). Earlier GMVs focused on diabetes, pregnancy and parenting, and cancer. Since 1990, different models, including transdiagnostic groups (focused on stress reduction), teaching kitchen groups (preparing low-cost, nutritious meals), and integrative pain management groups have burgeoned. Research on the effectiveness of these and other groups has also been employed, with a surge noted after 2014 (Parikh et al., 2019).

Integrated Behavioral Health

A survey of PCMH found that less than half of the patients have onsite access to a behaviorist, social worker, or psychologist on the care team (Kessler et al., 2014). For those who have IBH at the PCMH, there is improved adherence to treatment plans and improved health outcomes. Zeiss and Karlin (2008) found that patients preferred IBH at the location where they received their primary care (colocated care). From their study on

anxiety-related ED use, Dark et al. (2017) concluded that an IBH approach would reduce ED visits. Access to GMV has increased IBH in primary care and allowed patients the convenience of having their primary and mental health care in one location (colocation). In addition, in a U.S. national health statistics report on over 88,000 adults, patients reported more interest in CIH practices to manage their health, with yoga being the most prevalent CIH practice (Clarke et al., 2015).

Integrative Group Medical Visits

IGMVs build on the growing use of GMVs for chronic care. While IGMVs have the same basic components of GMVs, they include one or more nonpharmacological interventions. Two-thirds of the IGMVs studied included a mindfulness meditation component (Thompson-Lastad, 2019). Hence, in the current study, IGMVs with mindfulness meditation were compared to usual care. IGMVs have been implemented in response to interest in CIH, which remains inaccessible to many people due to limited insurance coverage and high out-of-pocket costs. While elements such as awareness, deep breathing, focused attention, meditation, and mindful movement are essentially free to do and require no literacy, access to learning the steps and the benefits is typically expensive and not included in mainstream healthcare. Utilizing a patient's diagnosis to offer them mindfulness meditation in the IGMV setting creates a scenario in which both the care team and the patients benefit and the PCP may bill insurance.

Results of multiple studies have indicated that IGMVs may contribute to improving patient experience, improving population health, reducing costs, and increasing practitioner satisfaction (Chao et al., 2019; Cornelio-Flores et al., 2018;

Dresner et al., 2016; Gardiner et al., 2017, Gardiner et al., 2019; Gareau et al., 2016; Geller et al., 2015; Mehl-Madrona et al., 2016; Rowley et al., 2016; Shaw et al., 2014; Strickland et al., 2016).

Synthesizing the Literature

The relevant literature for the field of IBH in primary care draws from various disciplines, which highlights the interdisciplinary nature of this inquiry. Some of the key literature for this inquiry, from the pioneers of infusing integrative health into GMV, was published between 2011 and 2014, while the majority of the literature synthesized was primarily published within the last 5 years. Hence, I have included some key literature from previous years to explain the progression of this research. The fields of nursing, health psychology, primary care, CIH, behavioral medicine, behavioral economics, health care utilization, and public health were explored for relevant scholarship on the IBH in primary care by way of IGMV to address anxiety disorders and improve health outcomes in predominantly low-income racially/ethnically diverse adults.

In a qualitative review of earlier group visit research (1974-2004), Jaber et al. (2006), along with other findings, reported a decrease in high-cost utilization, including specialty care, urgent care, and ED utilization, illuminating improved management by both the team and the patient. These were statistically significant primarily on elders, those with headaches and diabetes, but not specifically low-income patients. In the past 10 years, there has been a surge of research in GMV, including IGMV research on racially/ethnically diverse low-income populations. Gardiner et al. (2019) focused on chronic pain and depression, which highlighted outcomes related to utilization, patient

satisfaction, and health outcomes in low-income racially/ethnically diverse patients in the primary care/PCMH context.

ED utilization has been the primary reported cost measure because it is the most expensive (Ernst et al., 2015) and it is a patient-driven versus provider-driven cost. ED utilization in patients with chronic pain and depression utilizing IMGV mindfulness-based stress reduction (MBSR) based IGMV was reduced and was statistically significant at 9 weeks compared to the control but not at 21 weeks (Gardiner et al., 2019). While Gardiner et al. (2019) mentioned the cost savings via decreased opioid use and reduced ED utilization, the cost savings was not quantified. Gardiner et al. (2019) and Mehl-Madrona et al. (2016) specifically recommended more emphasis on cost reduction research.

While there have been a variety of programmatic types of IGMV in practice (Thompson-Lastad, 2019), the majority of published IGMV research has been on depression and chronic pain, inclusive of emphasis on opioid use. Reducing opioid consumption, considering the opioid crisis, has been shown to be associated with IGMV in a recent randomized controlled trial (RCT; Gardiner et al., 2019). While anxiety disorders have been listed as comorbidities (Chao et al., 2019; Gardiner et al., 2019), there has not been a focus on people with anxiety disorders. However, while not discussed or analyzed, there was a significant reduction in anxiety symptoms post 3 months of IGMV (Chao, 2019). While opioid reduction was tracked, BZD reduction was not tracked (M. Chao, personal communication, May 7, 2020).

Some patients with anxiety disorders respond well to SSRIs and SNRIs alone or along with nonpharmacological interventions. Multiple studies have been completed to investigate the best taper method for discontinuation of BZDs. Unfortunately, the researchers who completed a meta-analysis of these studies found very little evidence that anything is better than placebo (Welsh et al., 2018); however, nonpharmacological methods were not included in this meta-analysis. Welsh et al. (2018) pointed most favorably to paroxetine and imipramine, which were both found to be helpful in tapering.

While mixed reviews, Welsh et al. (2018) also suggest the use of melatonin for difficulty sleeping because insomnia is a frequently co-occurring diagnosis and has a low side effect profile. The use of propranolol had mixed outcomes as well, but investigators reported that it could be used on a trial basis because the options are limited. Lastly, buspirone had a worse taper outcome than placebo (Welsh et al., 2018). Yoga, with an emphasis on meditation and controlled breath, was the only intervention better than placebo with greater outcomes with increased frequency (Saeed et al., 2019).

GAD may be classified as minimal, mild, moderate, or severe via the GAD-7 scale (Spitzer et al., 2006), which is the most common instrument utilized by PCPs for diagnosing patients. It consists of seven questions, and the highest score is 21. The threshold for mild anxiety is greater than or equal to 5, moderate is 10-14, and severe is above 15 (Spitzer et al., 2006). In research, common instruments for measuring anxiety of participants include the Hamilton Anxiety Scale and GAD-7 (Sampaio et al., 2016; Webster et al., 2017).

GAD is often diagnosed first in the primary care setting but often goes unrecognized and untreated (Bandelow et al., 2017). When the PCP, team, and patient are unable to manage anxiety and the symptoms worsen, a referral to psychiatry is the standard practice. While not an exact proxy, symptom severity may be tied closely to the number of BZD doses that a patient requires. Additionally, recording BZD reductions post mindfulness meditation is an important consideration because there is a dearth of information in the literature. Therefore, the third area that was investigated in this study was symptom severity changes for those who attended IGMV compared to those in usual primary care in the PCMH setting to report something meaningful about levels of anxiety pre and post exposure to IGMV.

Aside from psychiatric medication use, other aspects of mental and emotional health have been documented in IGMV research with statistically significant improvements in mental health quality of life measured by the SF-36 with reductions in depression and loneliness (Gardiner et al., 2019; Geller et al., 2011) and a decrease in pain medication usage (Gardiner et al., 2019). IGMVs have taken on favorable roles in creating more access to CIH in the mainstream primary care setting.

Several studies have demonstrated a reduction in anxiety with the utilization of yoga (Adams et al., 2015; Bukar et al., 2019; Kuppusamy et al., 2020). Bukar et al. (2019) also found similar results in an inpatient psychiatric setting with significant reductions in anxiety lasting up to 1 day, which resulted in the hiring of a yoga instructor as a staff member. Bukar et al. noted that BZD use was reduced, but because it was not

measured directly, they suggested that further research be conducted on how yoga and meditation affect the reduction of BZD use.

Components of yoga practice such as mindfulness meditation and meditative movements are often included in IGMVs and IGMV research (Chao et al., 2015; Chao et al., 2019; Gardiner et al., 2019; Saper et al., 2017; Thompson-Lastad, 2019). The ancient practice of yoga began approximately 5,000 years ago in India with meditation and breath work or *pranayama* (Wimberly et al., 2018), but over time, the postures (*asanas*) were added. Meditative breath work has been observed to increase parasympathetic activity while reducing sympathetic activity (Kuppusamy et al., 2020). Researchers have also reported significant increases with meditation practice over time. Modern yoga is the union of breath work with an intentional sequence of meditative movements.

The progression of both qualitative and quantitative research has illuminated a need for describing the phenomenon of groups in primary care, the inclusion effect (Geller, 2019), or the access to integrative health with the guidance of the PCP and peers. In a sentinel study conducted in Canada, Lavoie et al. (2013) reported that both practitioners and patients expressed the benefits of having GMV in a PCMH. Themes extracted from the interviews were increased self-management, improved information sharing, increased trust of providers, less isolation, and peer support. More recently, Thompson-Lastad (2018) found with both practitioners and patients that the peer interaction and support changed the power dynamics to allow for cocreating health plans, which resulted in revelations of health determinants, equity issues, community resources, and what motivates or hinders patients in behavioral change.

Research has already been strongly in favor of the increase in patient satisfaction with the use of IGMV, exposing patients to other community members, increasing coping and empowerment, reducing loneliness, and having an opportunity to share experiences and community resources with each other (Dresner et al., 2016, Geller et al., 2011, 2015; Housden et al., 2017; Lestoquoy et al., 2017; Thompson-Lastad, 2018). Housden et al. (2017) found that nurse practitioner (NP)-led GMVs encouraged interprofessional practice and served to deconstruct, as Thompson-Lastad (2018) also noted, some of the traditional primary care hierarchies between practitioners and patients. Orzechowski (2016) also found that there were decreased wait times for appointments from 3 months to 1 month in a feasibility study examining mindfulness groups for patients with fibromyalgia.

This retrospective study examined three aspects of the problem of behavioral health access in one health system in the United States (also included in Thompson-Lastad's [2019] national survey of locatable IGMVs), which utilized IGMVs to provide greater behavioral health access to their safety net patients. These three aspects may be viewed in terms of how these dependent variables, ED utilization, BZD dose, and patients' level of anxiety symptoms, responded to the independent variable, IGMV, in a purposeful sampling of patient data from their 2017-2018 historical electronic health records of IGMV practice from a safety-net health system that has had both IBH in primary care and an IGMV program for several years.

Key Variables

The key variables for this study were bridged over the three manuscripts, while the independent variable remained constant. The independent variable was the type of mental health service (IGMV or usual care) for patients with an anxiety diagnosis who received mental health services at the safety net with IBH in primary care/PCMH.

The first dependent variable was ED utilization the year prior and after a year of participation in the IGMV. ED utilization was defined as nonemergent visits to the ED that did not require hospitalization. The second dependent variable was reported prescription dose of BZD just prior to the year and after participation in IGMV sessions. The third variable was the composite score of the four anxiety-related questions on the annual health-screening tool prior to IGMV sessions and post IGMV sessions. The health screening tool was a merging of the Staying Healthy/Screening, Brief Intervention, and Referral to Treatment screening tool, and all patients are given the screening on an annual basis. Questions 2, 7, 8, and 9 are related to anxiety (Appendix A). The time frames for the usual care group's ED utilization, BZD use, and anxiety symptom severity scores mirrored those of the IGMV group.

Construct

Mindfulness meditation was the constant integrative modality that was threaded throughout the IGMV sessions and was defined as observing thoughts in a nonjudgmental and nonreactive way to bring a sense of heightened awareness to the present state of emotions and sensations (Barnby et al., 2015; Jayatilake, 2017; Kabat-Zinn et al., 1985). Kabat-Zinn et al. (1985) noted reductions in anxiety symptoms in 20 of 22 patients who

were referred into an 8-week MBSR program by their physicians at both postintervention and a 3-month follow up.

Barnby et al. (2015) found that mindfulness meditation, through neuroimaging, reduces both anxiety and ruminating thoughts by inhibiting activity in the posterior regions and increasing activity and connectivity in the prefrontal and frontal regions of the brain. In addition to the aforementioned evidence of neuroplasticity, neuroimaging of experienced meditators demonstrated an increased thickness of the prefrontal cortex with more practice over time and a resultant delay in cortical thinning that comes with the typical aging process (Brandmeyer & Delorme, 2020).

Evidence supports that mindfulness meditation modulates reactivity to inner thoughts, perceptions, and the wandering mind (Brandmeyer & Delorme, 2020). In as little as 3 months, Lutz et al. (2018) found that subjects had increased focus and decreased emotional reactivity (Lutz et al., 2018), whereas Brandmeyer and Delorme (2017) found similar results within eight sessions.

Slowing down emotional reactivity is a critical outcome for those with acute or chronic anxiety symptoms (Tolin et al., 2021). Travis et al. (2018) reported that an RCT on meditation showed an increase in brain integration and reduced distress. Likewise, reducing distress and stress reduces cortisol release, glucose, and blood pressure. Similar to other chronic diseases, with anxiety, if root causes and alternative coping skills are not brought to awareness and addressed, the stress on the mind and body may result in other health-related consequences such as shorter telomeres (Wang et al., 2017), loss of memory, high blood pressure, elevated glucose, and organ damage. Apart from chronic

pain and depression, anxiety is also often found as a comorbid condition with diabetes and hypertension (Ogle et al., 2018).

Conceptual Framework and Theory

From the inception of the GMV model, the majority of the GMV research has been void of theory or frameworks, with one exception being the mention of diffusion of innovations theory (Housden et al., 2017). Rather, the focus has been on the pragmatic models of the groups themselves. For example, Ornish and colleagues utilized a cardiac rehab model that demonstrated signs of reversing heart disease with a vegetarian diet, exercise, and group support (Ornish et al., 1990). Noffsinger (2012) outlined different practice models that may incorporate GMV as an ongoing manner of managing patient panels, reducing wait times, and utilizing multiple team members to operationalize increased access, improved quality, and reduced costs compared to the typical individual office visit model.

Ornish et al. (1990), Noffsinger (2012), and others have laid the groundwork for building practice models that incorporate drop-in group medical visits to assist the individual provider to manage their panel more effectively or alternative monthly chronic care group visits that group patients by diagnosis or utilization behavior (Noffsinger, 2012). As GMV have been incorporated into primary care and specialty care for the past 20 years, more developments have arisen utilizing the aforementioned practice models while infusing integrative medicine and health modalities like Gardiner et al (2019) infusion of MBSR and virtual assistant and Geller's (2011) empowerment model, allowing patients to decide what activities or modalities they would like to improve their

health and well-being. Reflecting on these practice models, I suggested a framework and theory to encapsulate this evolution and propel forward into sustainable and transformative practice possibilities for improving both mental health and population health in an exceedingly diverse patient population.

Premise for a New Framework

The framework that I proposed was a combination of one conceptual framework and two theories. The first looked at the system from a population health level (Quadruple Aim), the second provided a critical explanation of the context and social determinants of health that intersect at the community level (intersectionality theory), and the third focused on the mental accounting that happens at the person level (mental accounting theory). Together, they provided an interdisciplinary explanation to describe structural priorities of the mainstream system and the outcomes that occur. Within this new framework, different interventions can be inserted, such as IGMV, to explore how the intervention fits within the context of structural inequities and healthcare system priorities.

The Quadruple Aim Framework

The Quadruple Aim Framework (QAF) is an expansion of the Triple Aim developed by leaders at the Institute of Healthcare Improvement. The Quadruple Aim suggested a focus on the Triple Aim, which is improved patient experience, improved health outcomes, and reduced costs (Berwick et al., 2008), and then added higher practitioner satisfaction or care team well-being. The final aim was first described by

William Spinelli (2013) as the “phantom limb” and later formalized as an important consideration in reducing burnout of practitioners (Bodenheimer & Sinsky, 2013).

While all four aims of IGMVs have been researched, the aims of focus in this study may be categorized under the right side of Figure 1, improved health outcomes and reduced costs, but should still be seen in the context of the four aims of the QAF, as patient experience and care team well-being also affect the other aims indirectly or directly. In addition, the use of CIH modalities in the context of this framework influences the whole in delivering whole-person integrated care.

Figure 1

Quadruple Aim Framework

Note. Quadruple Aim (n.d.).

The theoretical basis for understanding the phenomena occurring with low-income racially/ethnically diverse patients (otherwise known as the *underserved*) in the context of the current health system is intersectionality theory. Intersectionality theory

provided a lens with which to look at the QAF, keeping in mind that safety-net hospital patients have different outcomes—for this study, specifically those who are underserved and have an anxiety diagnosis. The QAF frames the health care context in which people receive care; intersectionality theory provided a lens to view how some of the outcomes of how people receive care are explained, while mental accounting theory takes into consideration the ultimate choices that low-income patients are able to make when facing the structural challenges of their communities and their interactions with their local health care system.

Intersectionality Theory

Crenshaw coined the concept of intersectionality to view the intersection of race and gender as it relates to the marginalization of Black women (Crenshaw, 1989). Intersectionality theory has been adopted in the health professions to explain the complex way in which the social determinants of health such as economic stability, education level, environment, access to food and health care, and social networks (or lack thereof) interact with different aspects of a person's identity. The intersection of the social determinants of health with the multiple categories of labels placed on individuals shape the discriminatory experiences that some marginalized groups may face within health systems (Gkiouleka et al., 2018). Institutions have a significant and powerful role in their communities' population health outcomes.

Population health outcomes are not only determined by the care received, but also by the context, access to the appropriate care for the diagnosis in question, and the cost to the person, community, and society, which drives the cost of health care either up or

down. Patients have on average 10 visits before they receive an anxiety diagnosis (Alonso et al., 2018), resulting in a delay in appropriate treatment. Diagnosis is further delayed because most appointments are 1-3 months apart, which may contribute to interim increases in high-cost utilization.

Mental Accounting Theory

Another area which enlightens this conceptual framework, is that of behavioral economics. Elbel et al. (2014) concluded that low-income patients are particularly understudied when it comes to their health care choices and that vulnerable populations would benefit from assistance in making better health care choices. They drew on Thaler's (2016) notion of nudges to suggest that nudges are key in assisting patients in making better choices.

Thaler (2016) reinserted human psychology and behavior into the field of economics, reemphasizing the work of 18th century economist Smith to bring back the notion of the human drivers of economic choices (Barberis, 2018). The reasons that more low-income patients than middle to higher income patients go to the ED for nonemergent reasons that include mental health care may include factors such as transportation issues, a custom of going to hospitals versus outpatient facilities in their countries of origin, the proximity of the ED versus a primary care office, and/or lack of a PCP or insurance. Thaler's theory of mental accounting helps to explain why people make some of the choices that they make, some of which may be rational, but more often are not rational but reactive and based on emotion, pain, anxiety level, and what is important at the present moment, not long term. He recommended that health care practitioners provide

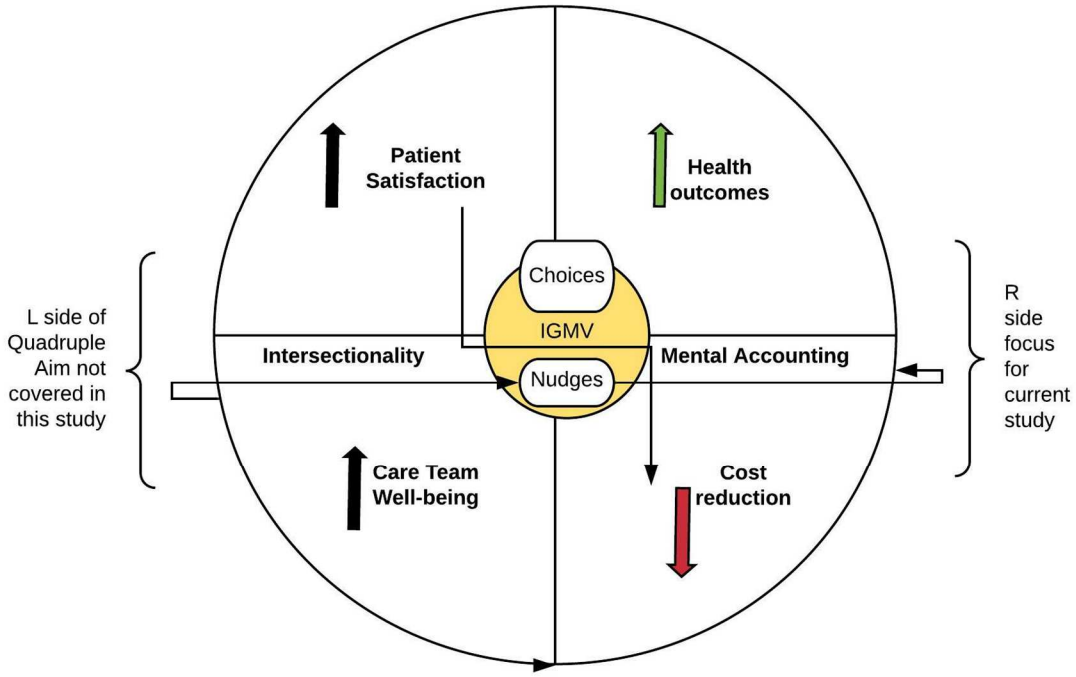
choice architecture to patients so that they may make more informed and better choices for their health.

Utilizing the theories of intersectionality and mental accounting to frame the research questions provided insight into the interaction of these concepts together as they relate to the two aims of health outcomes and cost reduction. These are concepts and theories steeped in the context of the capitalist system, which, by definition, do not support underserved, low-income racially/ethnically diverse patients. However, the accessibility of the expensive and expansive hospital systems and their EDs allow anyone to choose this location for their care (Stone et al., 2012), regardless of its utility to meet the needs presented.

Combining these lenses together opened a new way of viewing the current health care system and imagining addressing more holistic care within this context. Choice architecture combined with integrative and appropriate care may be communicated with nudges and in culturally diverse spaces where patients may feel safety, trust, and access to the care that is needed to address access and equity. Integration of the IGMV as a space that promotes choices frames the utility of IGMV for increasing mental health access and health equity for low-income racially/ethnically diverse patients. The new framework is the integrative health equity in primary care framework.

Figure 2

Integrative Health Equity in Primary Care Framework



The Gap

Recent literature revealed that there is lower ED utilization with IBH in the PCMH model (Gardiner et al, 2019; Serrano et al., 2018). Peterson and la Cour (2016) hypothesized that lower socioeconomic status would make a difference in participants' ability to take part in mindfulness meditation and breath work, but the results of their research did not support their assumptions. Further, the literature supported the IGMV format for increasing access and support for patients along with a reduction in ED utilization (AHRQ, 2018; Shaw et al., 2014).

What is unknown is whether statistically significant numbers of established patients with anxiety disorders attending IGMVs in the context of the IBH in PCMH had significantly lower ED utilization rates, significantly reduced BZD dose, and significantly reduced severity in symptoms compared to patients in the same healthcare system who had not attended IGMV and were receiving usual care. These are critical statistics for creating the evidence base needed for wider uptake of this model, if it indeed saved money, reduced medication usage, and improved lives at the population health level.

If IGMV demonstrated a reduction of ED utilization for those with anxiety disorders, the result could be a significant cost savings to safety-net institutions. The potential diffusion of IGMV by safety-net institutions could influence access to integrative mental health care. Whether in person or via telehealth groups, IGMVs are being integrated in primary care. The potential positive social change impact is greater access to integrative mental health care for the underserved, improved mental health outcomes, and reduction of nonemergent use of the ED.

Overview of the Manuscripts

The purpose of this retrospective quantitative comparative analysis was to determine whether patients with diagnoses of anxiety who have participated in IGMV, in the context of the PCMH, have reduced ED utilization for nonemergent care, reduced prescription dose of BZD, and reduced severity of symptoms compared to patients receiving usual care who did not participate in IGMV.

The interconnection between the three related research questions contributed to the discovery of how IBH in primary care via IGMV affected adult patients with anxiety

diagnoses in different aspects of how and where they receive their care. Usual care was defined as patients who were having their anxiety managed by their PCP only, as participation in psychotherapy groups was controlled for. Utilizing the right side aims (improved health outcomes and reduction of costs) of the QAF provided a context to visualize how these constructs and questions were interrelated.

The chosen research site has reported implementation of the tool Stay Healthy/Screening, Brief Intervention and Referral to Treatment, which is a combination of two validated tools that have been merged into one screening system (Department of Health Care Services [DHCS], 2019). The Screening, Brief Intervention and Referral to Treatment tool is used in primary care to identify patients needing timely interventions and referrals to relevant resources for substance use disorder and psychiatric disorders (Hargraves et al., 2017). Both tools have been through interrater and interscreener reliability checks. Internal testing and survey fatigue in combining the tools was also completed between 2016-2017, and all patients are mandated by the state to take the assessment annually (M. Changaris, personal communication, August 2, 2020).

The Stay Healthy Assessment is an individual health education and behavioral assessment that was developed by the DHCS in 1999 and updated in 2013 and is available in 10 languages (DHCS, 2019). All patients complete the combined Stay Healthy/Screening, Brief Intervention and Referral to Treatment tool annually. The questions related to anxiety were analyzed for the anxiety status of the participants before and after participation in IGMV groups (Appendix A). Given that this study was a

retrospective review and not a prospective study, collecting pre and post GAD-7 scores was not relevant, as patients had already been diagnosed with an anxiety disorder.

Through these three related inquiries, I investigated three aspects of anxiety care at two time points before and at the end of the year. First, nonemergent ED utilization related to anxiety concerns represented the degree of high-cost anxiety care at the tertiary level. Second, BZD prescribed dose related to provider-initiated and patient-felt need for controlled substance management of anxiety symptoms at the primary level. Lastly, anxiety symptom severity related to patient-felt level of wellness at the individual level.

Manuscript 1

Specific Problem

The problem of overutilization of ED for nonemergent care for those with anxiety diagnoses is a proxy for the search for mental health care for those with anxiety that is not available or accessible to low-income, racially/ethnically diverse populations in a safety-net community. Additionally, low-income racially/ethnically diverse patients have increased barriers to care, experience inequities in care provided, and experience longer wait times for post ED follow-up appointments (James et al., 2010). Compared to non-safety net ED utilization, higher utilization of the ED for mental health care by the underserved brings attention to the problem of mental health access disparity among low-income racially/ethnically diverse populations (Cook et al., 2017; Richardson et al., 2003) compared to middle- and high-income individuals who do not return or access mental health needs from an ED.

Research Question

What effect does IGMV have on the number of nonemergent visits to the ED in 1 year in low-income adult patients with anxiety disorders versus low-income adult patients with anxiety disorders receiving usual care?

Nature of the Study and Design

I conducted a quantitative retrospective, comparative analysis of retrospective data purposively sampled from 2017-2018 to compare care for adult low-income patients with anxiety disorders who received IGMV and adult low-income patients with anxiety disorders who received usual care. I used single stage sampling because the qualifying data were sent to me from the specified time frame between 2017 and 2018. Patients spend on average 6 to 9 months in a group cohort (Balasubramanian et al., 2017), and patients also completed annual surveys; therefore, pre and post years were selected for review.

Sources of Data

I received patient sociodemographics (Appendix B), patients' psychiatric disorder diagnoses, IGMV attendance over the year, and number of nonemergent visits to the ED for anxiety disorders from 2017-2018 for both the IGMV participants and the control group (usual care). The sources of the data were deidentified safety-net hospital records and associated outpatient records on number of nonemergent visits by those with anxiety diagnosis from the IGMV group and usual care group. Health center staff filtered by inclusion criteria and downloaded the data into Excel spreadsheets, which were then sent to me.

Manuscript 2

Specific Problem

The problem was use of BZD for anxiety versus access to nonpharmacological interventions that could potentially reduce the use of BZD in low-income populations in a safety-net community. In a U.S. national health statistics report of over 88,000 adults, patients reported more interest in CIH practices to manage their health, with yoga being the most prevalent CIH practice (Clarke et al., 2015).

However, nonpharmacological interventions in primary care are rarely accessible outside of the IGMV context. Patients are referred out to interventions that they are unable to afford or resort to medications from their PCP that are cheaper alternatives rather than accessing complementary and alternative care in the community.

Research Question

What is the effect of IGMV on the BZD prescription dose in 1 year in low-income adult patients with anxiety disorders compared to low-income adult patients with anxiety disorders receiving usual care?

Nature of the Study and Design

I conducted a quantitative retrospective, comparative analysis of retrospective data purposively sampled from 2017-2018 to compare care for adult low-income patients with anxiety disorders who received IGMV and adult low-income patients with anxiety disorders who received usual care. I used single stage sampling because the qualifying data were sent to me from the specified time frame between 2017 and 2018. Patients spend on average 6 to 9 months in a group cohort (Balasubramanian et al., 2017), and

patients also complete annual surveys; therefore, pre and post years were selected for review.

Sources of Data

I received sociodemographic data (Appendix B), patients' psychiatric disorder diagnoses, IGMV attendance over 1 year, and BZD prescription dose just prior to and post IGMV for the same time frames for both the IGMV participants and the control group (usual care). The sources of the data were deidentified safety-net hospital records and associated outpatient records, as well as pharmacy records on BZD dose by both the ED and PCP. Health center staff filtered the data by inclusion criteria and downloaded the data into Excel spreadsheets, which were sent to me.

Manuscript 3

Specific Problem

The problem is chronic uncontrolled anxiety in low-income adults who live in a safety-net community. Like depression, anxiety is a chronic disease. Anxiety disorders have the highest global burden of disease, currently at about 7% both nationally and globally with a 3-month prevalence of up to 10% and one third of Americans experiencing an anxiety disorder in their lifetime (Alonso et al., 2018; Chisholm et al., 2016; NIH, 2017). Patients have on average 10 visits before they receive an anxiety diagnosis (Alonso et al., 2018), resulting in delays in appropriate mental health treatment. Symptom severity refers to the presence and degree of anxiety symptoms as measured by Questions 2, 7, 8, and 9 on Adult Part 1 of the standard tool used at the practice site (Appendix A).

Research Question

What is the effect of IGMV on anxiety disorder symptom severity reduction in 1 year compared to usual care groups in low-income adult patients with anxiety disorders?

Nature of the Study and Design

I conducted a quantitative retrospective, comparative analysis of retrospective data purposively sampled from 2017-2018 to compare care for adult low-income patients with anxiety disorders who received IGMV and adult low-income patients with anxiety disorders who received usual care. I used single stage sampling because the qualifying data were sent to me from the specified time frame between 2017 and 2018. Patients spend on average 6 to 9 months in a group cohort (Balasubramanian et al., 2017), and patients also complete annual surveys; therefore, pre and post years were selected for review.

Sources of Data

I gathered patient sociodemographics (Appendix B), patients' psychiatric disorder diagnoses, IGMV attendance, and pre and post assessment of symptoms that were collected on each separate participant for the same time frames for both the IGMV participants and the control group (usual care). The sources of the data were deidentified safety-net hospital records and associated outpatient records of patients' survey results. Health center staff downloaded the survey data and sent them to me.

Significance

High-income countries such as the United States spend on average $50 per person per year on mental health prevention and treatment (Chisholm et al., 2016). However, the

global and national burden of disease for depression and anxiety are higher than for any other mental or neurological disorder, with females having a disproportionate prevalence of either depression or anxiety and the highest disability-adjusted life years (DALYs) rate (Whiteford et al., 2015).

Chisholm et al. (2016) purported that the limited focus on public mental health demonstrates a substantial gap between the need for prevention and treatment and the actual investment made. With 2015 baseline data, they extrapolated out to the year 2030 to see if the return on investment (ROI) would be worth investing more on those with both depression and anxiety (Chisholm et al., 2016). They found that the ROI for those with depression and/or anxiety would not only benefit with improved mental health status, but the improvements would translate into individual and population-level outcomes: increases in health life-years of work for the economy and large economic productivity (Chisholm et al., 2016).

The potential economic output and lives saved need to be taken into consideration. A recent RCT in Sweden also reported on the quality-adjusted life years and found that the mindfulness group was more cost effective on all measurements of their study, including but not limited to medication costs and costs of the visits (Saha et al., 2020). Chisholm et al.'s (2016) global systematic review reported an 80% gap in anxiety treatment and prevention in high-income countries. Chisholm et al. and Saha et al. (2020) both reported on the societal perspective of costs saved from sick leave and income gained from increased productivity. Chisholm et al. reported use of conservative projection models from 2016-2030 at only 5% increase in work productivity and

estimated that an average cost of $2 per person investment on anxiety prevention and treatment annually would result in a return on health value benefit at $50 billion.

The majority of adult GMV research has focused on diabetes (Vaughan et al., 2019). The majority of IGMV adult mental health research has focused on chronic pain and depression (Parikh et al., 2019), but the effect of these interventions on those with the comorbid diagnosis of anxiety has not been analyzed. However, more than half of persons with depression have the comorbidity of anxiety affecting approximately 40 million people in the United States (Anxiety and Depression Association of America [ADAA], 2020).

Research on racially/ethnically diverse populations participating in mindfulness meditation and IGMV is nascent. Given the rapid increase of racial/ethnic groups and their ever-growing mental health concerns, more research is needed in racially/ethnically diverse populations in the United States (Bucay-Harari et al., 2020; Guo et al., 2015). Additionally, while there is a plethora of literature on mindfulness practices for mental health for White persons, more research was needed on the use of mindfulness practices in low-income racially/ethnically diverse persons (Burnett-Zeigler et al., 2016; Ryan et al., 2018) with anxiety. The diversity of those who are categorized as Latinos or Asians has also grown, and hence more inclusion in research is needed (Bucay-Harari et al., 2020). The Hispanic Community Health Study/Study of Latinos is one example of a multicity trial that captured the diversity of anxiety-depression symptomatology within Latinos (Camacho et al., 2015).

Given the cost of high utilization and specialty mental health care, research was needed to identify which treatment interventions were effective in both improving health outcomes and containing costs, especially in those who are uninsured and underinsured. Currently, ineffective treatments are costing individuals their mental stability and society millions of dollars annually in lost economic output (Chisholm et al., 2016). The addition of mindfulness meditation practices as an adjunct or replacement in some cases to usual care (a control) needed to be investigated in larger sample sizes of low-income racially/ethnically diverse adult patients (Burnett-Zeigler et al., 2016).

Addressing and supporting people with anxiety disorders through an interdisciplinary approach in the community and integrating nonpharmacological methods fosters greater trust between racially/diverse populations and their practitioners and effects positive social change. Because there is already existing information on patients in different health systems, I reviewed retrospectively how a subset of patients may have benefited from such interventions over time, which not only contributed to addressing the gap in the literature, but also offered recommendations based on the findings for coordinated and cost-effective community care of those with anxiety disorders. I chose the research site where I collected my data because there were data on IGMV and sufficient patients with an anxiety disorder. Furthermore, this healthcare facility utilized IBH within a PCMH model and nurse practitioners and psychologists were coleads for the IGMV. Additionally, the site reported a racially/ethnically diverse low-income pool of patients, 50% of whom were Black, indigenous, or other persons of color.

Summary

The purposes of this retrospective quantitative comparative analysis were to determine whether patients with diagnoses of anxiety who had participated in an IGMV, in the context of the PCMH, had reduced ED utilization for nonemergent care, reduced doses of BZD, and reduced severity of symptoms after participation in IGMV compared to those in the same safety-net PCMH who did not participate in IGMV and were managed by their PCP with access to standard IBH (usual care).

The interconnection between the three related questions contributed to the discovery of how IBH in primary care with an infusion of the ancient practice of mindfulness meditation may or may not affect adult patients with anxiety diagnoses in different aspects of how and where they receive their care. This study falls under the QAF aims of addressing population (behavioral) health outcomes and reducing costs. Utilizing the right side aims (reduction of costs and improved health outcomes) of the QAF allowed viewing how these constructs and questions were interrelated. While some GMVs and IGMVs are being added to health systems, other health systems are slow to adopt this innovation or have discontinued this innovation from their practices for lack of quantitative evidence. The findings from this study could partially contribute to the quantitative research needed for evidence-based decision making on the continuation or discontinuation of IGMV at the current clinical site for the study because they only had one qualitative study of these groups.

Part 2: Manuscripts

Manuscript 1

Effect of Participation in Integrative Group Medical Visits on Emergency Department Utilization

Annamma Udaya Thomas

Walden University

SAMHSA ANA MFP Fellow

Outlet for Manuscript

Behavior Modification: This journal aligns with the content in the manuscript, as it has other published articles on anxiety, emotion reactivity, mindfulness, and access to integrated behavioral health care in primary care settings. At the same time, there has not been anything recent on ED utilization of patients with anxiety disorders. The editors may be interested, given that this is an interdisciplinary journal focused on mental health, including anxiety disorders, and the journal offers assessment of innovative modification techniques for mental health problems.

Abstract

The purpose of this retrospective comparative analysis was to determine what effect integrative group medical visits (IGMVs) had on the number of nonemergent visits to the emergency department (ED) in 1 year in low-income adult patients with anxiety disorders compared to low-income adult patients with anxiety disorders receiving usual care. A purposive sample of 85 low-income adult patients' (43 IGMV, 42 usual care) nonemergent ED visits were analyzed, which showed a significant difference within subjects ($p = 0.02$), but no significant difference between groups' ED utilization ($p = 0.82$). These results showed that utilization of the ED continues to occur because it is difficult for patients to distinguish somatic feelings of anxiety from an organic crisis, which results in overutilization of emergency services. A multisite investigation of IGMV utilization in primary care compared to psychotherapy groups in diverse populations may provide a better understanding of the effect of IGMV sessions on ED visits.

Introduction

Equitable access to appropriate, evidence-based, affordable, and integrated behavioral health care in primary care for low-income patients is lacking (Farber et al., 2017). Researchers and the U.S. government have recommended the integration of behavioral health in primary care, but integration has been limited (Linman et al., 2019). Group treatment models have been successful in behavioral health settings, but access to behavioral care is often delayed (Dark et al., 2017).

The purpose of this retrospective, quantitative comparative analysis study was to investigate whether an integrative medicine model of care increased behavioral health access and improved health outcomes for low-income patients with anxiety within the context of their primary care medical home (PCMH). The research question was the following: What effect does IGMV have on the number of nonemergent visits to the ED in 1 year in low-income adult patients with anxiety disorders versus low-income adult patients with anxiety disorders receiving usual care?. Using secondary data from 2017-2018 from a U.S. health system with an established IBH and IGMV program, I hypothesized that the ED visits would be different in the IGMV group compared to a group of low-income adults who received usual care without IGMV.

One in every five Americans has been diagnosed with a mood disorder (NIH, 2017). Mood disorders rank as the second highest reason for ED utilization among safety-net institutions versus sixth in non-safety-net institutions (Sutton et al., 2016). In the United States, safety-net institutions are organizations that provide patient care to those who are uninsured (Altman & Lewin, 2000). Anxiety disorders, often comorbid with

mood disorders, have the highest global burden of disease, currently at about 7% both nationally and globally with a 3-month prevalence of up to 10% and one third of Americans experiencing an anxiety disorder in their lifetime (Alonso et al., 2018; Chisholm et al., 2016; NIH, 2017).

While safety-net institutions may serve patients at all income levels, the majority of low-income patients receive care within safety-net institutions (Sutton et al., 2016). Unlike patients with psychiatric disorders who are hospitalized, those with anxiety disorders who are not hospitalized are discharged back to the community (Simpson et al., 2014). For many patients, the ED has become the provider for unmet mental health care needs (Stone et al., 2012). The ED as a mental health provider illuminates the first entry to a larger, systemic problem (Stone et al., 2012) of healthcare segregation, making available healthcare separate and not equal.

Low-income racially/ethnically diverse patients have increased barriers to care, experience inequities in care provided, and experience longer wait times for post ED follow-up appointments (James et al., 2010; Saluja et al., 2019). Compared to non-safety-net ED utilization, higher utilization of the ED for mental health care by the underserved brings attention to the problem of mental health access disparity among low-income racially/ethnically diverse populations (Cook et al., 2017; Richardson et al., 2003) compared to middle- and high-income individuals who do not return or access care for their mental health needs from an ED. Iturralde et al. (2019) found that patients with anxiety were independently associated with more ED utilization and reported them to be

disproportionately found among the highest cost patients in a large, diverse sample of health system users.

In a multisite study, researchers reported patients with depression to have improved health outcomes in integrated settings where behavioral health care providers collaborated with the primary care provider (PCP) in the same location (Balasubramanian et al., 2017). Serrano et al. (2018) also reported that some IBH colocated with PCPs in a PCMH demonstrated a trend toward lower ED utilization, but that the differences between sites were difficult to determine. They noted that the sites were federally qualified health centers (FQHCs) serving low-income patients, and other factors may be responsible for the differences (Serrano et al., 2018). The problem of overutilization of ED for nonemergent care for those with anxiety diagnoses is a proxy for the search for behavioral health care for those with anxiety that is not available or accessible to low-income, diverse populations in a safety-net community.

Significance/Importance

High-income countries like the United States spend, on average, $50 per person per year on behavioral health prevention and treatment (Chisholm et al., 2016). However, the global and national burden of disease for depression and anxiety are higher than any other mental or neurological disorder, with females having a disproportionate prevalence of either depression or anxiety and the highest disability-adjusted life years (DALYs) rate (Whiteford et al., 2015).

Chisholm et al. (2016) purported that the limited focus on public mental health demonstrates a substantial gap between the need for prevention and treatment and the

actual investment made. With 2015 baseline data, they extrapolated out to the year 2030 to see if the return on investment (ROI) would be worth investing more on those with both depression and anxiety (Chisholm et al., 2016). They found that the ROI for those with depression and/or anxiety would not only benefit with improved mental health status, but the improvements would translate into individual and population-level outcomes: increases in health life-years of work for the economy and large economic productivity (Chisholm et al., 2016).

The potential economic output and lives saved need to be taken into consideration. A recent RCT in Sweden also reported on the quality-adjusted life years and found that the mindfulness group was more cost effective on all measurements of their study, including but not limited to medication costs and costs of the visits (Saha et al., 2020). Chisholm et al.'s (2016) global systematic review reported an 80% gap in anxiety treatment and prevention in high-income countries. Chisholm et al. and Saha et al. (2020) both reported on the societal perspective of costs saved from sick leave and income gained from increased productivity. Chisholm et al. (2016) reported use of conservative projection models from 2016-2030 at only 5% increase in work productivity and estimated that an average cost of $2 per person investment in anxiety prevention and treatment annually would result in a return on health value benefit at $50 billion.

Given the cost of high utilization and specialty mental health care, research was needed to identify which treatment interventions were effective in both improving health outcomes and containing costs, especially for those who are uninsured and underinsured. Currently, ineffective treatments are costing individuals their mental stability and society

millions of dollars annually in lost output (Chisholm et al., 2016). Burnett-Zeigler et al. (2016) reported that the addition of mindfulness meditation practices as an adjunct or replacement in some cases to usual care (a control) needed to be investigated in powered sample sizes of low-income, diverse patients.

Anxiety disorders are a growing population health concern, the prevalence of which has surpassed that of depression disorders, with women having twice the rate of men (NIH, 2017). Of note, according to the DSM-5, PTSD has been removed from anxiety disorders classification and is now classified under trauma-related disorders; however, the corresponding International Classification of Diseases (ICD) codes have not been reclassified (APA, 2013). In the DSM-5, anxiety disorders include primarily childhood separation anxiety disorder, selective mutism, and specific phobias, whereas in adulthood, there are higher percentages of panic disorder, agoraphobia, social anxiety disorder (SAD), general anxiety disorder (GAD, which makes up more than half of anxiety cases), substance/medication-induced anxiety disorder, and anxiety disorder due to a medical concern (APA, 2013; Alonso et al., 2018; Bandelow et al., 2017).

In practice, PCPs commonly use GAD-7 and additional questions to diagnose anxiety. If the diagnosis is unclear, the diagnosis “unspecified anxiety disorder” is often utilized. In research, common instruments for measuring anxiety in participants include the Hamilton Anxiety Scale and GAD-7 (Sampaio et al., 2016; Spitzer et al., 2006; Webster et al., 2017). This study focused on low-income adults already diagnosed with any of the aforementioned adult anxiety disorders.

Anxiety is both psychic and somatic and often presents in somatic forms such as palpitations, shortness of breath, headaches, chest pain, digestive complaints, and sweating (Gates et al., 2016). Investigating the somatic complaints and ruling out organic illnesses often delay recognition and hence appropriate behavioral health care for patients with anxiety disorders. Patients' awareness of their own somatic symptoms, such as shortness of breath or pain, results in self-referral for their symptoms and often results in overutilization of emergency services (Dark et al., 2017).

Anxiety is a stress-induced psychosomatic disorder that has limited responses to pharmaceuticals like benzodiazepines and other anxiolytics (Ray et al., 2017). Multiple researchers have demonstrated that anxiety disorders respond well to nonpharmacological interventions including but not limited to yoga and meditation, cognitive behavioral therapy, and mindfulness-based stress reduction (MBSR; Adams et al., 2015; Daitch, 2018; Kabat-Zinn et al., 1985; Ramos et al., 2017; Smith et al., 2015). Addressing and supporting people with anxiety disorders through an interdisciplinary approach in the community and using nonpharmacological methods fosters greater trust between diverse populations and their practitioners.

Aside from limited access to cognitive behavioral therapy in behavioral health settings, yoga, mindfulness meditation, and MBSR are not yet considered reimbursable treatment approaches (Clarke et al., 2015; Johnson et al., 2019). Apart from select locations, these alternative modalities have not been integrated into the mainstream healthcare system, despite the evidence-based results of positive outcomes with the aforementioned modalities (Johnson et al., 2019).

Group Medical Visits

The Agency for Health Research Quality (AHRQ) has recommended GMV to address patient access to care, increase patient and practitioner satisfaction in care delivered, and decrease high-cost health care utilization, including ED and specialty visits (AHRQ, 2018; Shaw et al., 2014). GMVs are shared medical appointments (SMAs) with a group of patients being seen simultaneously, lasting from 1-2 hours with a range in attendance from five to 16 patients with some common diagnoses and/or common interest in receiving an intervention (AHRQ, 2018).

Ornish et al. (1990) and Noffsinger (2012) laid the groundwork for building practice models that assist the individual provider in managing monthly chronic care group visits that group patients by diagnosis or utilization behavior (Noffsinger, 2012). There are various GMV types, which include drop-in groups, disease-based group visits, and intervention-based groups (AHRQ, 2018), all of which are done either in person or virtually. GMVs combine biomedical care and consultation with health education and peer support. For example, a group of patients may be coming to the group because they all have chronic pain and simultaneously would like to receive acupuncture for their chronic pain condition. Other chronic pain groups may focus on acceptance of pain or mindfulness techniques to cope with pain and participate in activities to uncover their source of pain (i.e., contributors of pain via nutrition, work or home life activities) and share experiences and community resources (Gardiner et al., 2014).

Significant positive health outcomes that have been documented in systematic reviews include increased patient satisfaction, increased patient knowledge, increased

healthy eating habits, transdiagnostic reduced symptom severity, and reduced weight (Parikh et al., 2019). There is evidence that GMV participants (diabetes patients and elders) had lower ED utilization and hospitalizations while active in groups (Edelman et al., 2012; Shaw et al., 2014).

Group medical visits (GMV) that include nonpharmacological practices like mindfulness meditation are called integrative group medical visits (IGMV). In this context, mindfulness meditation is a nonpharmacological intervention that may take place in a PCMH that practices IBH. IGMVs have been implemented in response to interest in complementary and integrative health, which remains inaccessible to many people due to limited insurance coverage and high out-of-pocket cost. IMGVs may contribute to improving patient experience, improving population health, reducing costs, and increasing practitioner satisfaction (Cornelio-Flores et al., 2018; Dresner et al., 2016; Gardiner et al., 2017, Gardiner et al., 2019; Gareau et al., 2016; Geller et al., 2015; Mehl-Madrona et al., 2016; Rowley et al., 2016; Shaw et al., 2014; Strickland et al., 2016).

Devoid of side effects, mindfulness meditation has been found to have a variety of health benefits, including but not limited to reduction of somatic symptoms that may accompany anxiety, as well as a perceived reduction in emotions often found within the definition of anxiety such as distress, worry, nervousness, sleeplessness, and irritability (Bottaccioli et al., 2014). In a systematic review of psychoneuroimmunology (PNI)-based interventions, Moraes et al. (2018) found evidence of decreased levels of cortisol, epinephrine and norepinephrine, and pro-inflammatory cytokines [e.g., interleukin (IL)-1α and β, tumor necrosis factor (TNF-α), and IL-6] in mindfulness interventions. In

Spain, a nurse-led mindfulness program reduced anxiolytic use by 54% in 3 months (Izaguirre-Riesgo et al., 2020).

Another study from Spain was the first to examine a mindfulness-based intervention specifically focused on patients with GAD diagnosis from three different primary care practices. While the PCP referred eligible patients, they were not included in the intervention. The intervention did result in statistically significant reductions in anxiety symptoms, improvements in emotional regulation and awareness in both in-person and virtual assistant aspects of the study (Navarro-Haro et al., 2019).

Conceptual Framework

The theoretical basis for understanding the phenomena occurring with low-income racially/ethnically diverse patients in the context of the current U.S. health system was a combination of the Quadruple Aim Framework (QAF) with intersectionality theory and the theory of mental accounting. This combination in thought has not been utilized in previous research. The new framework is called integrative health equity in primary care framework.

The QAF is an expansion of the Triple Aim developed by leaders at the Institute of Healthcare Improvement. The Quadruple Aim includes an improved patient experience, improved health outcomes or population health, reduced costs (Berwick et al., 2008), and then adds higher practitioner satisfaction or care team wellbeing. The final aim was first described by Spinelli (2013) as the ‘phantom limb’ and later formalized as an important consideration in reducing burnout of practitioners (Bodenheimer & Sinsky, 2013). While all four aims of IGMVs have been researched, the aims of focus in this

study may be categorized under the right side of Figure 1, improved health outcomes and reducing costs, but should still be seen in the context of the four leaves of the QAF, as patient experience and care team well-being also affect the other aims indirectly or directly. In addition, the use of complimentary and integrative health modalities in the context of this framework influences the whole in delivering whole person integrated care.

Figure 1

Quadruple Aim Framework

Note. Quadruple Aim (n.d.).

Crenshaw coined the concept of intersectionality to view the intersection of race and gender as it relates to the marginalization of black women (Crenshaw, 1989). The intersectionality theory has been adopted in the health professions to explain the complex way in which the social determinants of health like economic stability, education level, environment, access to food and health care, and social networks or lack thereof, interact

with different aspects of a person's identity to shape the discriminatory experiences that some marginalized groups may face within health systems (Gkiouleka et al., 2018). Intersectionality theory provides a lens in which to look at the QAF keeping in mind that safety-net hospital patients have different outcomes and for this study, specifically those who are low-income and have an anxiety diagnosis.

Another area which enlightened this conceptual framework, is that of behavioral economics. Elbel et al. (2014) concluded that low-income patients are particularly understudied when it comes to their health care choices and that vulnerable populations would benefit from assistance in making better health care choices. They draw on Thaler's (2016) notion of *nudges* to suggest that nudges are key in assisting patients make better choices.

Thaler (2016) re-inserted human psychology and behavior into the field of economics; reemphasizing the work of 18th century economist Smith to bring back the notion of the human drivers to economic choices (Barberis, 2018). The reasons more low-income patients than middle to higher income patients go to the ED for nonemergent reasons that include mental health care may include factors such as transportation issues, custom of going to hospitals versus outpatient in their countries of origin, proximity of ED versus outpatient primary care office, and/or lack of a PCP or insurance. Thaler's theory of mental accounting helps to explain why people make some of the choices they make, some of which may be rational, but more often are not rational, are reactive and based on emotion, pain, anxiety level and what is important at the present moment not

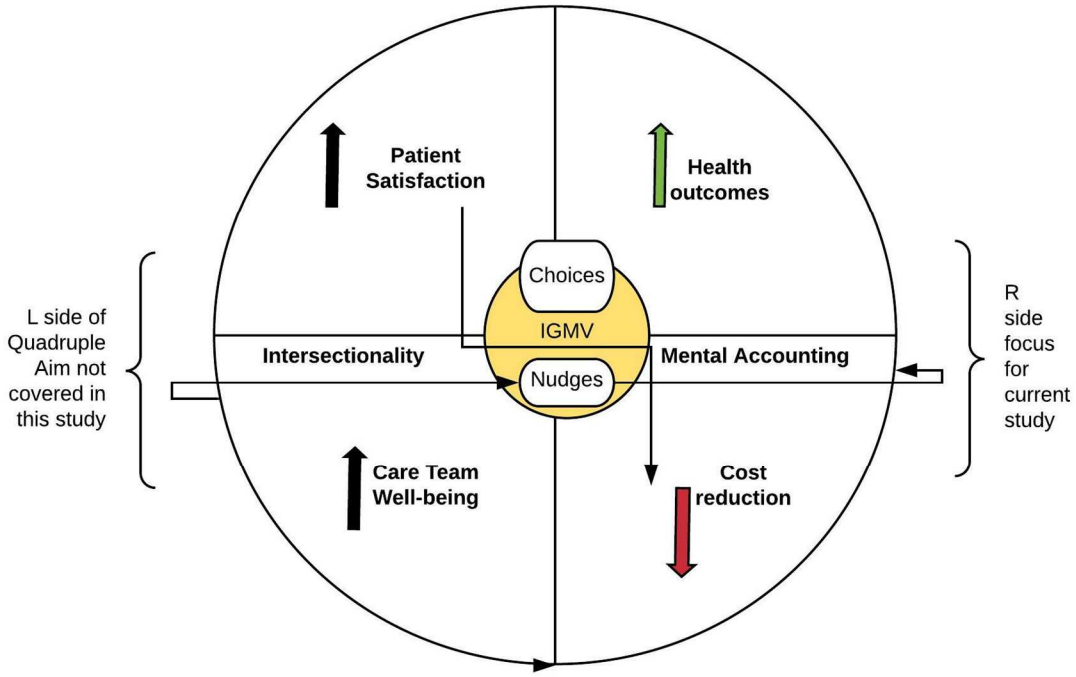
long term. He recommended that health care practitioners provide *choice architecture* to patients so that they may make more informed and better choices for their health.

Utilizing the theories of intersectionality and mental accounting to frame the research question provided insight into the interaction of these concepts together as they relate to the two aims of health outcomes and cost reduction. These are concepts and theories steeped in the context of the capitalist system, which, by definition, do not support the underserved, low-income racially/ethnically diverse patients. However, the accessibility of the expensive and expansive hospital systems and their EDs allow anyone to choose this location for their care (Stone et al., 2012), regardless of its utility to meet the needs presented.

Combining these lenses together opens a new way of viewing the current healthcare system and addressing the inequities in care within this contextual framework. Choice architecture combined with integrative and appropriate care has to be communicated with appropriate nudges and in culturally and diverse spaces where patients may feel safety, trust and access to the care that is needed to address health equitably. Integration of the IGMV as a space that promotes choices and appropriate nudges frames the utility of IGMV for increasing mental health access and health equity for low-income racially/ethnically diverse patients may result in what is displayed below in Figure 2.

Figure 2

Integrative Health Equity in Primary Care Framework



Original Contribution

The original contribution of this study was viewing IGMV as an intersectional institutional intervention for the promotion of IBH in PC for low-income diverse persons. The potential diffusion of IGMV by safety-net institutions could influence access to integrative mental health care. Whether in-person or via telehealth groups, IGMV have been integrated into primary care. The potential positive social change impact would be greater access to integrative mental health care for the underserved, improved mental health outcomes and reduction of nonemergent use of the hospital.

The results of this study contributed to the body of knowledge on integrative mental health care and the underserved because results provide more information on the effectiveness of IGMVs in this population. Secondly, IGMV could be integrated further into multidisciplinary team education at both the preservice and inservice levels of education. Lastly, the new framework provided a lens in which to view health equity from a system, community and personal perspective nestled within the current health system quadruple aims framework.

Relevant Scholarship

In a qualitative review of earlier GMV research (1974-2004), Jaber et al. (2006), along with other findings, reported a decrease in high-cost utilization including specialty care, urgent care and ED utilization illuminating improved management by both the team and the patient. These were statistically significant primarily on elders, those with headaches and diabetes, but not specifically low-income patients. In the past 10 years there has been a surge of research in GMV, including IGMV research on the diverse low-income populations. Gardiner et al. (2019) have focused on chronic pain and depression, which has highlighted outcomes, related to utilization, patient satisfaction, and health outcomes in low-income diverse patients in the primary care/PCMH context.

ED utilization has been the primary reported cost measure because it is the most expensive (Ernst et al., 2015) as it is a patient driven versus provider driven cost. ED utilization in patients with chronic pain and depression utilizing IMGV (MBSR-based IGMV) did reduce and was statistically significant at 9 weeks compared to the control but not at 21 weeks (Gardiner et al., 2019). While Gardiner et al. (2019) mentioned the cost

savings via decreased opioid use and reduced ED utilization; the costs were not quantified. Gardiner et al. (2019) and Mehl-Madrona et al. (2016) specifically recommended more emphasis on cost reduction research.

While there have been a variety of programmatic types of IGMV in practice (Thompson-Lastad, 2019), the majority of published IGMV research has been on depression and chronic pain, inclusive of emphasis on opioid use. Reducing opioid consumption, considering the opioid crisis, has been shown to be associated with IGMV in a recent RCT (Gardiner et al., 2019). While anxiety disorders have been listed as comorbidities (Chao et al., 2019; Gardiner et al., 2019) there has not been a focus on people with anxiety disorders.

Research Question and Design

What effect does IGMV have on number of nonemergent visits to the ED in 1 year in low-income adult patients with anxiety disorders versus low-income adult patients with anxiety disorders receiving usual care?

Secondary clinical data on Medicaid patients from 2017-2018 was available from a U.S. safety-net health system database. I conducted a quantitative retrospective, repeated-measures comparative analysis of ED visits from the year prior and then from the year post IGMV to compare ED utilization for these low-income adult patients with anxiety disorders who received IGMV and low-income adult patients with anxiety disorders who received usual care during the same time frame.

Methods

Participants

The IGMV participants of this retrospective study were 43 low-income adults ages 18-64 with an anxiety diagnosis that had participated in IGMV in a PCMH with IBH. The control group (usual care) were 42 low-income adults ages 18-64 with an anxiety diagnosis from the same PCMH that had not participated in IGMV but who were seeing their PCP for management of their anxiety and had access to colocated IBH.

Sample and Power

For this study, 85 subjects were de-identified from historical records from two groups, IGMV and usual care with 43 and 42 subjects, respectively in each group. The power of the tests was higher since the correlation coefficient between repeated measures was higher than 0.3. I used G*power computer software (Version 3.0) to calculate the sample size for the ANOVA repeated measures procedures to determine the required sample size (Faul et al., 2009).

For a repeated measures model, statistical power was addressed separately for main (within and between subjects) effects and interaction (within-subject-by-between-subject) effects. In the repeated measures design with 2 groups, each subject was measured at 2 time points, a level of significance of 0.05, a medium effect size of 0.25, and a correlation coefficient of at least 0.3 between repeated measures, and a statistical power of 0.80 required 46 subjects for within-factor (time) effects, 84 subjects for between-factor (group) effects, and 46 subjects for within-between factor interaction.

Variables/Sources of Data

The independent variable was the type of mental health service patients with an anxiety diagnosis received (usual versus IGMV) at the outpatient safety-net health care facility. The dependent variable was ED utilization prior and after participation in the IGMV. ED utilization was defined as nonemergent visits to the ED, which did not require hospitalization. The sources of the data were de-identified safety-net hospital records from the electronic medical record which was the same for both the hospital and the outpatient setting. IGMV participants were selected if they had an anxiety diagnosis and attendance of at least four IGMV sessions during the year. Usual care patients were filtered by anxiety diagnosis from the chronic pain registry from the same time period. Then the number of ED visits with anxiety related diagnoses was calculated, excluding any that resulted in hospitalization. Health center staff filtered the data by inclusion criteria, de-identified the data by removing unique identifiers and downloaded into excel spreadsheets, which were sent to me.

Instrumentation or Measures

The type of data that I received was patient demographics which included patients' psychiatric disorder diagnoses, IGMV attendance, and the number of nonemergent visits to ED for anxiety disorders just prior to starting group and the end of the year.

Design and Analysis

The design was a quantitative retrospective, repeated-measures comparative analysis research design using data from the years 2017-2018. I used single stage

sampling from two points in time, first at the end of 2017 for 2017 cumulative nonemergent ED visits and then from the end of 2018 for the 2018 cumulative nonemergent ED visits. I compared the nonemergent ED visits for low-income adult patients with anxiety disorders who received IGMV versus usual care the year prior and post intervention for both the IGMV group and usual care for the same time frame. Usual care was defined as patients that were having their anxiety managed one on one by their PCP but also had access to psychotherapy groups. Patients spend on average six to nine months in a group cohort (Balasubramanian et al., 2017) and patients also complete annual surveys therefore pre and post years was selected for review.

The comparison group was the group of patients with an anxiety disorder that attended five or more IGMV sessions. The rationale for this design was that the effectiveness of IGMVs in the context of an RCT, Gardiner et al. (2019) found statistically significant differences in health outcomes with those attending five or more IGMV sessions versus four or less. The control group were those patients with anxiety disorders receiving usual care.

In order to protect human subjects, the institution sent de-identified data for analyses and was aware that the clinical site information would remain anonymous. The site contact person who sent the data was not involved in the intervention or usual care of the patients for this study. The inclusion criteria for the data were: all patients included in the study had a diagnosis of anxiety disorder, low-income status, and received care from the same institution. Exclusion criteria were patients with active psychosis, schizophrenia, and bipolar diagnoses or cancer diagnoses.

The principal contact person was a doctorally-prepared psychologist and researcher. The site's team had not analyzed their IGMVs with the proposed research questions. However, they were interested in uncovering this type of data to plan for future IBH in primary care based on evidence. The psychologist voluntarily participated to run reports that filtered the information needed from historical patient records of those with anxiety who obtained usual care and those that were participating in the PCP led IGMVs during the 2017-2018 calendar years.

Differences in the outcomes associated with the two groups were evaluated using repeated measures ANOVA. Both groups had similar socioeconomic status as they were all Medicaid recipients and therefore low-income. Individual patient incomes were not available.

Data analysis began with preparatory activities such as the treatment of missing data, identification of outliers and other such data cleaning tasks. A detailed descriptive analysis of all quantitative data was performed. Overall, statistical assumptions were not violated and will be discussed in the results section below.

The first phase of the analysis consisted of using descriptive statistics in computing the summary measures (mean, median, standard deviation, and range) for the variables measured on interval or ratio scales and frequency distributions (absolute frequency and percent) for the variables measured on nominal or ordinal scales. Significance level was set at a *p*-value equal to or less than 0.05. All statistical analyses were carried out using SPSS (Version 27). Repeated-measures ANOVA was used to determine a decrease in ED utilization within subjects, between groups, and within-

subjects-by-between-group interactions (i.e., the pattern of change in ED utilization between the two groups over time).

Results

Execution

This quantitative, retrospective study was conducted with the proposed health center that has IBH in primary care and is situated in the western region of the U.S. The study was approved by the partner site's IRB for data collection on April 1, 2021. Walden University IRB subsequently approved the study on May 3, 2021 (IRB approval number 05-03-21-0664376). The sample used for the study was 85 established patients with anxiety diagnoses that had colocated behavioral health care at their PCMH. The comparison group (IGMV group) was the alternative group care model that infused mindfulness meditation into the curriculum. The control group (usual care) was the standard model of IBH in primary care.

The IGMV group was meant to be a mindfulness movement group in which the entire group was focused on the mind-body connection. However, there were not enough persons with an anxiety diagnosis established in these groups to support the proposed quantitative retrospective design plan. Hence, the data were collected from a pain and wellness group where mindfulness meditation was integrated at the beginning for 10 minutes and at the end for 10 minutes. The retrospective data were collected in May 2021. The premeasurement was cumulative ED visits for 2017. The postmeasurement was cumulative visits for 2018. The IGMV group were individuals who had existing anxiety disorder diagnoses and had attended four or more IGMV within the last year. The

sample included 85 cases (n=43 comparison and n=42 controls). The comparison group's (IGMV) ED utilization was downloaded for one year prior and one year after IGMV. The comparison group was selected as 43 consecutive cases of individuals attending an IGMV who met inclusion criteria.

The control group (usual care) was a sample of 42 individuals who were chosen as consecutive cases from the chronic pain registry who met the inclusion criteria, but did not attend any IGMV sessions. Usual care was defined as patients that were having their anxiety managed by their PCP, as participation in psychotherapy groups was controlled for by identifying that both intervention and control had access to usual individual or group psychotherapy and treatments.

The IGMV sessions were not designated for patients with anxiety diagnoses only. The patients selected for the retrospective analysis were patients with an anxiety diagnosis who had attended the wellness groups in which all patients had a chronic pain diagnosis. Hence, both groups had a chronic pain diagnosis.

All patients had access to IBH services which consisted of onsite therapists or psychiatrists who collaborated with the care team. The number of visits the sample had with these embedded therapists was also tracked. There were also external appointments with therapists or psychiatrists who were a part of a community network of providers or mental health clinics and these appointments were also tracked for the entire sample of patients.

Regarding ED utilization, there was no missing data. Regarding ages, the range was changed from 18-65 to the actual pool that was between 19-75. Due to the strict

protection of patient identity, the age of each patient and income status were not included. Once coded as IGMV or control, the patients' unique numerical identifiers were removed and patients were listed 1-85 only.

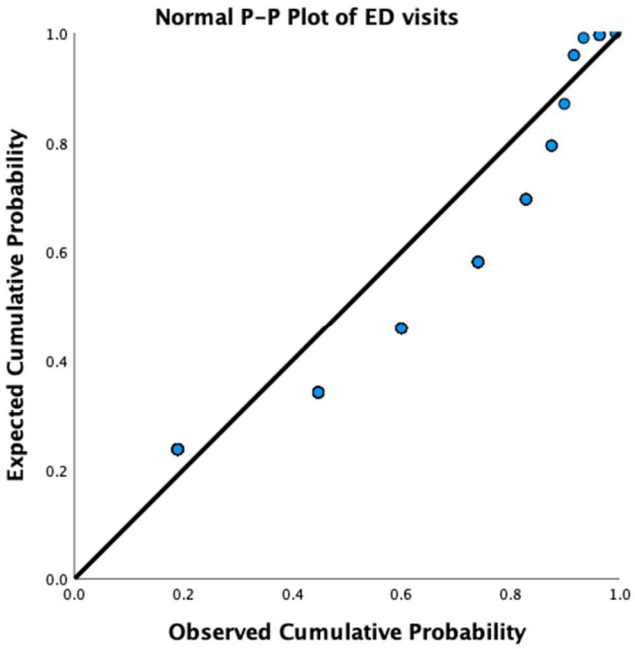
Ethical considerations were at the forefront of the execution of this study. All the data were collected and stored electronically and used only in the manner proposed in the IRB application and by the requirements of both Walden University and the Institutions' IRB. The data collected was de-identified immediately and the unique identifiers were discarded. I received the de-identified data in an Excel Spreadsheet. I screened for missing data, and when I saw that there was no missing data, I imported the data into SPSS version 27. I screened and coded the variables to prepare them for analysis. Then I performed descriptive statistics, frequencies and repeated measures ANOVA and saved the outputs.

I also checked to see if the assumptions for repeated measures ANOVA were met: independence of observations, data were interval level, normal distribution, and homogeneity (Frankfort-Nachmias & Leon-Guerrero, 2016). The first assumption assumes that neither group had influence over the other and each observation was independent of the other. This assumption was met as these were retrospective data that were selected after groups were already completed. The second assumption that data were interval was true for the dependent variable because the number of ED visits while a scale measurement may be described by interval or ratio. The third assumption was the sample would be drawn from a population of normal distribution was violated since this was a purposeful sample. This violation did not interfere with the data analysis since

there was adequate power, but limited the generalizability of the results to the larger population (Schmider et al., 2010). The measurement points on the probability plot were distributed along the diagonal line confirming that the data were normal.

Figure 3

Normal P-P Plot for Emergency Department Visits



The fourth assumption of homogeneity or populations variances being equal was also met. Levene's test was not significant for pre or post measurements ($p = 0.07$, $p = 0.19$) which confirmed equal variances.

Descriptive Statistics

I conducted a baseline descriptive analysis on the limited sociodemographic information available including gender, race/ethnicity, and stress-related chronic comorbidities. The majority of the patients were female (65 of 85, 76%) and Caucasian (43 of 85, 48%). The ages of the participants were not shared as a part of the de-

identification process, but the range was between 19-75 years of age, with majority between 19-65 (personal communication, M. Changaris, June 17, 2021). The number of females attending IGMV were 28 and male 15 versus the number of females in the control/usual care were 37 and male were five. The mean number of IGMV attended was 21 while the median was 20, mode 6, min 4 and maximum 50 sessions. Table 1 displays the IGMV frequency statistics.

Table 1

Integrative Group Medical Visit Group Statistics

		N
	Valid	43
	Missing	0
Mean		21
Median		20
Mode		6
Minimum		4
Maximum		50

Table 2 displays the frequencies and percentages for the sociodemographic information. There were six ethnic groups within the Nonwhite category and too few in each individual ethnic group to analyze by ethnic group. The largest race/ethnic subgroup was 17 patients who identified as Black. This was the only subgroup that had all seven patients of the IGMV group to have fewer postmeasurement ED visits than all other race/ethnic groups. There was one patient in each of Native American, Pacific Islanders, Other, and Declined groups, six Latinos and two Asian Americans who were in the intervention group. Forty-one of the 43 IGMV participants had either a decline or no change in ED utilization from 2017 to 2018.

Table 2

Frequencies and Percentages for Sociodemographic Data (N = 85)

Characteristics	*N*-IGMV	*N*-Usual care	%
Race/ethnic background			
1) Latino/a	6	5	13
2) American Indian	1	0	1
3) Asian American	2	3	6
4) Black or African American	7	10	20
5) Native Hawaiian/P. Islander	1	1	2
6) White (Caucasian)	23	16	48
7) Middle Eastern (Caucasian)	1	2	3
8) Other	1	4	6
9) Declined	1	0	1
Gender			
Female	28	37	76
Male	15	5	24
Comorbidities			
PTSD	25	21	54
Chronic pain	43	42	100
Depression	22	16	38

Table 3 describes the ED utilization mean for 2017 and 2018, standard deviation and sample size of both comparison and control at the pre and post measurement intervals. Premean number of nonemergent ED visits for IGMV group was M = 2.74, SD = 3.774 while the control group, usual care, had M = 1.99, SD = 2.593 nonemergent ED visits during the year. Postmean number of ED visits for those who attended four or more IGMV sessions decreased to M = 1.53, SD = 1.894 while the control group's nonemergent ED visits increased to M = 2.12, SD = 3.094 nonemergent ED visits.

Table 3

Integrative Group Medical Visit and Control Emergency Department Utilization at Time 1 and Time 2

	Type of behavioral health service	Mean	Std deviation	*N*
ED—Premeasurement (Time 1)	IGMV	2.74	3.774	43
	Control	1.9	2.593	42
	Total	2.33	3.253	85
ED postmeasurement (Time 2)	IGMV	1.53	1.894	43
	Control	2.12	3.094	42
	Total	1.82	2.560	85

Table 4 displays the tests of within-subjects contrasts and tests of between-subjects effects. The within-subjects test shows the amount of change that occurred at the individual level of all patients, which means that the individuals measured against themselves did demonstrate change over time in ED utilization and but was not significant ($p = 0.10$). The between-subjects effects test shows that the differences between the two groups ED utilization over time was not significant ($p = 0.82$).

Table 4

Repeated Measures Analysis of Variance Test for Emergency Department Visits

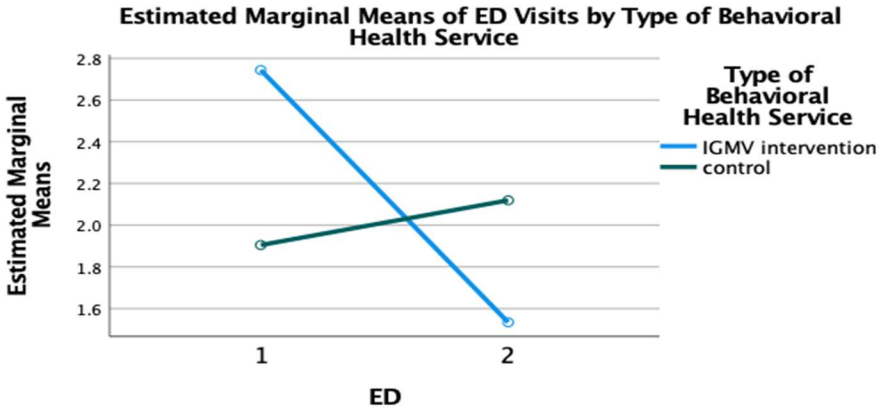
	Sum of squares	*Df*	Mean square	*F*	Sig.
Within groups ED	10.518	1	10.518	2.744	.101
ED*type	21.530	1	21.530	5.618	.020
Between groups	.692	1	.692	.052	.820

*ED utilization by either type of behavioral health service.

Figure 4 represents the estimated marginal means between the two points in time. This is the mean response for each group between the two measurements. There was a significant interaction in ED visits between IGMV and the control group (F = 5.62, p = 0.02). The significance is the pattern of change in ED visits from Time 1 to Time 2 that went down in the IGMV group and up in the usual care group. The individual IGMV patients had a decrease in their utilization of the ED for mental health care.

Figure 4

Estimated Marginal Means of Emergency Department Visits by Type of Behavioral Health Service



The ED utilization measurements were collected at two points in time for both groups. An independent *t*-test was run and both skewness and kurtosis were checked. The independent *t*-test produced the same results as the repeated-measures ANOVA and demonstrated that the patients in the IGMV group had a significant drop in ED utilization (p = 0.02), but that the difference between groups was not significant (p = 0.82). There was positive skewness and high kurtosis in both pre and post measurements of the control

group. The IGMV premeasurement was also positively skewed, but the postmeasurement was just over the threshold for skewness at 1.16. The IGMV premeasurement had excess kurtosis, but the postmeasurement Z-score for kurtosis was 0.71 and therefore not in excess. There are many unknown factors that might have attributed to the nonsignificant result between groups, but considering the data that were available and not controlling any other variables, the significance at postmeasurement of the IGMV group was worth further explanation.

Mean scores are sensitive to extreme scores and result in skewness in one direction or the other (Franfort-Nachmias & Leon-Guerrero, 2015). Given the IGMV group postmeasurement was the only measurement with no extreme scores and ED utilization dropped, there was a normal distribution which explains the significant results.

Standard IBH consists of access to individual and group psychotherapy sessions. Table 5 describes the IBH utilization mean, standard deviation and sample size of both comparison and control at the pre and postmeasurement intervals. The IGMV patients did access standard IBH more frequently than the control group with a M = 3.07, SD = 7.564, but their increase in utilization over the year was minimal with a M = 3.86, SD = 10.980. Whereas the usual care utilization of IBH remained the same over the both years with a M = 0.33, SD = 1.720 and SD = 0.816, respectively.

Table 5

Integrative Group Medical Visit and Control Integrated Behavioral Health Utilization at Time 1 and Time 2

IBH in PCMH	Type of behavioral health service	Mean	Std deviation	*N*
IBH—Year 1 (Time 1)	IGMV	3.07	7.564	43
	Control	.33	1.720	42
	Total	3.86	5.652	85
IBH—Year 2 (Time 2)	IGMV	3.86	10.980	43
	Control	.33	.816	42
	Total	2.12	7.984	85

Quantitative Measures of Association

While there was a wide range of ED use, the mean number of ED visits for the IGMV group decreased from 2.7 to 1.5 over one year. While the IGMV group had a drop from the year prior to study measurement versus post measurement, it cannot be stated with complete certainty that adults measured had never attended an IGMV session prior to this retrospective analysis. The analysis was based on the inclusion criteria of the number of visits was per year. Because I could not identify each participant to examine ED visits per year, it was not possible to conclude that these participants had never had previous exposure (personal communication, M. Changaris, June 15, 2021). The mean number of ED visits for the usual care group increased from 1.9 to 2.1 over one year. The difference between the groups was not statistically significant and therefore I cannot conclude that the attendance of IGMVs versus other usual IBH services had a statistical

correlation. For the known comorbidities there were more patients with PTSD and Depression in the IGMV group than in the usual care group.

Discussion

Interpretation

The results of this study corroborated this use of ED for mental health care and confirmed Iturralde et al. (2019) findings that patients with anxiety were independently associated with more ED utilization. Both the IGMV and usual care groups had equal access to IBH at their PCMH so the only known difference in their access to care was participation in IGMV groups which, getting exposure to mindfulness meditation. Even though the safety-net health system in this study provided the established strategy of IBH in primary care (Buche et al., 2017) and IGMV sessions, some patients still utilized the ED for nonemergent mental health care. Dark et al. (2017) explained utilization of the ED continues to occur because it is difficult to distinguish somatic feelings of anxiety from an organic crisis of the heart or lungs which results in overutilization of emergency services. However, there are other barriers low-income patients encounter (Agarwal et al., 2016; Martinez-Hume et al., 2017; Saluja et al., 2019; Whittaker et al., 2016).

A multi-state study on factors associated with ED utilization, in Medicaid expanded states, confirmed that concerns best managed in an ambulatory setting are still being seen in the ED and that these are typically patients with chronic illness comorbidities (Agarwal et al., 2016). These results are in congruence with the findings of my study that even with Medicaid and IBH, the ED is being utilized for mental health care. The authors suggest multiple factors, including wait times, mental health illness,

polypharmacy, and chronic illnesses (Agarwal et al., 2016) for nonemergent ED utilization.

Gardiner et al. (2019) examined ED utilization in an RCT with low-income patients who have chronic pain and depression. ED utilization dropped significantly at 9 weeks, but not 21 weeks for the MBSR-based IGMV patients compared to control. While the current study was over one year with a purposeful sample of patients with an anxiety diagnosis and comorbidity of chronic pain, the lack of statistical significance of ED utilization at one year was similar to the findings at 21 weeks.

The results of my study add to the knowledge that behavioral health interventions in primary care may reduce nonemergent use of the ED and increase some access to mental health care at the primary care versus tertiary care level, but that other factors need to be investigated to improve access and reduce further nonemergent ED utilization. I would suggest that this safety-net site established the capacity to offer integrative mental health access, incorporating mindfulness meditation with usual care, for low-income patients and that this clinical site's health system structure reflects the context of the conceptual framework.

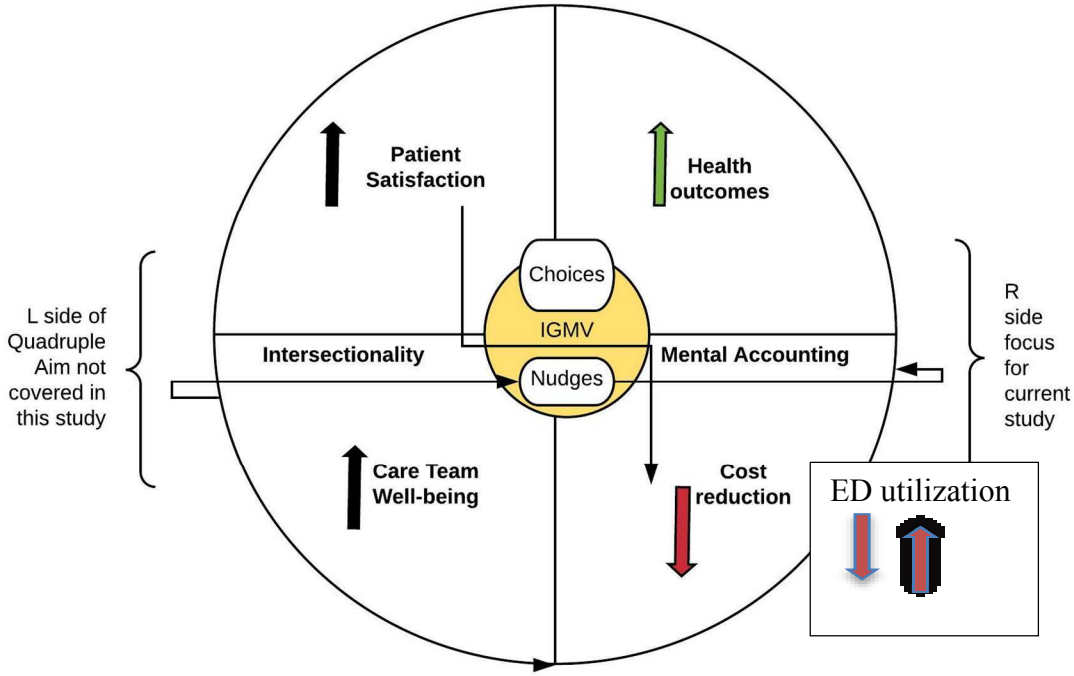
Conceptual Framework Context

The conceptual framework was partially supported by the study. The conceptual framework was created to visualize a more integrated and equitable approach to the typical structural elements of the U.S. health care systems by inserting a blended approach to care. First, is that the structure is based on the QAF which is how health care

systems in the U.S. operate. At the population health level, the bottom right side of the diagram displays the nonemergent ED utilization were reduced.

Figure 5

Integrative Health Equity in Primary Care Framework Including Dependent Variables



At the community level, a diverse low-income population was selected to report frequencies across race/ethnicity and gender. The baseline for selecting this health center's data was that the site appeared to be offering choices in an integrative primary care center without gender, racial/ethnic barriers and with the option to attend groups in which mindfulness meditation was practiced at every session. Greater differences may have been observed in a setting where IBH services were not the standard of care and Medicaid had not been not expanded. The usual care subjects did not attend IGMV

sessions but did have access to therapists and the options to choose other psychotherapy groups within the context of their PCMH.

Mental accounting at the individual level, may be influenced by mindfulness meditation practice, but was not tested in this study. Other qualitative methods would need to be employed to uncover this mental process and how patients decide where to seek care. Theoretically, the knowledge of being able to attend a group visit versus waiting up to three months for an appointment aids the process of mental accounting when mental health care is needed. However, there are many factors affecting the mental accounting and the resultant choices patients make, including but not limited to lapse of insurance, comorbidities, and the proximity of the ED at the time of need versus and available appointment or group.

This is the first longitudinal study to examine the patient's ED utilization with an intersectional institutional lens. Life stressors, employment status, substance use, literacy level, homelessness status, loss of insurance at the time of utilizing the ED, and educational attainment were not collected, but all patients were low-income patients with co-occurring chronic pain.

Limitations

There were a few limitations to this study including sample size, design and reliability of the independent variable for comparison. First, the sample was drawn from an ethnically diverse population but some race/ethnic groups were represented limited in numbers.

Second, the design of the study was a quantitative retrospective analysis design with a purposeful sample. When observing ED utilization patterns, a random sampling of patients with all ICD 10 codes categorized under anxiety disorders (excluding PTSD) may have produced results in alignment with previous research that demonstrates reduction in ED utilization with GMV. Due to lack of information technology assistance, this type of data collection was not feasible. Additionally, in this design, all patients had access to individual and usual care psychotherapy groups. Perhaps only comparing IGMV versus usual care psychotherapy groups may have produced clearer and more significant differences. Of note, there were four more with PTSD and six more with Depression in the IGMV group compared to the usual care group which could have had an influence on the level of significance of the results.

While the IGMV group had a drop from the year prior to study measurement versus post measurement, I could not be certain that participants in the comparison group had never attended an IGMV session prior to this retrospective analysis. Because I could not identify each participant to examine ED visits per year, it was not possible to conclude that participants had never had previous exposure (to IGMV) (personal communication, M. Changaris, June 15, 2021).

Lastly, the type of behavioral health service was the independent variable. The IGMV were compared with usual care but these were multiple IGMV group sessions over time. While the practitioners who facilitated the IGMV and IBH groups were consistently and respectively the same, there would have been natural variability in which patients were present at each group session affecting group dynamics. However,

variations in group composition and group facilitators would be true in any real-world group, including the psychotherapy groups in the usual care.

Implications

Nursing Implications

Nurses work in primary, secondary and tertiary settings. The main implication of this study for the discipline of nursing is to educate nurses at both the preservice and in-service levels to recognize the population health impacts of appropriate care. In preservice, nursing students can learn the settings best positioned to deliver care and produce the best health outcomes for the patient, community and the health system (Jordan et al., 2021). In in-service, nurses may continue learning and working with other disciplines to assist patients remove barriers (Valaitis et al., 2020) to accessing the required level of mental health care in culturally appropriate ways.

Empirical Implications

All of the data came from two nurse practitioner (NP) coled groups with psychologists which cost less than physician coled groups with psychologists. NP coled groups could be a practice model that is replicated more widely for IBH in primary care (Housden et al., 2017). The average primary care physician in this region earns $200-340,000 per year versus the average NP who earns $120-160,000 per year (Bureau of Labor Statistics, 2020).

Utilizing retrospective data had the advantage of less bias entering the research process. The challenges presented in the proposed research translating into the actual data feasible for collection were part of the realistic protections necessary for human subjects

with mental health illness. The data and the analysis were also representative of the multiple factors that affect patients as they navigate the health system. Patients are not only part of one group but they are interacting with multiple team members at different levels.

Theoretical Implications

The conceptual framework was multidimensional, but the study utilized only the right side aims and the intersectional institutional approach. The integrative health equity in primary care framework provided a lens in which to view health equity from three levels, system, community and person, being mindful that the patients in this study were from a U.S. health system in the western region of the U.S. An intersectional institutional approach allowed us to contextualize the patients' experience on these different levels and shift from focusing on socio-demographic attributes and their social determinants of health, but also to how they interface and translate into their social inclusion or exclusion and the power dynamics that express themselves as they navigate through the healthcare space (Gkiouleka et al., 2018).

Reducing wait time for established low-income primary care patients by expanding the patients' options at the primary care level (Agarwal et al., 2016; Wadsworth et al., 2019) provides opportunity for social connections, cocreating health plans (Thompson-Lastad, 2018) and potentially reduces structural discriminations (Gkiouleka et al., 2018; James, et al., 2010; Saluja et al., 2019) that may be experienced. Structural discriminations occur at many levels in the health care system, including but not limited, lack of transportation, to lack of translation use for language barriers,

understanding the concept of primary care (Saluja et al., 2019) instructions not explained or printed on medications or instructions at appropriate literacy levels, restricted day time hours of primary care (Whittaker et al., 2016), race/ethnic biases, as well as the stigma of having Medicaid as their insurance (Martinez-Hume et al., 2017). The known factors that contribute to delayed appointments and repeat visits to the ED.

Social Change Implications

The results of my study effect positive social change because the results provided new information when examining longitudinal ED utilization and access to integrative mental healthcare for a racially/ethnically diverse safety-net population. The state where this safety-net is located had expanded Medicaid. Thompson-Lastad and Rubin (2020) revealed that states that did not expand Medicaid have more limitations as it relates to low-income adults accessing primary care and IGMV programming.

Recommendations

Future Research

Follow up prospective qualitative or quantitative, or mixed methods studies could be conducted on more diverse patient populations with anxiety diagnosis, perhaps excluding or comparing those patients with and without a chronic pain diagnosis. A multisite investigation of utilization of IGMV in IBH in primary care compared to psychotherapy groups in diverse populations may provide a more robust understanding of the diversity of integrative mental health needs. Future research should also separate as feasible the PTSD codes from anxiety disorders.

Conclusion

Reviewing trends from 2008-2018, anxiety is on the rise for all race/ethnic groups (Goodwin, 2020). The results of this study added to the body of literature about access to integrative behavioral health care in primary care. Although this study did not reveal that IGMV was statistically significant from the usual IBH in primary care, the study did highlight this health system's efforts to provide an alternative access point to behavioral health care, exposing patients to the ancient practice of mindfulness meditation. The results of this study prompt further research with stricter study designs to uncover if increased access to mental health care for low-income diverse populations at the primary care level is effective.

References

Adams, D. J., Remick, R. A., Davis, J. C., Vazirian, S., & Khan, K. M. (2015). Exercise as medicine—the use of group medical visits to promote physical activity and treat chronic moderate depression: A preliminary 14-week pre–post study. *BMJ Open Sport & Exercise Medicine*, *1*(1), e000036. https://doi.org/10.1136/bmjsem2015000036

Agarwal, P., Bias, T. K., Madhavan, S., Sambamoorthi, N., Frisbee, S., & Sambamoorthi, U. (2016). Factors associated with emergency department visits: A multistate analysis of adult fee-for-service Medicaid beneficiaries. *Health Services Research and Managerial Epidemiology, 3*, 2333392816648549. https://journals.sagepub.com/doi/pdf/10.1177/2333392816648549

Agency for Healthcare Research and Quality. (2018). *Strategy 6M: Group visits*. https://www.ahrq.gov/cahps/quality-improvement/improvement-guide/6-strategies-for-improving/access/strategy6m-group-visits.html

Alonso, J., Liu, Z., Evans-Lacko, S., Sadikova, E., Sampson, N., Chatterji, S., Abdulmalik, J., Aguilar-Gaxiola, S., Al-Hamzawi, A., Andrade, L. H., & Bruffaerts, R. (2018). Treatment gap for anxiety disorders is global: Results of the world mental health surveys in 21 countries. *Depression and anxiety*, *35*(3),195 208. https://doi.org/10.1002/da.22711

Altman, S., & Lewin, M. E. (Eds.). (2000). *America's health care safety-net: Intact but endangered*. National Academies Press. http://elibrary.pcu.edu.ph:9000/digi/NA02/2000/9612.pdf

American Psychiatric Association, A. P., & American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (Vol. 10). Washington, DC: American Psychiatric Association.

Balasubramanian, B. A., Cohen, D. J., Jetelina, K. K., Dickinson, L. M., Davis, M., Gunn, R., Gowen, K., deGruy, F. K., Miller, B. F., & Green, L. A. (2017). Outcomes of integrated behavioral health with primary care. *The Journal of the American Board of Family Medicine, 30*(2), 130-139. https://doi.org/10.3122/jabfm.2017.02.160234

Bandelow, B., Michaelis, S., & Wedekind, D. (2017). Treatment of anxiety disorders. *Dialogues in Clinical Neuroscience*, *19*(2), 93. https://doi.org/10.31887/DCNS.2017.19.2/bbandelow

Barberis, N. (2018). Richard Thaler and the rise of behavioral economics. *The Scandinavian Journal of Economics*, *120*(3), 661-684. https://doi.org/10.1111/sjoe.12313

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: care, health, and cost. *Health Affairs*, *27*(3), 759-769. https://doi.org/10.1377/hlthaff.27.3.759

Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: Care of the patient requires care of the provider. *The Annals of Family Medicine*, *12*(6), 573-576. https://doi.org/10.1370/afm.1713

Bottaccioli, F., Carosella, A., Cardone, R., Mambelli, M., Cemin, M., D'Errico, M. M., Ponzio, E., Bottaccioli, A. G., & Minelli, A. (2014). Brief training of psychoneuroendocrinoimmunology-based meditation (PNEIMED) reduces stress

symptom ratings and improves control on salivary cortisol secretion under basal and stimulated conditions. *Explore*, *10*(3), 170-179. https://doi.org/10.1016/j.explore.2014.02.002

Buche, J., Singer, P. M., Grazier, K., King, E., Maniere, E., & Beck, A. J. (2017). Primary care and behavioral health workforce integration: Barriers and best practices. *Behavioral Health Workforce Research Center*, *1*(1), 1-16. https://behavioralhealthworkforce.org/wpcontent/uploads/2017/02/FA2P3_Team-based-Care-Case-Studies_Full-Report.pdf

Bureau of Labor Statistics. (2020). *May 2020 occupation profiles*. https://www.bls.gov/oes/current/oes_stru.htm

Burnett-Zeigler, I., Schuette, S., Victorson, D., & Wisner, K. L. (2016). Mind–body approaches to treating mental health symptoms among disadvantaged populations: A comprehensive review. *The Journal of Alternative and Complementary Medicine*, *22*(2), 115-124. https://doi.org/10.1089/acm.2015.0038

Chao, M. T., Hurstak, E., Leonoudakis-Watts, K., Sidders, F., Pace, J., Hammer, H., & Wismer, B. (2019). Patient-reported outcomes of an integrative pain management program implemented in a primary care safety net clinic: A quasi experimental study. *Journal of General Internal Medicine*, *34*(7), 1105-1107. https://doi.org/10.1007/s11606-019-04868-0

Chisholm, D., Sweeny, K., Sheehan, P., Rasmussen, B., Smit, F., Cuijpers, P., & Saxena, S. (2016). Scaling-up treatment of depression and anxiety: A global return on

investment analysis. *The Lancet Psychiatry*, *3*(5), 415-424. https://doi.org/10.1016/S2215-0366(16)30024-4

Clarke, T. C., Black, L. I., Stussman, B. J., Barnes, P. M., & Nahin, R. L. (2015). Trends in the use of complementary health approaches among adults: United States, 2002-2012. *National Health Statistics Reports*, (79), 1. https://www-ncbi-nlmnih-gov.ezp.waldenulibrary.org/pmc/articles/PMC4573565/

Cook, B. L., Trinh, N. H., Li, Z., Hou, S. S. Y., & Progovac, A. M. (2017). Trends in racial-ethnic disparities in access to mental health care, 2004–2012. *Psychiatric Services, 68*(1), 9-16. https://ps-psychiatryonline.org.ezp.waldenulibrary.org/doi/pdf/10.1176/appi.ps.201500453

Cornelio-Flores, O., Lestoquoy, A. S., Abdallah, S., DeLoureiro, A., Lorente, K., Pardo, B., Olunwa, J., & Gardiner, P. (2018). The Latino integrative medical group visit as a model for pain reduction in underserved Spanish speakers. *The Journal of Alternative and Complementary Medicine*, *24*(2), 125-131. https://doi.org/10.1089/acm.2017.0132

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of anti-discrimination doctrine, feminist theory and antiracist politics. *The University of Chicago Legal Forum 139*, 139–167. https://philpapers.org/archive/CREDTI.pdf?ncid=txtlnkusaolp00000603

Daitch, C. (2018). Cognitive behavioral therapy, mindfulness, and hypnosis as treatment methods for generalized anxiety disorder. *American Journal of Clinical Hypnosis*, *61*(1), 57-69. https://doi.org/10.1080/00029157.2018.1458594

Dark, T., Flynn, H. A., Rust, G., Kinsell, H., & Harman, J. S. (2017). Epidemiology of emergency department visits for anxiety in the United States: 2009-2011. *Psychiatric Services*, *68*(3), 238-244. https://doi.org/10.1176/appi.ps.201600148

Dresner, D., Gergen Barnett, K., Resnick, K., Laird, L. D., & Gardiner, P. (2016). Listening to their words: A qualitative analysis of integrative medicine group visits in an urban underserved medical setting. *Pain Medicine, 17*(6), 1183-1191. https://doi.org.ezp.waldenulibrary.org/10.1093/pm/pnw030

Edelman, D., McDuffie, J. R., Oddone, E., Gierisch, J. M., Nagi, A., & Williams, J. J. (2012). *Shared medical appointments for chronic medical conditions: A systematic review*. Department of Veterans Affairs. https://europepmc.org/article/nbk/nbk99785

Elbel, B., Gillespie, C., & Raven, M. C. (2014). Presenting quality data to vulnerable groups: Charts, summaries or behavioral economic nudges? *Journal of Health Services Research & Policy*, *19*(3), 161-168. https://doi.org/10.1177%2F1355819614524186

Ernst, F. R., Mills, J. R., Berner, T., House, J., & Herndon, C. (2015). Opioid medication practices observed in chronic pain patients presenting for all-causes to emergency departments: Prevalence and impact on health care outcomes. *Journal of Managed Care & Specialty Pharmacy*, *21*(10), 925-936. https://www.jmcp.org/doi/pdf/10.18553/jmcp.2015.21.10.925

Farber, E. W., Ali, M. K., Van Sickle, K. S., & Kaslow, N. J. (2017). Psychology in patient-centered medical homes: Reducing health disparities and promoting health equity. *American Psychologist*, *72*(1), 28. https://doi.org/10.1037/a0040358

Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses, *Behavior Research Methods, 41* (4), 1149-1160. https://doi.org/10.3758/BRM.41.4.1149

com.ezp.waldenulibrary.org/article/10.1007/s10995-016-1935-y

Frankfort-Nachmias, C., & Leon-Guerrero, A. (2016). *Social statistics for a diverse society*. Sage Publications.

Gardiner, P., Luo, M., D'Amico, S., Gergen-Barnett, K., White, L. F., Saper, R., Mitchell, S., & Liebschutz, J. M. (2019). Effectiveness of integrative medicine group visits in chronic pain and depressive symptoms: A randomized controlled trial. *PloSone*, *14*(12). https://doi.org/10.1371/journal.pone.0225540

Gardiner, P., Dresner, D., Barnett, K. G., Sadikova, E., & Saper, R. (2014). Medical group visits: a feasibility study to manage patients with chronic pain in an underserved urban clinic. *Global Advances in Health and Medicine*, *3*(4), 20-26. https://doi.org/10.7453/gahmj.2014.011

Gardiner, P., Lestoquoy, A. S., Gergen-Barnett, K., Penti, B., White, L. F., Saper, R., Fredman, L., Stillman, S. Negash, N.L, Adelstein, P., & Brackup, I. (2017). Design of the integrative medical group visits randomized control trial for underserved patients with chronic pain and depression. *Contemporary Clinical Trials, 54,* 25-35. https://doi.org/10.1016/j.cct.2016.12.013

Gareau, S., Lòpez-De Fede, A., Loudermilk, B. L., Cummings, T. H., Hardin, J. W., Picklesimer, A. H., Crouch, E., & Covington-Kolb, S. (2016). Group prenatal care results in Medicaid savings with better outcomes: A propensity score analysis of Centering Pregnancy participation in South Carolina. *Maternal and Child Health Journal, 20*(7), 1384-1393. https://link-springer

Gates, K., Petterson, S., Wingrove, P., Miller, B., & Klink, K. (2016). You can't treat what you don't diagnose: An analysis of the recognition of somatic presentations of depression and anxiety in primary care. *Families, Systems, & Health*, *34*(4), 317. https://doi.org/10.1037/fsh0000229

Geller, J. S., Kulla, J., & Shoemaker, A. (2015). Group medical visits using an empowerment-based model as treatment for women with chronic pain in an underserved community. *Global Advances in Health and Medicine, 4(*6), 27-31. https://doi.org/10.7453/gahmj.2015.057

Gkiouleka, A., Huijts, T., Beckfield, J., & Bambra, C. (2018). Understanding the micro and macro politics of health: Inequalities, intersectionality & institutions—A research agenda. *Social Science & Medicine*, *200*, 92-98. https://doi.org/10.7453/gahmj.2015.057

Goodwin, R. D., Weinberger, A. H., Kim, J. H., Wu, M., & Galea, S. (2020). Trends in anxiety among adults in the United States, 2008–2018: Rapid increases among young adults. *Journal of Psychiatric Research, 130*, 441-446. https://doi.org/10.1016%2Fj.jpsychires.2020.08.014

Housden, L., Browne, A. J., Wong, S. T., & Dawes, M. (2017). Attending to power differentials: How NP-led group medical visits can influence the management of chronic conditions. *Health Expectations*, *20*(5), 862-870. https://doi.org/10.1111/hex.12525

Iturralde, E., Chi, F. W., Grant, R. W., Weisner, C., Van Dyke, L., Pruzansky, A., Bui, S., Madvig, P., Pearl, R., & Sterling, S. A. (2019). Association of anxiety with high -cost health care use among individuals with type 2 diabetes. *Diabetes Care*, *42*(9), 1669-1674. https://care.diabetesjournals.org/content/diacare/42/9/1669.full.pdf

Izaguirre-Riesgo, A., Menéndez-González, L., & Pérez, F. A. (2020). Effectiveness of a nursing program in self-care and mindfulness, for the approach of common mental disorder, in primary care. *Primary Care, 52* (6), 400-409. https://doi.org/10.1016/j.aprim.2019.05.015

Jaber, R., Braksmajer, A., & Trilling, J. S. (2006). Group visits: A qualitative review of current research. *The Journal of the American Board of Family Medicine*, *19*(3), 276-290. https://www.jabfm.org/content/jabfp/19/3/276.full.pdf

James, T. D., Smith, P. C., & Brice, J. H. (2010). Self-reported discharge instruction adherence among different racial groups seen in the emergency department. *Journal of the National Medical Association, 102*(10), 931-6. https://doi.org/10.1016/S0027-9684(15)30712-4

Johnson, P. J., Jou, J., Rockwood, T. H., & Upchurch, D. M. (2019). Perceived benefits of using complementary and alternative medicine by race/ethnicity among midlife

and older adults in the United States. *Journal of Aging and Health*, *31*(8), 1376 1397. https://doi.org/10.1177%2F0898264318780023

Jordan, K., Lofton, S., & Richards, E. A. (2021). Strategies for embedding population health concepts into nursing education. *Nursing Forum*, *56*(1), 208-213. https://doi.org/10.1111/nuf.12498

Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8(*2), 163-190.

Linman, S., Benjenk, I., & Chen, J. (2019). The medical home functions of primary care practices that care for adults with psychological distress: A cross-sectional study. *BMC Health Services Research*, *19*(1), 21. https://doi.org/10.1186/s12913018-3845-8

Martinez-Hume, A. C., Baker, A. M., Bell, H. S., Montemayor, I., Elwell, K., & Hunt, L. M. (2017). "They treat you a different way:" Public insurance, stigma, and the challenge to quality health care. *Culture, Medicine, and Psychiatry, 41*(1), 161 180. https://doi.org/10.1007/s11013-016-9513-8

Mehl-Madrona, L., Mainguy, B., & Plummer, J. (2016). Integration of complementary and alternative medicine therapies into primary-care pain management for opiate reduction in a rural setting. *The Journal of Alternative and Complementary Medicine, 22*(8), 621-626. https://doi.org/10.1089/acm.2015.0212

Moraes, L. J., Miranda, M. B., Loures, L. F., Mainieri, A. G., & Mármora, C. H. C. (2018). A systematic review of psychoneuroimmunology-based

interventions. *Psychology, Health & Medicine*, *23*(6), 635-652. https://doi.org/10.1080/13548506.2017.1417607

Navarro-Haro, M. V., Modrego-Alarcón, M., Hoffman, H. G., López-Montoyo, A., Navarro-Gil, M., Montero-Marin, J., Garcia-Palacios, A., Borao, L. & García Campayo, J. (2019). Evaluation of a mindfulness-based intervention with and without virtual reality dialectical behavior Therapy® mindfulness skills training for the treatment of generalized anxiety disorder in primary care: A pilot study. *Frontiers in Psychology*, *10*, 55. https://doi.org/10.3389/fpsyg.2019.00055

NIH (2017). National Institute of Mental Health. *Mental illness health statistics.* https://www.nimh.nih.gov/health/statistics/mental-illness.shtml

Noffsinger, E. B. (2012). *The ABCs of group visits: An implementation manual for your practice*. Springer Science & Business Media.

Ornish D., Brown S. E., Scherwitz L. W., Billings J. H., Armstrong W. T., Ports, T. A., McLanahan, S. M., Kirkeeide, R. L., Gould, K. L. & Brand, R. J. (1990). Can lifestyle changes reverse coronary heart disease? The lifestyle heart trial. *Lancet*, *336*, 129–133. https://www.chrisjbradshaw.com/wpcontent/uploads/2016/01/Can-lifestyle-changes-reverse-coronary-heart-diseaseOrnish-Lancet-1990.pdf

Parikh, M., Rajendran, I., D'Amico, S., Luo, M., & Gardiner, P. (2019). Characteristics and components of medical group visits for chronic health conditions: A systematic scoping review. *The Journal of Alternative and Complementary Medicine*, *25*(7), 683-698. https://doi.org/10.1089/acm.2018.0524

[Quadruple Aim]. Retrieved March 31, 2020 https://www.google.com/search?q=quadruple+aim+free+stock&tbm=isch&sour=univ&sa=X&ved=2ahUKEwiw2JTyjcboAhVsc98KHa7NCt4Q7Al6BAgGEB&biw=1164&bih=631#imgrc=HffB1pFIvfPxmM

Ramos, K., Cortes, J., Wilson, N., Kunik, M. E., & Stanley, M. A. (2017). Vida calma: CBT for anxiety with a Spanish-speaking Hispanic adult. *Clinical Gerontologist*, *40*(3), 213-219. https://doi.org/10.1080/07317115.2017.1292978

Ray, A., Gulati, K., & Rai, N. (2017). Vitamins and hormones. In Gerald Litwack (Ed), *Stress, anxiety, and immunomodulation: A pharmacological analysis.* (pp. 1-25). Academic Press. https://doi.org/10.1016/bs.vh.2016.09.007

Richardson, L. D., Babcock Irvin, C., & Tamayo-Sarver, J. H. (2003). Racial and ethnic disparities in the clinical practice of emergency medicine. *Academic Emergency Medicine*, *10*(11), 1184-1188. https://doi.org/10.1197/S1069-6563(03)00487-1

Rowley, R. A., Phillips, L. E., O'Dell, L., El Husseini, R., Carpino, S., & Hartman, S. (2016). Group prenatal care: A financial perspective. *Maternal and Child Health Journal, 20*(1), 1-10. https://doi.org/10.1007/s10995-015-1802-2

Saluja, S., McCormick, D., Cousineau, M. R., Morrison, J., Shue, L., Joyner, K., & Hochman, M. (2019). Barriers to primary care after the affordable care act: A qualitative study of Los Angeles safety-net patients' experiences. *Health Equity*, *3*(1), 423-430. https://doi.org/10.1089/heq.2019.0056

Sampio, C. V. S., Lima, M. G., & Ladeia, A. M. (2016). Efficacy of healing meditation in reducing anxiety of individuals at the phase of weight loss maintenance: A

randomized blinded clinical trial. *Complementary Therapies in Medicine*, *29*, 1-8. https://doi.org/10.1016/j.ctim.2016.08.005

Schmider, E., Ziegler, M., Danay, E., Beyer, L., & Bühner, M. (2010). Is it really robust? Reinvestigating the robustness of ANOVA against violations of the normal distribution assumption. *Methodology, 6*(4), 147–151. https://doi.org/10.1027/1614-2241/a000016

Serrano, N., Prince, R., Fondow, M., & Kushner, K. (2018). Does the primary care behavioral health model reduce emergency department visits?. *Health Services Research*, *53*(6), 4529-4542. https://doi.org/10.1111%2F1475-6773.12862

Shaw, S., Dresner, D., Gardiner, P., Barnett, K. G., & Saper, R. (2014). Integrative medicine group visits and emergency department utilization. *The Journal of Alternative and Complementary Medicine, 20*(5), A67-A68. https://doi.org/10.1089/acm.2014.5176.abstract

Simpson, S. A., Joesch, J. M., West, I. I., & Pasic, J. (2014). Who's boarding in the psychiatric emergency service?. *Western Journal of Emergency Medicine*, *15*(6), 669. https://doi.org/10.5811%2Fwestjem.2014.5.20894

Smith, B., Metzker, K., Waite, R., & Gerrity, P. (2015). Short-form mindfulness-based stress reduction reduces anxiety and improves health-related quality of life in an inner-city population. *Holistic Nursing Practice*, *29*(2), 70-77. https://doi.org/10.1097/HNP.0000000000000075

Spinelli, W. M. (2013). The phantom limb of the triple aim. *Mayo Clinic Proceedings (88)* 12, 1356-1357. https://doi.org/10.1016/j.mayocp.2013.08.017

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092-1097. https://doi.org/10.1001/archinte.166.10.1092

Stone, A., Rogers, D., Kruckenberg, S., & Lieser, A. (2012). Impact of the mental healthcare delivery system on California emergency departments. *Western Journal of Emergency Medicine*, *13*(1), 51. https://doi.org/10.5811%2Fwestjem.2011.6.6732

Strickland, C., Merrell, S., & Kirk, J. K. (2016). Centering pregnancy meeting the quadruple aim in prenatal care. *North Carolina Medical Journal, 77*(6), 394 397. https://www.ncmedicaljournal.com/content/ncm/77/6/394.full.pdf

Sutton, J. P., Washington, R. E., Fingar, K. R., & Elixhauser, A. (2016). *Characteristics of Safety-Net Hospitals, 2014: statistical brief#213*. Agency for Healthcare Research and Quality. https://europepmc.org/article/nbk/nbk401306#free-full-text

Thaler, R. H. (2016). Behavioral economics: Past, present, and future. *American Economic Review*, *106*(7), 1577-1600. https://doi.org/10.1257/aer.106.7.1577

Thompson-Lastad, A. (2018). Group medical visits as participatory care in community health centers. *Qualitative Health Research*, *28*(7), 1065-1076. https://doi.org/10.1177%2F1049732318759528

Thompson-Lastad, A., Gardiner, P., & Chao, M. T. (2019). Integrative group medical visits: A national scoping survey of safety-net clinics. *Health Equity*, *3*(1), 1-8. https://doi.org/10.1089/heq.2018.0081

Thompson-Lastad, A., & Rubin, S. (2020). A crack in the wall: Chronic pain management in integrative group medical visits. *Social Science & Medicine*, *258*, 113061. https://doi.org/10.1016/j.socscimed.2020.113061

Valaitis, R. K., Wong, S. T., MacDonald, M., Martin-Misener, R., O'Mara, L., Meagher Stewart, D., Isaacs, S., Murray, N., Baumann, A., Burge, F., Green, M., Kaczorowski, J., & Savage, R. (2020). Addressing quadruple aims through primary care and public health collaboration: Ten Canadian case studies. *BMC Public Health, 20*(1), 1–16. https://doi.org/10.1186/s12889-020-08610-y

Wadsworth, K. H., Archibald, T. G., Payne, A. E., Cleary, A. K., Haney, B. L., & Hoverman, A. S. (2019). Shared medical appointments and patient-centered experience: A mixed-methods systematic review. *BMC family practice, 20*(1), 1 13. https://doi.org/10.1186/s12875-019-0972-1

Webster, R., Thompson, A. R., Norman, P., & Goodacre, S. (2017). The acceptability and feasibility of an anxiety reduction intervention for emergency department patients with non-cardiac chest pain. *Psychology, Health & Medicine*, *22*(1), 1-11. https://doi.org/10.1080/13548506.2016.1144891

Whiteford, H. A., Ferrari, A. J., Degenhardt, L., Feigin, V., & Vos, T. (2015). Global burden of mental, neurological, and substance use disorders: An analysis from the Global Burden of Disease Study 2010. *Mental, Neurological, and Substance Use Disorders*, 29. https://doi.org/10.1371/journal.pone.0116820

Whittaker, W., Anselmi, L., Kristensen, S. R., Lau, Y. S., Bailey, S., Bower, P., Checkland, K., Elvey, R., Rothwell, K., Stokes, J., & Hodgson, D. (2016).

Associations between extending access to primary care and emergency department visits: A difference-in-differences analysis. *PLoS Medicine,13*(9), e1002113. https://doi.org/10.1371/journal.pmed.1002113

Manuscript 2

Effect of Participation in Integrative Group Medical Visits on Benzodiazepine Use

Annamma Udaya Thomas

Walden University

SAMHSA ANA MFP Fellow

Outlet for Manuscript

Drug and Alcohol Dependence: This journal aligns with the content in the manuscript as it has other published articles on anxiety, benzodiazepine use, comorbid substance use disorder, and the use of tapers for benzodiazepines. There was also one article on ethnic differences in patterns of use. However, there has not been anything published on any of the aforementioned topics in this journal since 2018, nor on the use of meditation in conjunction with other tapers. The editors may be interested given the global burden of disease and especially during this year given rise and exacerbation of those already suffering with an anxiety disorder during the current global pandemic.

Abstract

Background: The purpose of this retrospective quantitative comparative analysis was to determine whether low-income primary care patients with diagnoses of anxiety, who have participated in integrative medicine group visit (IGMV), have reduced use of benzodiazepine (BZD) compared to patients receiving care in individualized appointments and did not participate in IGMV.

Methods: A purposeful sample of 85 low-income primary care adult patients ages 18-75 with an anxiety disorder (43 IGMV, 42 usual care) were reviewed from existing 2017-2018 clinical data. The data was analyzed using repeated-measures ANOVA.

Results: BZD dose was reduced in the IGMV group compared to usual care, but the number of patients prescribed BZDs all year was nine of the 85 patients. The difference within the groups was not statistically significant ($p = 0.05$) and the difference between the groups was not statistically significant ($p = 0.67$).

Conclusion: There was no statistically significant correlation that IGMV provides greater access to BZD tapering than usual care. Further research should survey the patients with anxiety disorders in the catchment area of this health system to estimate nonprescription BZD use that is not reflected in the current sample.

Introduction

Anxiety disorders are a growing population health concern and the prevalence has surpassed depression disorders with women having twice the rate of men (NIH, 2017). Of note, according to the DSM-5, posttraumatic stress disorder (PTSD) has been removed from anxiety disorders classification and is now classified under trauma related disorders (APA, 2013). The DSM-5 classification of anxiety disorders includes primarily in childhood separation anxiety disorder, selective mutism, and specific phobias whereas in adulthood higher percentages of panic disorder, agoraphobia, social anxiety disorder (SAD), general anxiety disorder (GAD-which makes up more than half of anxiety cases), substance/medication-induced anxiety disorder, and anxiety disorder due to a medical concern (APA, 2013; Alonso et al., 2018; Bandelow et al., 2017).

In practice, PCPs commonly use GAD-7 and additional questions to diagnose anxiety. If the diagnosis is unclear, the diagnoses unspecified anxiety disorder is often utilized. In research, common instruments for measuring anxiety of participants include the Hamilton Anxiety Scale and GAD-7 (Sampaio et al., 2016; Spitzer et al., 2006; Webster et al., 2017).

Benzodiazepines (BZDs) are modulators of the neurotransmitter gamma-aminobutyric acid and act as tranquilizers and sedatives (Fluyau et al., 2018). BZDs were designed as a rescue medication primarily for panic attacks and sleep or preprocedural sedation, respectively (Fluyau et al., 2018) or as a bridge until SSRI, SNRI or other anxiolytic reached therapeutic levels (Blackwelder & Bragg, 2016). However, due to their rapid alleviation of symptoms, patients have come to appreciate BZD effects albeit

short lived. Repeated use often develops into dependency and places individuals at risk for addiction to BZDs (Vicens et al., 2011). Addiction to BZDs is a factor in high-cost utilization when supplies run out or alternatives to addressing anxiety are not available (Dark et al., 2017).

Singularly or concurrently with opioids, BZD use and misuse is a population health and systemic concern. In a retrospective study of medical expenditure data from 2011, 2013 and 2015, persons with anxiety had an almost ten-fold odds ratio for opioid BZD concurrent use (Vadiei & Bhattacharjee, 2020). As with opioids, efforts have also been underway to curb BZD use, which are often used concurrently with opioids and increase morbidity and mortality from overdose (Vadiei & Bhattacharjee, 2020).

According to the 2018 National Survey on Drug Use and Health, an estimated 5 million adults aged 18 and over misused BZDs (SAMHSA, 2019). For patients from other countries, or those that travel to other countries, BZDs (and other psychiatric medications) are available over the counter without a prescription from a licensed practitioner (Moreno et al., 2018). Online cryptomarkets are another portal for access to BZD that is difficult to investigate and were not included in this study, but are a known source for ongoing abuse of BZD (Van Hout & Hearne, 2017). Therefore, the aforementioned SAMHSA (2019) statistic was the only calculable figure. This study focused on a nonpharmacological intervention for the reduction of BZD use.

In efforts to improve their mental health or due to wait times for a consultation, many patients may alone or in conjunction with prescribed meds, self-medicate with home remedies, teas, herbs, and nutritional supplements that they may not discuss with

their practitioner. More than half of patients report their primary care practitioner (PCP) has never asked them about their herb or supplement use (Pruitt et al., 2018). Allopathic practitioners receive little education on herbs, supplements and integrative approaches (Pruitt et al., 2018). While many are relatively safe, others have potentiating effects, interactions, or alternatively no evidence-based effect (Pruitt et al., 2018). Self-medicating of both allopathic and nonallopathic substances may and has resulted in serious and/or fatal consequences (Alford et al., 2016; Fluyau et al., 2018).

Creating a patient care environment for patients with support from their peers that increases options and trust (Lavoie et al., 2013; Thompson-Lastad, 2018) to disclose self-treatments aids in the discovery of alternative coping mechanisms that are critical in addressing this mental health access problem. Group medical visits (GMV) may provide that environment. GMV are shared medical appointments with a group of patients being seen simultaneously with their PCP, lasting from 1-2 hours with a range in attendance from 5-16 patients with some common diagnoses and/or common interest in receiving an intervention (AHRQ, 2018).

Significance/Importance

Kabat-Zinn et al (1985) laid the groundwork for the use of mindfulness with patients while Ornish et al (1990) and Noffsinger (2012) laid the groundwork for building practice models that assist the individual provider to manage monthly chronic care group visits that group patients by diagnosis or utilization behavior (Noffsinger, 2012). In the past 20 years, practitioners serving low-income adults have offered GMV in the context of primary care that is often deemed a patient centered medical home (PCMH). PCMHs

include private and government community clinics, national health service (NHS) and federally qualified health centers ([FQHCs]Wadsworth et al., 2019). PCMH certification requires that there is a health care team for each patient coordinating care to ensure that there are no care gaps and addressing different aspects of their health, including social determinants of health (SDH) (Linman et al., 2019).

With the utilization of GMV in PCMH, researchers have noted that efficiency of care increases as care team members work together with multiple patients at a time, creating access and peer support simultaneously (Lavoie et al., 2013; Parikh et al., 2019). Earlier GMVs focused on diabetes (Vaughan et al., 2019), pregnancy and parenting (Wadsworth et al., 2019), and cancer (Reed et al., 2014). Since 1990, different models including transdiagnostic groups focused on stress reduction, teaching kitchens [low-cost nutrition instruction] (Kakareka et al., 2019), and integrative pain management programs (Chao et al., 2019; Gardiner et al., 2019) have burgeoned. Research on the effectiveness of these and other GMV models have also been employed with a surge noted after 2014 (Parikh et al., 2019).

A survey of PCMH found that less than half of the patients have on-site access to a behaviorist, social worker, or psychologist on the care team (Kessler et al., 2014). For those that have integration of behavioral health (IBH) at the PCMH, there is improved adherence to treatment plans and improved health outcomes (Balasubramanian et al., 2017). Zeiss and Karlin (2008) found that patients preferred IBH at the location they received their primary care (colocated care). Access to GMV has increased IBH in

primary care and allowed patients the convenience of having their primary and mental health care in one location (colocation).

In a U.S. national health statistics report of over 88,000 adults, patients reported more interest in complementary and integrative health (CIH) practices to manage their health, with yoga being the most prevalent CIH practice (Clarke et al., 2015). Integrative Group Medical Visits (IGMV) builds on the growing use of GMV for chronic care. IGMVs have been implemented in response to interest in CIH, which remains inaccessible to many people due to limited insurance coverage and high out-of-pocket cost. IGMVs contribute to improving patient experience, improving population health, reducing costs, and increasing practitioner satisfaction (Cornelio-Flores et al., 2018; Dresner et al., 2016; Gardiner et al., 2017, Gardiner et al., 2019; Gareau et al., 2016; Geller et al., 2015; Mehl-Madrona et al., 2016; Rowley et al., 2016; Shaw et al., 2014; Strickland et al, 2016).

Conceptual Framework

The theoretical basis for understanding the phenomena occurring with low-income racially/ethnically diverse patients in the context of the current health system would be a combination of the Quadruple Aim Framework (QAF) with intersectionality theory and the theory of mental accounting. This combination in thought has not been utilized in previous research. The new framework is called integrative health equity in primary care framework.

The QAF is an expansion of the Triple Aim developed by leaders at the Institute of Healthcare Improvement. The Quadruple Aim includes an improved patient

experience, improved health outcomes or population health, reduced costs (Berwick et al, 2008), and then added higher practitioner satisfaction or care team wellbeing. The final aim was first described by William Spinelli (2013) as the "phantom limb" and later formalized as an important consideration in reducing burnout of practitioners (Bodenheimer & Sinsky, 2013).

While all four aims of IGMVs have been researched, the aims of focus in this study may be categorized under the right side of Figure 1, improved health outcomes and reducing costs, but should still be seen in the context of the four aims of the Quadruple Aim Framework (QAF), as patient experience and care team well-being also affect the other aims indirectly or directly. In addition, the use of CIH modalities in the context of this framework influences the whole in delivering whole person integrated care.

Figure 1

Quadruple Aim Framework

Note. Quadruple Aim (n.d.).

Crenshaw coined the concept of intersectionality to view the intersection of race and gender as it relates to the marginalization of black women (Crenshaw, 1989). The intersectionality theory has been adopted in the health professions to explain the complex way in which the social determinants of health like economic stability, education level, environment, access to food and health care and social networks or lack thereof, interact with different aspects of a person's identity to shape the discriminatory experiences that some marginalized groups may face within health systems (Gkiouleka et al., 2018). Intersectionality theory provided a lens in which to look at the QAF keeping in mind that safety-net hospital patients have different outcomes—for this study, specifically those who are underserved and have an anxiety diagnosis.

Another area which enlightens this conceptual framework, is that of behavioral economics. Elbel et al. (2014) concluded that low-income patients are particularly understudied when it comes to their health care choices and that vulnerable populations would benefit from assistance in making better health care choices. They draw on Thaler's (2016) notion of nudges to suggest that nudges are key in assisting patients make better choices.

Thaler (2016) reinserts human psychology and behavior into the field of economics; reemphasizing the work of 18th century economist Smith to bring back the notion of the human drivers to economic choices (Barberis, 2018). The reasons more low-income patients than middle to higher income patients go to the ED for nonemergent reasons that include mental health care may include factors such as transportation issues, custom of going to hospitals versus outpatient in their countries of origin, and/or lack of a

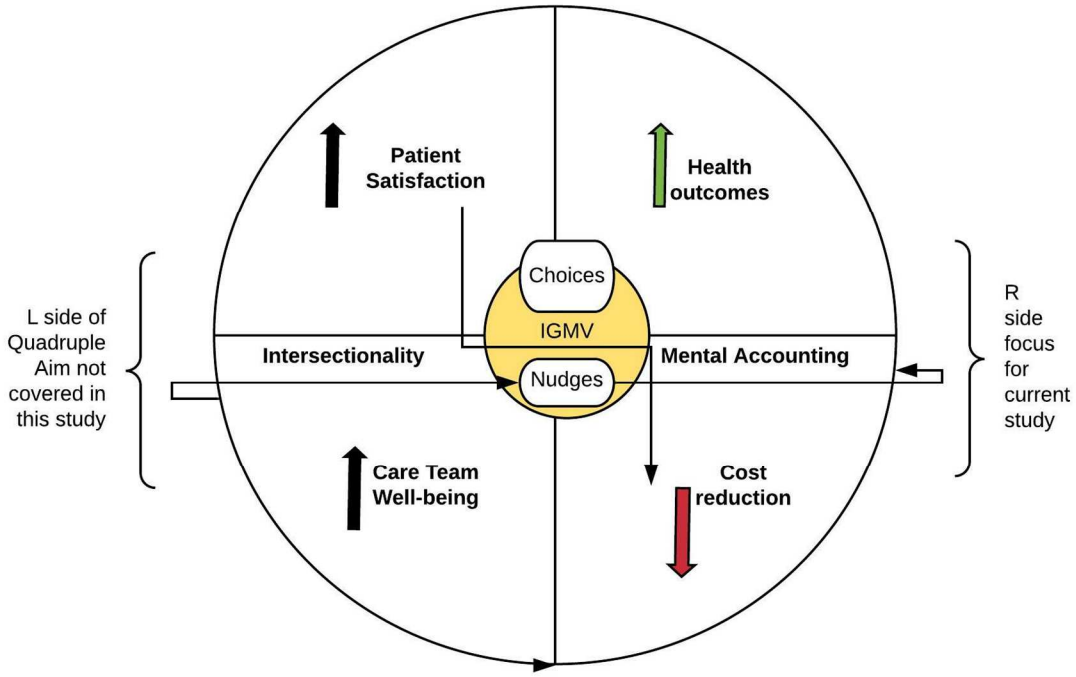
PCP or insurance. Thaler's (2016) theory of mental accounting helps to explain why people make some of the choices they make, some of which may be rational, but more often are not rational, are reactive and based on emotion, pain, anxiety level and what is important at the present moment not long term. He recommends that health care practitioners provide choice architecture to patients so that they may make more informed and better choices for their health.

Utilizing the theories of intersectionality and mental accounting to frame the research question provides insight into the interaction of these concepts together as they relate to the two aims of health outcomes and cost reduction. These are concepts and theories steeped in the context of the capitalist system, which, by definition, does not support the underserved, low-income racially/ethnically diverse patients. However, the accessibility of the expensive and expansive hospital systems and their emergency departments lend any and all to choose this location for their care (Stone et al., 2012), regardless of its utility to meet the needs presented.

Combining these lenses together opened a new way of viewing the current healthcare system and addressing the inequities in care within this contextual framework. Choice architecture combined with integrative and appropriate care may be communicated with appropriate nudges and in culturally and diverse spaces where patients may feel safety, trust and access to the care that is needed to address access and equity. Integration of the IGMV as a space that promotes choices and coaching frames the utility of IGMV for increasing mental health access and health equity for low-income racially/ethnically diverse patients may result in Figure 2.

Figure 2

Integrative Health Equity in Primary Care Framework



Original Contribution

The original contribution of this study was viewing IGMV as an intersectional institutional intervention for the promotion of IBH in PC for low-income diverse persons. The potential diffusion of IGMV by safety-net institutions could influence access to integrative mental health care. Framing IGMV in the context of the existing healthcare system allows decision-makers to conceptualize how IGMV contribute to the system's healthcare priorities (Figure 2).

While limited, in-person and telehealth IGMVs groups are being integrated into primary care. The potential positive social change impact of scaling up could be greater

access to integrative mental health care for the underserved, improved mental health outcomes and reduction of nonemergent use of the hospital. This inquiry has contributed to the body of knowledge on integrative mental health care and the underserved. Additionally, with the known evidence, this intervention could be integrated further into multidisciplinary team education at both the preservice and inservice levels of education.

The purpose of this repeated-measures retrospective quantitative comparative analysis was to determine whether patients with diagnoses of anxiety, who have participated in IGMV, in the context of the PCMH, have reduced use of BZD compared to patients receiving usual care, who did not participate in IGMV. This analysis was set in the context of a study that researched two other related questions.

Usual care was defined as patients that were having their anxiety managed by their primary care provider, as participation in psychotherapy groups was controlled for. Utilizing the right side aims (reduction of costs and improved health outcomes) of the QAF allowed analysis of how these constructs were interrelated.

Relevant Scholarship

The current standard of care for patients with anxiety disorders is to prescribe selective serotonin reuptake inhibitors (SSRIs) and serotonin and norepinephrine reuptake inhibitors (SNRIs) along with nonpharmacological interventions, including but not limited to cognitive behavioral therapy (Blackwelder & Bragg, 2016; Driot et al., 2017). Some people with anxiety disorders use prescribed (and not prescribed) BZD. The risks of BZD include side effects (i.e., dizziness, falls, confusion, impaired memory, depression, etc.), dependence, and death from overdose potential (Furbish et al., 2017).

Likewise, some patients use both BZDs and other medications. Multiple studies have been completed to investigate the best taper method for discontinuation of BZDs. Results of a meta-analysis reviewing these studies found very little evidence that anything is better than placebo, respectively (Welsh et al., 2018).

The results point most favorably to paroxetine and imipramine, which were both found to be helpful in tapering and while mixed reviews suggest the use of melatonin, given insomnia is a frequently co-occurring diagnosis and it has a low side effect profile (Welsh et al., 3018). Propranolol had mixed outcomes also, but investigators report that it could be used on a trial basis since the options are limited. Buspirone had worse taper outcome than placebo (Welsh et al., 2018). Mindfulness meditation was not included in this meta-analysis. Yoga, with an emphasis on meditation and controlled breath was the only intervention better than placebo with greater outcomes with increased frequency (Saeed et al., 2019).

The problem is use of BZD for anxiety versus access to nonpharmacological integrative health interventions that could potentially reduce the use of these BZD in low-income diverse populations in a safety-net community. Due to the lack of professionals in the community PCPs are unable to refer out to psychologists (Driot et al., 2019). Patients are often referred out (Stussman et al., 2019) to interventions (like counseling, meditation and yoga classes) that they are unable to afford so they resort to medications from their PCP that are cheaper alternatives than accessing CIH in the community. IGMVs provide access to CIH that otherwise would not be accessible.

Aside from psychiatric medication use, other aspects of mental and emotional health have been documented in IGMV research with statistically significant improvements in mental health quality of life measured by the SF-36 with reductions in depression and loneliness (Gardiner, et al., 2019; Geller et al., 2011) and a decrease in pain medication usage (Gardiner, et al., 2019). IGMVs have taken on favorable roles in creating more access to CIH in the mainstream primary care setting. Bukar et al (2019) also found similar results in an in-patient psychiatric setting with significant reductions in anxiety lasting up to one day, which resulted in hiring of a yoga instructor as a staff member. Bukar et al (2019) noted that BZD use was reduced, but since not measured directly suggested that further research be conducted on how yoga and meditation affect the reduction of BZD use.

The progression of both qualitative and quantitative research has illuminated a need for describing the phenomenon of groups in primary care, the inclusion effect (Geller, 2019), or the access to CIH with the guidance of their PCP or the interdisciplinary nature that empowers patients to behavior change and accessing knowledge and resources. For example, in a qualitative study conducted in Canada, Lavoie et al. (2013), both practitioners and patients expressed the benefits of having GMV in a PCMH. Themes extracted from the interviews were increased self-management, improved information sharing, an increased trust of providers, less isolation and peer support.

Research results have shown an increase in patient satisfaction with the use of IGMV, exposing patients to other community members, increasing coping and

empowerment, reducing loneliness and having an opportunity to share experiences and community resources with each other (Dresner et. al., 2016, Geller et al., 2011, 2015; Housden et al., 2017; Lestoquoy et al., 2017; Thompson-Lastad, 2018). Housden et al. (2017) found that NP-led GMVs encouraged interprofessional practice and served to deconstruct some of the traditional primary care hierarchies between clinicians and between clinicians and patients. Orzechowski (2016) also found that there were decreased wait times for appointments from three months to one month in a feasibility study examining mindfulness groups for patients with fibromyalgia. Addressing and supporting people with anxiety disorders through an interdisciplinary approach at the primary care level integrating nonpharmacological methods may foster greater trust between diverse populations and their practitioners.

Research Question

What is the effect of IGMV on benzodiazepine dose in 1 year in low-income adult patients with anxiety disorders compared to low-income adult patients with anxiety disorders receiving usual care?

Methods

Participants

The IGMV participants of this retrospective study were 43 low-income adults ages 18-64 with an anxiety diagnosis that had participated in IGMV in a PCMH with IBH. The control group (usual care) were 42 low-income adults ages 18-64 with an anxiety diagnosis from the same PCMH that had not participated in IGMV but who were seeing their PCP for management of their anxiety and had access to colocated IBH.

Sample and Power

For this study, 85 subjects were de-identified from historical records from two groups, IGMV and usual care with 43 and 42, respectively in each group. The power of the tests was higher since the correlation coefficient between repeated measures was higher than 0.3. The ANOVA repeated-measures procedures in G*power computer software (Version 3.0) was used to calculate the required sample size (Faul et al., 2009).

For a repeated measure model, statistical power was addressed separately for main (within and between subjects) effects and interaction (within-subject-by-between-subject) effects. In a repeated measures design with 2 groups, each subject was measured at 2 time points, a level of significance of 0.05, a medium effect size of 0.25, and a correlation coefficient of at least 0.3 between repeated measures, and a statistical power of 0.80 required 46 subjects for within-factor (time) effects, 84 subjects for between-factor (group) effects, and 46 subjects for within-between factor interaction.

Variables/Sources of Data

The independent variable was the type of mental health service patients with an anxiety diagnosis received (usual versus IGMV) at the outpatient safety-net health care facility. The dependent variable was BZD prescription dose prior and after participation in the IGMV. BZD dose was defined as the strength of the medication in milligrams that was being prescribed. The sources of the data were de-identified safety-net hospital records from the electronic medical record which was the same for both the hospital and the outpatient setting. IGMV participants were selected if they had an anxiety diagnosis and attendance of at least four IGMV sessions during the year. Usual care patients were

filtered by anxiety diagnosis from the chronic pain registry from the same time period. Then the last reported dose of BZD was recorded for patients with anxiety related diagnoses at the two points in time. Health center staff filtered the data by inclusion criteria, de-identified the data by removing unique identifiers and downloaded into excel spreadsheets, which were sent to me.

Instrumentation or Measures

The type of data I received was patient demographics, such as gender, SES, patient's psychiatric disorder diagnoses, IGMV attendance, reported dose of BZD just prior and at the end of the year.

Design and Analysis

The design was a quantitative retrospective, comparative analysis research design. Secondary clinical data on Medicaid patients from 2017-2018 was available from a U.S. safety-net health system database. I used single stage sampling from two points in time, first at the end of 2017 for the BZD dose recorded prior to the start of IGMV sessions for 2018 and then from the end of 2018 for the last recorded dose of BZD. I compared reported BZD prescription dose for low-income adult patients with anxiety disorders who received IGMV versus BZD prescription dose for low-income adult patients with anxiety disorders who received usual care just prior and at the end of the year. Usual care was defined as patients that had their anxiety managed by their PCP but also had access to psychotherapy groups.

The comparison group was the group of patients with anxiety disorder that attended five or more IGMVs. The rationale for this design is that Gardiner et al. (2019)

found statistically significant differences in health outcomes with those attending five more IGMV sessions versus four or less in their RCT. The control group were those patients with anxiety disorders receiving usual care. The results revealed whether IGMV in the primary care environment was correlated with any significant changes in BZD prescription dose at this particular safety-net PCMH.

In order to protect human subjects, the institution agreed to send de-identified data for analyses and is aware that their site information will remain anonymous. The site contact person who sent the reports was not involved in the intervention or usual care of the patients for this study. The inclusion criteria for the data were: all patients included in the study had a diagnosis of anxiety disorder, low-income status, and received care from the same institution. Exclusion criteria were patients with insomnia and no comorbid anxiety diagnosis (excluding non-benzodiazepine hypnotics from analysis), active psychosis, schizophrenia, and bipolar diagnoses, or cancer diagnoses.

The principal contact person was a doctorally prepared psychologist and researcher. The site's team has not analyzed their IGMVs with the proposed questions, but they were interested in this type of data to plan for future IBH in primary care based on evidence. The psychologist voluntarily participated to have reports run that would filter the information needed from historical patient records of those with anxiety who obtained usual care and those that were participating in the PCP and psychologist coled IGMVs during the year 2018.

Differences in outcomes associated with the two groups were evaluated using repeated measures ANOVA. All patients were low-income adult Medicaid recipients, but individual incomes were not available.

Data analysis began with preparatory activities such as the treatment of missing data, identification of outliers and other such data cleaning tasks. A detailed descriptive analysis of all quantitative data was performed. Overall, statistical assumptions were not violated and are discussed in the results section below.

The first phase of the analysis consisted of using descriptive statistics in computing the summary measures (mean, median, standard deviation, and range) for the variables measured on interval or ratio scales and frequency distributions (absolute frequency and percent) for the variables measured on nominal or ordinal scales. Significance level was set at a *p*-value equal to or less than 0.05. All statistical analyses were carried out using SPSS (Version 27). Repeated-measures ANOVA was used to determine a decrease in BZD dose within subjects, between groups, within- subjects-by-between-group interactions (i.e., the pattern of change in BZD dose between the two groups over time).

Results

Execution

This quantitative, retrospective study was conducted with the proposed health center that has IBH in primary care and is situated in the western region of the U.S. The study was approved by the partner site's IRB for data collection on April 1, 2021. Walden University IRB subsequently approved the study on May 3, 2021 (IRB approval

number 05-03-21-0664376). The sample used for the study was a purposeful sample of 85 established patients with anxiety diagnoses that had colocated mental health care at their PCMH. The comparison group (IGMV group) was the alternative group care model that infused mindfulness meditation into the IGMV sessions. The control group (usual care) was the standard model of IBH in primary care.

The IGMV group was meant to be a mindfulness movement group in which the entire group was focused on the mind-body connection. However, there were not enough persons with an anxiety diagnosis established in these groups to support the proposed quantitative retrospective design plan. Hence, the data was rather collected from a pain and wellness group where mindfulness meditation was integrated at the beginning for 10 minutes and at the end for 10 minutes. The premeasurement BZD dose was from the end of 2017. The postmeasurement BZD dose was from the end of 2018.

The comparison group were individuals who had an existing anxiety disorder diagnosis and had attended four or more IGMV within the last year. The sample included 85 cases (n=43 comparison and n=42 controls). The comparison group's (IGMV) BZD dose level prior to the measurement of IGMV attendance was recorded (Time 1) and then recorded again at one year after (Time 2). The number of refills were proposed to be collected, but the site was unable to deliver this measure. Refills are typically monthly, but the dose represents the tapering and behavior change in administration of BZDs (personal communication, M. Changaris, June 17, 2021). The location of the BZD prescription ED versus PCMH was also anticipated, but was not available. The

comparison group was selected as 43 consecutive cases of individuals attending an IGMV who met inclusion criteria.

The control group (usual care) was a sample of 42 individuals who were chosen as consecutive cases who met the inclusion criteria, but did not attend any IGMV sessions. Usual care was defined as patients that were having their anxiety managed by their PCP, as participation in psychotherapy groups was controlled for by identifying that both comparison and control had access to usual individual or group psychotherapy and treatments.

The IGMV sessions were not designated for patients with anxiety diagnoses only. The patients selected for the retrospective analysis were patients with an anxiety diagnosis who had attended the wellness groups in which all patients also had a chronic pain diagnosis. Hence, both groups had a chronic pain diagnosis.

All patients had access to IBH services which consist of on-site therapists or psychiatrists who collaborate with the care team. The number of visits the sample had with these embedded therapists was also tracked. There were also external appointments with therapists or psychiatrists who are a part of a community network of providers or mental health clinics and these appointments were also tracked for the entire sample of patients.

Only nine patients in the sample of 85 patients were still prescribed BZDs; there was no missing data. How many were prescribed BZDs prior to this study time collections were not available. Regarding ages, the range was changed from 18-65 to the actual pool that was between 19-75. Due to the strict protection of patient identity, the

age of each patient and income level were not included. Once coded as IGMV or control, the patients' unique numerical identifiers were removed and patients were listed as 1-85 only.

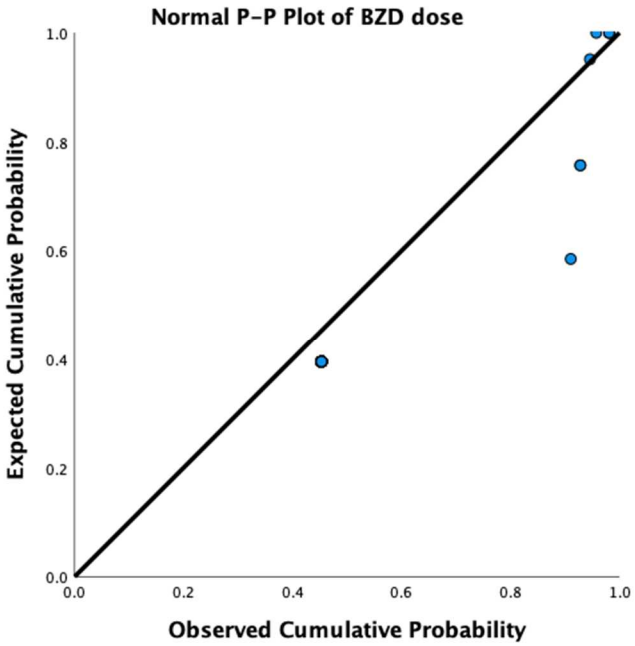
Ethical considerations were at the forefront of the execution of this study. All the data were collected and stored electronically and used only in the manner proposed in the IRB application and by the requirements of both Walden University and the Health System's IRBs. The data collected was de-identified and unique identifiers were discarded. I received the de-identified data in an Excel Spreadsheet. I screened for missing data, and when I saw that there was no missing data, I imported the data into SPSS version 27. I screened and coded the variables to prepare them for analysis. Then I performed descriptive statistics, frequencies and repeated measures ANOVA and saved the outputs.

I also checked to see if the assumptions for repeated measures ANOVA were met: independence of observations, data were interval level, normal distribution, and homogeneity (Frankfort-Nachmias & Leon-Guerrero, 2016). The first assumption assumes that neither group had influence over the other and each observation was independent of the other. This assumption was met as these were retrospective data that were selected after groups were already completed. The second assumption that data were interval was true for the dependent variable because the BZD dose while a scale measurement may be described by interval or ratio. The third assumption was the sample would be drawn from a population of normal distribution was violated since this was a purposeful sample. This violation did not interfere with the data analysis since there was

adequate power, but limited the generalizability of the results to the larger population (Schmider et al., 2010). The measurement points on the probability plot were mostly distributed along the diagonal line confirming that the data were normal.

Figure 3

Normal P-P Plot of Benzodiazepine Dose



The fourth assumption of homogeneity or populations variances being equal was also met. Levene's test was not significant for pre or post measurements ($p = 0.82$, $p = 0.10$) which confirmed equal variances.

Descriptive Statistics

I conducted a baseline descriptive analysis on the limited sociodemographic information available including gender, race/ethnicity, and stress-related chronic comorbidities. The majority of the patients were female (65 of 85, 76%), Caucasian (43

of 85, 48%). The ages of the participants were not shared as a part of the de-identification process, but the range was between 19-75 years of age, with majority between 19-65 (personal communication, M. Changaris, June 17, 2021). The number of females attending IGMV were 28 and male 15 versus the number of females in the control/usual care were 37 and male were five. The mean number of IGMV attended was 21 while the median was 20, mode 6, min 4 and maximum 50 sessions. The table below displays the IGMV frequency statistics.

Table 1

Integrative Group Medical Visit Group Statistics

		N
	Valid	43
	Missing	0
Mean		21
Median		20
Mode		6
Minimum		4
Maximum		50

Table 2 displays the frequencies and percentages of the aforementioned sociodemographic information.

Table 2

Frequencies and Percentages for Sociodemographic Data (N = 85)

Characteristics	*N*-IGMV	*N*-Usual care	%
Race/ethnic background			
1) Latino/a	6	5	13
2) American Indian	1	0	1
3) Asian American	2	3	6
4) Black or African American	7	10	20
5) Native Hawaiian/P. Islander	1	1	2
6) White (Caucasian)	23	16	48

7) Middle Eastern (Caucasian)	1	2	3
8) Other	1	4	6
9) Declined	1	0	1
Gender			
Female	28	37	76
Male	15	5	24
Comorbidities			
PTSD	25	21	54
Chronic pain	43	42	100
Depression	22	16	38

Table 3 describes the BZD dose mean, standard deviation and sample size of both IGMV and usual care at the pre and post measurement intervals. Premean number of BZD dose for IGMV group was M = 0.27, SD = 1.070 while the control group, usual care, had BZD dose M = 0.29, SD = 1.019. Both postmean BZD dose for those who attended four or more IGMV sessions decreased to M = 0.023, SD = 0.1065 and for the control group who did not attend any IGMV sessions to M = 0.12, SD = 0.4528. Of note the majority of patients had never had BZD prescribed or were already at zero milligrams of BZD use. Previous BZD use, external prescriptions or nonprescriptions were unknown.

Table 3

Integrative Group Medical Visit and Control Benzodiazepine Dose at Time 1 and Time 2

	Type of behavioral health service	Mean	Std deviation	*N*
BZD—Premeasurement (Time 1)	IGMV	.2674	1.070	43
	Control	.2857	1.019	42
	Total	.2765	.113	85
BZD—Postmeasurement (Time 2)	IGMV	.0233	.1065	43

	Control	.1190	.4528	42
	Total	.071	.035	85

Table 4 below displays the tests of within-subjects contrasts and tests of between-subjects effects. The within-subjects test shows the amount of change that occurred at the individual level of all patients, which means that the individuals measured against themselves did demonstrate change over time in BZD dose, but was not significant (p = 0.05). The between-subjects effects test shows that the differences between the two groups BZD dose over time was not significant (p = 0.67). Therefore, the null hypothesis was retained.

Table 4

Repeated Measures Analysis of Variance Test for Benzodiazepine Dose

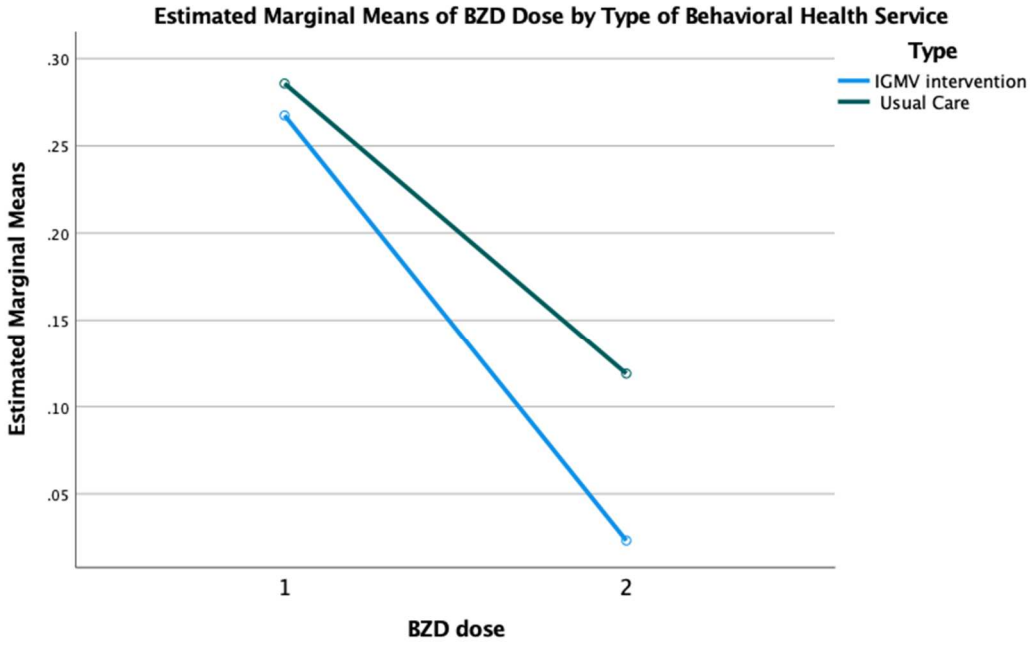
	Sum of squares	*df*	Mean square	*F*	Sig.
Within subjects BZD	1.793	1	1.793	3.890	.052
BZD*type	.064	1	.064	.138	.711
Between subjects	.138	1	.138	.187	.667

*BZD dose by either type of behavioral health service.

The figure below represents the estimated marginal means between the two points in time, which is the mean response for each group between the two measurements. Both groups' BZD dose declined sharply at Time 2, however the decline in the IGMV group was larger than control group (Figure 4) which represents a greater change in the tapering dose of the BZD, but the pattern of change was not significant (p = 0.71).

Figure 4

Estimated Marginal Means of Benzodiazepine Dose by Type of Behavioral Health Service



Both IGMV and usual care had equal access so the only known difference in their care was the exposure to the mindfulness meditation in the IGMV groups. Table 5 describes the IBH utilization mean, standard deviation and sample size of both comparison and control at the pre and post measurement intervals. The IGMV patients did access IBH more frequently, but their increase in utilization of IBH over the year was minimal. The IBH utilization in the usual care group remained the same over the year.

Table 5

Integrative Group Medical Visit and Control Integrated Behavioral Health Utilization at Time 1 and Time 2

IBH in PCMH	Type of behavioral health service	Mean	Std deviation	*N*
IBH—Year 1 (Time 1)	IGMV	3.07	7.564	43
	Control	.33	1.720	42
	Total	3.86	5.652	85
IBH—Year 2 (Time 2)	IGMV	3.86	10.980	43
	Control	.33	.816	42
	Total	2.12	7.984	85

The prescribing of BZDs at this facility has been on the decline for over a decade, but since mandated in 2017, has declined more sharply (personal communication, M. Changaris, June 17, 2021). Most patients have been transitioned over to the medications that are evidence-based and safe for longer term use, including SSRIs, SNRIs, atypicals, essentials oils, teas, and supplements and mindfulness meditation.

Quantitative Measures of Association

BZD use tracked by BZD prescription dose was limited and this may be due to the state and health care system limiting prescribers, along with decrease in opioid prescribing mandated since 2017 (personal communication, M. Changaris, June 17, 2021). BZD refill data (number of actual refills of medication) were anticipated for both ED and outpatient events, but was not available as planned. The only BZD data available were collected on the BZD dose in milligrams over the year. The dose tapering data were provided for the 9 subjects that were still taking BZDs, representing only10% of the current sample refilling BZDs over the study timeframe. The site contact reported that

refills were typically monthly with administration frequency of 1-2 times per day over the course of the year (personal communication, M. Changaris, June 17, 2021). One-time prescriptions were excluded (i.e., sedation for a procedure, or time ED BZD prescription that was never refilled).

Discussion

Interpretation

My results show that those patients with exposure to IGMV did have some reduction in BZD use, but IGMV was not superior to usual care with IBH. The results raise more questions that need to be investigated given the known estimates of BZD misuse and abuse (SAMHSA, 2019; Van Hout & Hearne, 2017).

The only practice known to statistically reduce BZD use in previous studies was yoga with an emphasis on meditation and controlled breathing and was the only intervention better than placebo (Saeed et al., 2019). The current study cannot be directly compared since it was not a yoga program. The findings also highlight that this safety-net site established the capacity to offer integrative mental health access to low-income patients and that their health system structure that reflects the conceptual framework that was proposed.

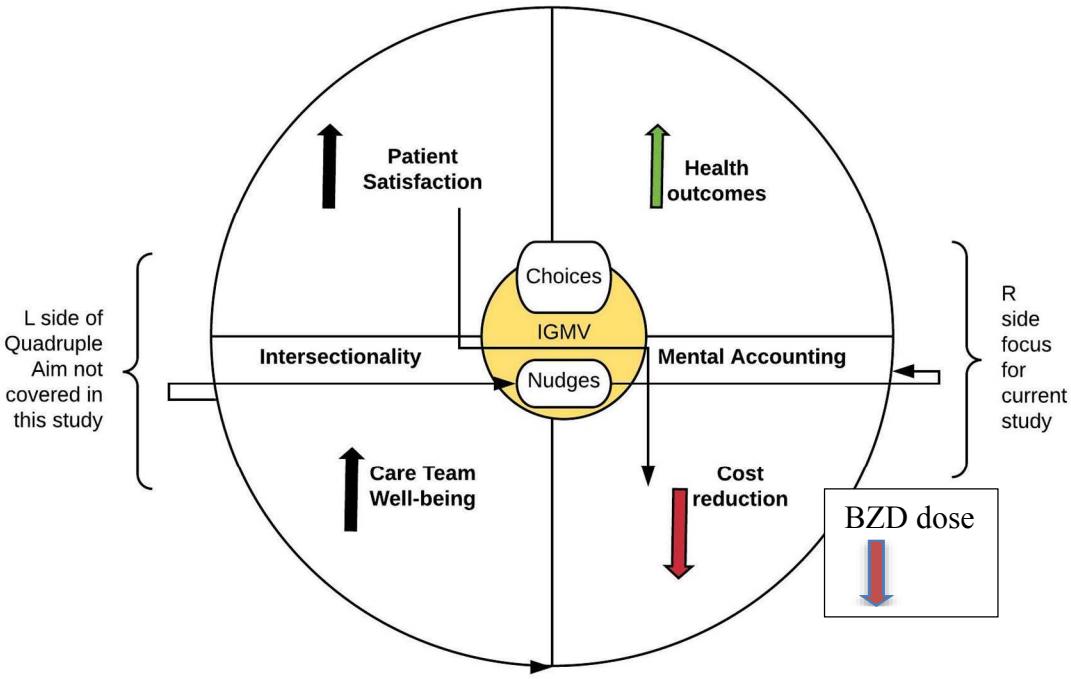
Conceptual Framework Context

The conceptual framework was partially supported by the study. The conceptual framework was created to visualize a more integrated and equitable approach to the typical structural elements of the U.S. health care systems by inserting a blended approach to care. First, is that the structure is based on the Quadruple Aim Framework

which is how health care systems in the U.S. operate. At the population health level, the right side of the diagram displays the change in BZD use. Tapering of BZD dose prevents potential morbidity and mortality from respiratory depression, dependency or overdose and associated costs.

Figure 5

Integrative Health Equity in Primary Care Framework Including Dependent Variables



At the community level, a diverse low-income population was selected to reports frequencies across race/ethnicity and gender. The reason for selecting this health center's data was that the site appeared to be offering choices in an integrative primary care center to a diverse population without gender, racial/ethnic barriers and with the option to attend groups in which mindfulness meditation was practiced at every session. Greater

differences may have been seen in a setting where IBH services were not the standard of care and Medicaid was not expanded. The usual care subjects did not attend IGMV sessions but did have access to therapists and other psychotherapy groups within the context of their PCMH.

While the U.S. government recommends IBH in primary care, sites like the one in this study reflect the proposed framework because they offer more options for access to care such as having the IGMV to reduce the wait time for appointments. Although not statistically significant, overall BZD use was less and allowed patients options for the way in which they realize their care.

Mental accounting at the individual level was not tested in this study. However, in a recent study researchers found that patients are willing to taper off BZDs if they trust their prescriber (Oldenhof et al., 2021) and group visits have been shown to increase this level of trust (Lavoie et al., 2013; Thompson-Lastad, 2018).

This is the first study to retrospectively compare two groups' BZD tapering in the context of PCMH with an intersectional institutional lens. In a systematic review of RCTs, Lynch et al (2020) did find eight studies where brief interventions targeted at assisting patients to taper off BZDs who were seen in the primary care setting were more effective than usual care.

Limitations

There were a few limitations to this study including sample size, data inclusion, and site restrictions. First, the sample size was not large enough to capture a larger subset of patients still utilizing BZDs. The data were collected at one point in time, de-identified

and sent. Therefore, it was not possible to extract more patients using BZD as this may have resulted in duplicate cases.

Second, recent studies in Europe have been assessing BZD along with hypnotics since both are utilized for anxiety and/or insomnia or both (Landolt, 2021; Rasmussen et al., 2021). Hypnotics, also known as Z-drugs, are being prescribed in multiple countries to reduce the use of BZDs (Lynch et al., 2020). Hypnotics were not tracked in this study which could be seen as a limitation and while they are also a controlled substance, they are technically a different medication class. Including hypnotics may have altered the results in either direction. The use of SSRIs, SNRIs, hypnotics, atypicals, and muscle relaxants were also not collected. Muscle relaxants and hypnotics also have the risk of respiratory depression (APA, 2013). Data on patients' use of herbs, supplements and teas were also not available and may have some similar side effects as SSRIs, SNRIs, hypnotics, atypicals, and muscle relaxants.

Compared to MBSR groups, like those in the Gardiner et al (2019) RCT, the mindfulness meditation component of this study comprised only 20 minutes of the IGMV. This was an unexpected limitation of this study. Despite this limitation, the effects of brief mindfulness were noted to be protective.

The data were not directly acquired from the site but sent electronically from on-site staff. I was dependent the on-site staff availability and capacity to collect the proposed data necessary. The site researcher was aware of the research questions, was knowledgeable about institutional IGMV programs and the data that were potentially available. However, until collecting the data with administrative restrictions, the

robustness of the data was unknown. The de-identified collection methods prohibited collecting more available data once it was noted that more cases were needed. Collecting secondary data from a clinical site versus directly from publicly available data had multiple challenges, including but not limited to clinical level approvals, site IRB approval, and reliance on staff to collect and send the data based on the study design.

Implications

Nursing Implications

Implications for the discipline of nursing would be at primary, secondary and tertiary levels of prevention. At the primary prevention level, nurses have the capacity to identify symptoms of anxiety and make nonpharmacological recommendations for anxiety management along with teaching on the risks and avoidance of use of BZDs, prescribed or not prescribed (Moreno et al., 2018; Platt et al., 2016). In secondary prevention, nurses may work with other team members to identify length of BZD use, discuss risks, including risk of respiratory depression and unintentional overdose in combination with opioids (Bouvier et al., 2018) and lack of evidence related to long-term use. Nurses may also encourage patients to discuss other pharmacological or support for nonpharmacological options with the patient's PCP (Welsh et al., 2018). Additionally, if IBH is available, nurses can ensure that patients are connected to linguistically and culturally appropriate counselors and groups to address anxiety triggers, manage symptoms, and prevent relapse. In tertiary prevention, nurses can also work with practitioners to encourage tapering and prescribing alternatives to BZDs once an SSRI or SNRI has reached effectiveness (Blackwelder & Bragg, 2016; Furbish et al., 2017; Welsh

et al., 2018) and ensure if prescribed that education has been done and that patient's repeat back their understanding of the information.

Empirical Implications

The dearth of BZD data may indicate that state legislation did curtail some of the provider-initiated prescriptions through policy and institutional norms. In this sample Latinos and Whites were the only race/ethnic groups still using BZDs and the use of BZDs in both groups was tapering down over the year, suggesting efforts of prescribers to reduce prescribing.

Despite state and system mandates to avoid prescribing BZDs, some patients were still prescribed BZDs on a routine basis at the time of this study. There may be several reasons for this. Tapering BZD use is important as abrupt discontinuation can result in withdrawal symptoms (Fluyau et al., 2018). Wait times for appointments may also be a contributing factor as same day appointments, individual or group, may be limited. While access to IGMV and IBH were available, access to other integrative modalities and nonpharmacological options could also be factors given the cost of accessing those resources in the community.

It is unknown whether these patients were consuming non-prescribed BZDs. For example, it is not known how many patients acquire BZDs through cryptomarkets or purchasing from other countries where BZDs are available over the counter. The data I obtained was a reflection of a health system change where most patients appear to have weaned off BZDs in the catchment area of this safety-net health care system.

Theoretical Implications

I created an integrative conceptual framework to examine how an alternative model was incorporated into a mainstream U.S. health system. The integrative health equity in primary care framework provided a new lens in which to view health equity from three levels, system, community and person. The system being the health care institution with quadruple aim priorities, the community being the group context with practitioners and peers at the center, and the person being the patient accessing the services.

From the system perspective, this health system had made efforts to reduce BZD prescribing through policy enforcements. Simultaneously, they expanded access at both the individual and group levels. Mixing the allopathic model with integrative approaches may have contributed to BZD tapering. At the community or group level, there was an emphasis of IBH with non-prescribing practitioners (psychologists). At the individual level, patients were provided with choice architecture and an opportunity to have visits with practitioners and peers. In this sample, few were still prescribed BZDs, but the majority were utilizing IBH and other methods to manage their anxiety.

Social Change Implications

The results of my study effect positive social change because the results provided new information on BZD prescribing and tapering for a racially/ethnically diverse safety-net population. From a health system perspective, the state where this safety-net is located had expanded Medicaid, making coverage of individual and GMV feasible within a capitated insurance model. This health system does not serve uninsured and

undocumented patients (personal communication, M. Changaris, August 2, 2020). Thompson-Lastad and Rubin (2020) revealed that states that did not expand Medicaid have more limitations as it relates to low-income adults accessing primary care and IGMV programming.

From a societal perspective, the potential economic output and lives saved need to be taken into consideration. A recent RCT in Sweden also reported on the quality adjusted life years and found that the mindfulness group was more cost effective on all measurements of their study, including but not limited to medication or visit costs (Saha et al., 2020). Chisholm et al. (2016) global systematic review reported an 80% gap in anxiety treatment and prevention in high-income countries. Chisholm et al. (2016) and Saha et al. (2020) both report on the societal perspective of costs saved from sick leave and income gained from increased productivity. Chisholm et al. (2016) report use of conservative projection models from 2016-2030 at only five percent increase in work productivity and estimated that an average cost of $2 per person investment on anxiety prevention and treatment annually would result in a return on health value benefit at $50 billion.

Recommendations

Future Research

The use and misuse of BZDs continues to be a public health issue (SAMHSA, 2019). The magnitude of trafficking of BZDs from other countries is still unknown. Online anonymous surveys could also potentially reveal more information about acquisition of BZDs from the cryptomarket.

Many U.S. health care systems are adopting a capitated system like the health system in this study. As alternative practices are incorporated into these health systems, research is needed to investigate the efficacy of these mixed models of care.

Conclusion

The benefits of IBH in primary care at the PCMH had statistically nonsignificant reduction in BZD use at this health system over one year. IGMV with mindfulness meditation was not superior to standard IBH. Reviewing trends from 2008-2018, anxiety is on the rise for all race/ethnic groups, highest in women and low-income adults between ages 18-25 (Goodwin, 2020) with an increase in BZD use (Sarangi, 2021). Supporting low-income diverse populations to taper off BZDs to other pharmacological and nonpharmacological interventions is warranted and may save lives. The results of this study prompt prospective research with stricter study designs and larger sample sizes.

References

Alford, D. P., German, J. S., Samet, J. H., Cheng, D. M., Lloyd-Travaglini, C. A., & Saitz, R. (2016). Primary care patients with drug use report chronic pain and self -medicate with alcohol and other drugs. *Journal of General Internal Medicine*, *31*(5), 486-491. https://doi.org/10.1007/s11606-016-3586-5

Alonso, J., Liu, Z., Evans-Lacko, S., Sadikova, E., Sampson, N., Chatterji, S., Abdulmalik, J., Aguilar-Gaxiola, S., Al-Hamzawi, A., Andrade, L.H., & Bruffaerts, R. (2018). Treatment gap for anxiety disorders is global: Results of the world mental health surveys in 21 countries. *Depression and Anxiety*, *35*(3),195 208.

American Psychiatric Association, A. P., & American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (Vol. 10). Washington, DC: American Psychiatric Association.

Balasubramanian, B. A., Cohen, D. J., Jetelina, K. K., Dickinson, L. M., Davis, M., Gunn, R., Gowen, K., deGruy, F. K., Miller, B. F., & Green, L. A. (2017). Outcomes of integrated behavioral health with primary care. *The Journal of the American Board of Family Medicine, 30*(2), 130-139. https://doi.org/10.3122/jabfm.2017.02.160234

Bandelow, B., Michaelis, S., & Wedekind, D. (2017). Treatment of anxiety disorders. *Dialogues in Clinical Neuroscience*, *19*(2), 93.

Barberis, N. (2018). Richard Thaler and the rise of behavioral economics. *The Scandinavian Journal of Economics*, *120*(3), 661-684. https://doi.org/10.1111/sjoe.12313

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: Care, health, and cost. *Health Affairs*, *27*(3), 759-769.

Blackwelder, R., & Bragg, S. (2016). Anxiety disorders: A blended treatment approach. *The International Journal of Psychiatry in Medicine*, *51*(2), 137-144. https://doi.org/10.1177%2F0091217416636575

Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: Care of the patient requires care of the provider. *The Annals of Family Medicine*, *12*(6), 573-576. https://doi.org/10.1370/afm.1713

Bouvier, B. A., Waye, K. M., Elston, B., Hadland, S. E., Green, T. C., & Marshall, B. D. (2018). Prevalence and correlates of benzodiazepine use and misuse among young adults who use prescription opioids non-medically. *Drug and Alcohol Dependence,183*, 73-77. https://doi.org/10.1016/j.drugalcdep.2017.10.023

Bukar, N. K., Eberhardt, L. M., & Davidson, J. (2019). East meets west in psychiatry: Yoga as an adjunct therapy for management of anxiety. *Archives of Psychiatric Nursing*, *33*(4), 371-376. https://doi.org/10.1016/j.apnu.2019.04.007

Chao, M. T., Hurstak, E., Leonoudakis-Watts, K., Sidders, F., Pace, J., Hammer, H., & Wismer, B. (2019). Patient-reported outcomes of an integrative pain management program implemented in a primary care safety net clinic: A quasi experimental study. *Journal of General Internal Medicine*, *34*(7), 1105-1107.

https://doi.org/10.1007/s11606-019-04868-0

Clarke, T. C., Black, L. I., Stussman, B. J., Barnes, P. M., & Nahin, R. L. (2015). Trends in the use of complementary health approaches among adults: United States, 2002-2012. *National Health Statistics Reports*, (79), 1. https://www-ncbi-nlmnih-gov.ezp.waldenulibrary.org/pmc/articles/PMC4573565/

Cornelio-Flores, O., Lestoquoy, A. S., Abdallah, S., DeLoureiro, A., Lorente, K., Pardo, B., Olunwa, J., & Gardiner, P. (2018). The Latino integrative medical group visit as a model for pain reduction in underserved Spanish speakers. *The Journal of Alternative and Complementary Medicine*, *24*(2), 125-131. https://doi.org/10.1089/acm.2017.0132

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of anti-discrimination doctrine, feminist theory and antiracist politics. *The University of Chicago Legal Forum 139*, 139–167. https://philpapers.org/archive/CREDTI.pdf?ncid=txtlnkusaolp00000603

Dresner, D., Gergen Barnett, K., Resnick, K., Laird, L. D., & Gardiner, P. (2016). Listening to their words: A qualitative analysis of integrative medicine group visits in an urban underserved medical setting. *Pain Medicine, 17*(6), 1183-1191. https://doi.org/10.1093/pm/pnw030

Driot, D., Bismuth, M., Maurel, A., Soulie-Albouy, J., Birebent, J., Oustric, S., & Dupouy, J. (2017). Management of first depression or generalized anxiety disorder episode in adults in primary care: A systematic metareview. *La Presse Médicale*, *46*(12), 1124-1138. https://doi.org/10.1016/j.lpm.2017.10.010

Driot, D., Ouhayoun, S., Perinelli, F., Grézy-Chabardès, C., Birebent, J., Bismuth, M., & Dupouy, J. (2019). Non-drug and drug alternatives to benzodiazepines for insomnia in primary care: Study among GPs and pharmacies in a southwest region of France. *Therapies*, *74*(5), 537-546. https://www.elsevier.com/openaccess/userlicense/1.0/

Elbel, B., Gillespie, C., & Raven, M. C. (2014). Presenting quality data to vulnerable groups: Charts, summaries or behavioral economic nudges? *Journal of Health Services Research & Policy*, *19*(3), 161-168. https://doi.org/10.1177%2F1355819614524186

Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses, *Behavior Research Methods, 41* (4), 1149-1160. https://doi.org/10.3758/BRM.41.4.1149

Fluyau, D., Revadigar, N., & Manobianco, B. E. (2018). Challenges of the pharmacological management of benzodiazepine withdrawal, dependence, and discontinuation. *Therapeutic advances in psychopharmacology*, *8*(5), 147-168. https://doi.org/10.1037/a0040358

Furbish, S. M., Kroehl, M. E., Loeb, D. F., Lam, H. M., Lewis, C. L., Nelson, J., Chow, Z., & Trinkley, K. E. (2017). A pharmacist–physician collaboration to optimize benzodiazepine use for anxiety and sleep symptom control in primary care. *Journal of Pharmacy Practice*, *30*(4), 425-433. https://doi.org/10.1177%2F0897190016660435

Gardiner, P., Luo, M., D'Amico, S., Gergen-Barnett, K., White, L. F., Saper, R., Mitchell, S. & Liebschutz, J. M. (2019). Effectiveness of integrative medicine group visits in chronic pain and depressive symptoms: A randomized controlled trial. *PloS One*, *14*(12). https://1d0o.i.1o1rg7/71/01.10147977/13024391738273519857259852 8

Gardiner, P., Lestoquoy, A. S., Gergen-Barnett, K., Penti, B., White, L. F., Saper, R., Fredman, L., Stillman, S., Negash, N.L., Adelstein, P., & Brackup, I. (2017). Design of the integrative medical group visits randomized control trial for underserved patients with chronic pain and depression. *Contemporary Clinical Trials, 54,* 25-35. https://doi.org/10.1371/journal.pone.0225540

Gareau, S., Lòpez-De Fede, A., Loudermilk, B. L., Cummings, T. H., Hardin, J. W., Picklesimer, A. H., Crouch, E., & Covington-Kolb, S. (2016). Group prenatal care results in Medicaid savings with better outcomes: A propensity score analysis of centering pregnancy participation in South Carolina. *Maternal and Child Health Journal, 20*(7), 1384-1393. https://link-springer.com.ezp.waldenulibrary.org/article/10.1007/s10995-016-1935-y

Geller, J. S. (2019). Group Medical Visits: Introducing the "group inclusion effect" and key principles for maximization. *The Journal of Alternative and Complementary Medicine*, *25*(7), 673-674. https://doi.org/10.1089/acm.2019.0012

Geller, J. S., Kulla, J., & Shoemaker, A. (2015). Group medical visits using an empowerment-based model as treatment for women with chronic pain in an

underserved community. *Global Advances in Health and Medicine, 4(*6), 27-31. https://doi.org/10.7453/gahmj.2015.057

Geller, J. S., Orkaby, A., & Cleghorn, G. D. (2011). Impact of a group medical visit program on Latino health-related quality of life. *EXPLORE: The Journal of Science and Healing*, *7*(2), 94-99. https://doi.org/10.1016/j.explore.2010.12.005

Gkiouleka, A., Huijts, T., Beckfield, J., & Bambra, C. (2018). Understanding the micro and macro politics of health: Inequalities, intersectionality & institutions—A research agenda. *Social Science & Medicine*, *200*, 92-98. https://doi.org/10.7453/gahmj.2015.057

Housden, L., Browne, A. J., Wong, S. T., & Dawes, M. (2017). Attending to power differentials: How NP-led group medical visits can influence the management of chronic conditions. *Health Expectations*, *20*(5), 862-870. https://doi.org/10.1111/hex.12525

Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8(*2), 163-190.

Kakareka, R., Stone, T. A., Plsek, P., Imamura, A., & Hwang, E. (2019). Fresh and savory: Integrating teaching kitchens with shared medical appointments. *The Journal of Alternative and Complementary Medicine*, *25*(7), 709-718. https://doi.org/10.1089/acm.2019.0091

Kessler, R., Miller, B. F., Kelly, M., Graham, D., Kennedy, A., Littenberg, B., MacLean, C. D.,Van Eeghen, C., Scholle, S. H., Tirodkar, M. & Morton, S. (2014). Mental

health, substance abuse, and health behavior services in patient-centered medical homes. *The Journal of the American Board of Family Medicine*, *27*(5), 637-644. https://doi.org/10.3122/jabfm.2014.05.140021

Landolt, S., Rosemann, T., Blozik, E., Brüngger, B., & Huber, C. A. (2021). Benzodiazepine and Z-drug use in Switzerland: Prevalence, prescription patterns and association with adverse healthcare outcomes. *Neuropsychiatric Disease and Treatment, 17,* 1021. https://doi.org/10.2147/NDT.S290104

Lavoie, J. G., Wong, S. T., Chongo, M., Browne, A. J., MacLeod, M. L., & Ulrich, C. (2013). Group medical visits can deliver on patient-centered care objectives: Results from a qualitative study. *BMC Health Service Research, 13*(1), 155. https://doi.org/10.1186/1472-696313-155.pdf

Lestoquoy, A. S., Laird, L. D., Mitchell, S., Gergen-Barnett, K., Negash, N. L., McCue, K., Enad, R., & Gardiner, P. (2017). Living with chronic pain: Evaluating patient experiences with a medical group visit focused on mindfulness and non-pharmacological strategies. *Complementary Therapies in Medicine*, *35*, 33-38. https://doi.org/10.1016/j.ctim.2017.09.002

Linman, S., Benjenk, I., & Chen, J. (2019). The medical home functions of primary care practices that care for adults with psychological distress: A cross-sectional study. *BMC Health Services Research*, *19*(1), 21. https://doi.org/10.1186/s12913018-3845-8

Lynch, T., Ryan, C., Hughes, C. M., Presseau, J., van Allen, Z. M., Bradley, C. P., & Cadogan, C. A. (2020). Brief interventions targeting long□term benzodiazepine

and Z□drug use in primary care: A systematic review and meta□analysis. *Addiction*, 115(9), 1618-1639. https://doi.org/10.1111/add.14981

Mehl-Madrona, L., Mainguy, B., & Plummer, J. (2016). Integration of complementary and alternative medicine therapies into primary-care pain management for opiate reduction in a rural setting. *The Journal of Alternative and Complementary Medicine, 22*(8), 621-626. https://doi.org/10.1089/acm.2015.0212

Moreno, C. A. S, Castillo, M. M. A, Torres, R. A. B, & Ocañas, L. G. (2018). Consumption of medical drugs, over-the-counter medications and alcohol in elderly/consumption of medical drugs, over-the-counter medications and alcohol. *Journal Health NPEPS*, *3*(2), 583-600. https://periodicos.unemat.br/index.php/jhnpeps/article/view/2967

NIH (2017). National Institute of Mental Health. *Mental illness health statistics.* https://www.nimh.nih.gov/health/statistics/mental-illness.shtml

Noffsinger, E. B. (2012). *The ABCs of Group Visits: An implementation manual for your practice.* Springer Science and Business Media.

Oldenhof, E., Mason, T., Anderson-Wurf, J., & Staiger, P. K. (2021). Role of the prescriber in supporting patients to discontinue benzodiazepines: A qualitative study. *British Journal of General Practice, 71*(708), e517-e527. https://doi.org/10.3399/BJGP.2020.1062

Ornish D., Brown S. E., Scherwitz L. W., Billings J. H., Armstrong W. T., Ports, T. A., McLanahan, S. M., Kirkeeide, R. L., Gould, K. L. & Brand, R. J. (1990). Can lifestyle changes reverse coronary heart disease? The lifestyle heart trial. *Lancet*,

336, 129–133. https://www.chrisjbradshaw.com/wpcontent/uploads/2016/01/Can-lifestyle-changes-reverse-coronary-heart-diseaseOrnish-Lancet-1990.pdf

Orzechowski, N. M., Lloyd, D., Tuthill, K., Puttgen, J., & Bergeron, R. (2016). Use of a shared medical appointment for patients with fibromyalgia in a rural, academic medical center: A process improvement initiative for the development of a new care model. *Arthritis and Rheumatology* (68).

Parikh, M., Rajendran, I., D'Amico, S., Luo, M., & Gardiner, P. (2019). Characteristics and components of medical group visits for chronic health conditions: A systematic scoping review. *The Journal of Alternative and Complementary Medicine*, *25*(7), 683-698. https://doi.org/10.1089/acm.2018.0524

Platt, L. M., Whitburn, A. I., Platt-Koch, A. G., & Koch, R. L. (2016). Nonpharmacological alternatives to benzodiazepine drugs for the treatment of anxiety in outpatient populations: A literature review. *Journal of Psychosocial Nursing and Mental Health Services, 54*(8), 35-42. https://doi.org/10.3928/0279369520160725-07

Pruitt, R., Lemanski, A., & Carroll, A. (2018). Herbal supplements: Research findings and safety. *The Nurse Practitioner*, *43*(5), 32-37. https://doi.org/10.1097/01.NPR.0000531919.99762.85

[Quadruple Aim]. Retrieved March 31, 2020 from https://www.google.com/search?q=quadruple+aim+free+stock&tbm=isch&sour=univ&sa=X&ved=2ahUKEwiw2JTyjcboAhVsc98KHa7NCt4Q7Al6BAgGEB&biw=1164&bih=631#imgrc=HffB1pFIvfPxmM

Rasmussen, A. F., Poulsen, S. S., Oldenburg, L. I. K., & Vermehren, C. (2021). The Barriers and facilitators of different stakeholders when deprescribing benzodiazepine receptor agonists in older patients—A systematic review. *Metabolites, 11*(4), 254. https://doi.org/10.3390/metabo11040254

Reed, S. C., Partridge, A. H., & Nekhlyudov, L. (2015). Shared medical appointments in cancer survivorship care: A review of the literature. *Journal of Oncology Practice,11*(1), 6-11. https://ascopubs.org/doi/pdfdirect/10.1200/jop.2014.001411

Rowley, R. A., Phillips, L. E., O'Dell, L., El Husseini, R., Carpino, S., & Hartman, S. (2016). Group prenatal care: A financial perspective. *Maternal and Child Health Journal, 20*(1), 1-10. https://doi.org/10.1007/s10995-015-1802-2

Saeed, S. A., Cunningham, K., & Bloch, R. M. (2019). Depression and anxiety disorders: Benefits of exercise, yoga, and meditation. *American Family Physician*, *99*(10), 620-627. https://www.aafp.org/afp/2019/0515/afp20190515p620.pdf

Saha, S., Jarl, J., Gerdtham, U. G., Sundquist, K., & Sundquist, J. (2020). Economic evaluation of mindfulness group therapy for patients with depression, anxiety, stress and adjustment disorders compared with treatment as usual. *British Journal of Psychiatry, 216*(4), 197–203. https://doi.org/10.1192/bjp.2018.247

SAMHSA (2019). Key substance use and mental health indicators in the United States: Results from the 2018 National Survey on Drug Use and Health (HHS Publication No. PEP19-5068, NSDUH Series H-54): Center for Behavioral Health Statistics and Quality. *Substance Abuse and Mental Health Services Administration*.

Sampio, C. V. S., Lima, M. G., & Ladeia, A. M. (2016). Efficacy of Healing meditation in reducing anxiety of individuals at the phase of weight loss maintenance: A randomized blinded clinical trial. *Complementary Therapies in Medicine*, *29*, 1-8. https://doi.org/10.1016/j.ctim.2016.08.005

Sarangi, A., McMahon, T., & Gude, J. (2021). Benzodiazepine misuse: An epidemic within a pandemic. *Cureus, 13*(6). https://doi.org/10.1016/

Schmider, E., Ziegler, M., Danay, E., Beyer, L., & Bühner, M. (2010). Is it really robust? Reinvestigating the robustness of ANOVA against violations of the normal distribution assumption. *Methodology, 6*(4), 147–151. https://doi.org/10.1027/1614-2241/a000016

Shaw, S., Dresner, D., Gardiner, P., Barnett, K. G., & Saper, R. (2014). Integrative medicine group visits and emergency department utilization. *The Journal of Alternative and Complementary Medicine, 20*(5), A67-A68. https://doi.org/10.1089/acm.2014.5176.abstract

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092-1097. https://doi.org/10.1001/archinte.166.10.1092

Strickland, C., Merrell, S., & Kirk, J. K. (2016). Centering pregnancy meeting the quadruple aim in prenatal care. *North Carolina Medical Journal, 77*(6), 394 397. https://www.ncmedicaljournal.com/content/ncm/77/6/394.full.pdf

Stussman, B. J., Nahin, R. R., Barnes, P. M., & Ward, B. W. (2019). U.S. physician recommendations to their patients about the use of complementary health

approaches. *The Journal of Alternative and Complementary Medicine*, *26*(1), 25 33. https://doi.org/10.1089/acm.2019.0303

Thaler, R. H. (2016). Behavioral economics: Past, present, and future. *American Economic Review*, *106*(7), 1577-1600. https://doi.org/10.1257/aer.106.7.1577

Thompson-Lastad, A. (2018). Group medical visits as participatory care in community health centers. *Qualitative Health Research*, *28*(7), 1065-1076. https://doi.org/10.1177%2F1049732318759528

Van Hout, M. C., & Hearne, E. (2017). New psychoactive substances (NPS) on cryptomarket fora: An exploratory study of characteristics of forum activity between NPS buyers and vendors. *International Journal of Drug Policy*, *40*, 102 -110. https://doi.org/10.1016/j.drugpo.2016.11.007

Vaughan, E. M., Johnston, C. A., Arlinghaus, K. R., Hyman, D. J., & Foreyt, J. P. (2019). A narrative review of diabetes group visits in low-income and underserved settings. *Current Diabetes Reviews, 15*(5), 372-381.

Vicens, C., Socias, I., Mateu, C., Leiva, A., Bejarano, F., Sempere, E., Basora, J., Palop, V. Mengual, M., Beltran, J. L., & Aragonès, E. (2011). Comparative efficacy of two primary care interventions to assist withdrawal from long term benzodiazepine use: A protocol for a clustered, randomized clinical trial. *BMC Family Practice*, *12*(1), 1-7. https://bmcfampract.biomedcentral.com/track/pdf/10.1186/1471-2296-12-23.pdf

Wadsworth, K. H., Archibald, T. G., Payne, A. E., Cleary, A. K., Haney, B. L., & Hoverman, A. S. (2019). Shared medical appointments and patient-centered

experience: A mixed-methods systematic review. *BMC Family Practice*, *20*(1), 97. https://doi.org/10.1186/s12875-019-0972-1

Webster, R., Thompson, A. R., Norman, P., & Goodacre, S. (2017). The acceptability and feasibility of an anxiety reduction intervention for emergency department patients with non-cardiac chest pain. *Psychology, Health & Medicine*, *22*(1), 1-11. https://www.tandfonline.com/action/showCitFormats?doi=10.1080/13548506.206.1144891

Welsh, J. W., Tretyak, V., McHugh, R. K., Weiss, R. D., & Bogunovic, O. (2018). Adjunctive pharmacologic approaches for benzodiazepine tapers. *Drug and Alcohol Dependence*, *189*, 96-107. https://doi.org/10.1016/j.drugalcdep.2018.04.028

Zeiss, A. M., & Karlin, B. E. (2008). Integrating mental health and primary care services in the department of veterans affairs health care system. *Journal of Clinical Psychology in Medical Settings*, *15*(1), 73-78. https://doi.org/10.1007/s10880-0089100-4

Manuscript 3

Effect of Participation in Integrative Group Medical Visits on Anxiety Symptom Severity

Annamma Udaya Thomas

Walden University

SAMHSA ANA MFP Fellow

Outlet for Manuscript

The Journal of Holistic Nursing: This journal aligns with the content in the manuscript as it has other published articles on within the past five years on mental health, mindfulness meditation, within prenatal and veteran populations, covering various different chronic diseases such as HIV, cancer, chronic kidney disease, PTSD, chronic pain and depression. The last article in this research journal on the impact of mindfulness meditation on anxiety was published in 2015 with a recommendation for more articles including advanced practice nurses utilizing mindfulness meditation in the context of individual and group medical appointments. The editors may be interested in this manuscript given the rise of global burden of anxiety disorders and the need for research on group visit interventions that have the potential to increase the participation of nurses at the primary care level to address mental health in a holistic way. By definition, PCMH have to have nurses on the team to both coordinate and provide both pharmacologic and non-pharmacologic approaches.

Abstract

Purpose: To compare the integrative medicine group visit (IGMV) patients' anxiety symptom severity to usual care patients.

Design: Retrospective quantitative comparative analysis with a purposeful sample of 85 low-income adult patients with an anxiety disorder (43 IGMV, 42 usual care) from a primary care health center.

Methods: A purposeful sample of 85 patients with an anxiety disorder (43 IGMV, 42 usual care) were reviewed from existing 2017-2018 clinical data. Anxiety levels were extracted from pre and post annual wellness surveys. The data were analyzed using repeated-measures ANOVA.

Findings: Anxiety symptom severity decreased in the IGMV group and increased in usual care. The difference within groups and between groups was not significant (p = 0.50, p = 0.89). Seventy-seven subjects completed both pre and post survey measurements prompting a post hoc analysis. The post hoc analysis revealed a power of .96 within factors and a power of .77 for between factors confirming that a Type II error was averted.

Conclusion: This study provided a framework for contextualizing how patients with anxiety could have access to nonpharmacological behavioral health care at the primary care level. Future research could focus on prospective research with rigorous study designs and larger sample size.

Introduction

One in every five Americans has been diagnosed with a mood disorder (NIH, 2017). Anxiety disorders, often comorbid with mood disorders have the highest global burden of disease, currently at about 7% both nationally and globally with a 3-month prevalence of up to 10% and one-third of Americans experiencing an anxiety disorder in their lifetime (Alonso et al., 2018; Chisholm et al., 2016; NIH, 2017). The prevalence has surpassed depression disorders with women having twice the rate of men (NIH, 2017).

The DSM-5 classification of anxiety disorders includes primarily in childhood separation anxiety disorder, selective mutism, and specific phobias whereas in adulthood includes higher percentages of panic disorder, agoraphobia, social anxiety disorder (SAD), general anxiety disorder (GAD-which makes up more than half of anxiety cases), substance/medication-induced anxiety disorder, and anxiety disorder due to a medical concern (APA, 2013; Alonso et al., 2018; Bandelow et al., 2017).

In practice, PCPs commonly use GAD-7 and additional questions to diagnose anxiety. If the diagnosis is unclear, the diagnoses unspecified anxiety disorder is often utilized. In research, common instruments for measuring anxiety of participants include the Hamilton Anxiety Scale and GAD-7 (Sampaio et al., 2016; Spitzer et al., 2006; Webster et al., 2017). This paper (part of a larger study) focuses on an integrative health approach, initiated by primary care providers (PCP), for reducing symptoms in low-income patients with currently diagnosed anxiety disorders.

Anxiety often presents in somatic forms, such as palpitations, shortness of breath, headaches, chest pain, digestive complaints, and sweating but often does not get

diagnosed as anxiety (Gates et al., 2016). Investigating somatic complaints often delays recognition and hence appropriate mental health care for anxiety disorders. Hill et al (2019) found, in a population of Latino day workers, that greater severity of anxiety symptoms was associated with being single, housing insecurity, acculturation stress, discrimination and marijuana use. Patients' awareness of their own somatic symptoms, like shortness of breath or pain, results in a self-referral for their symptoms and often result in overutilization of the emergency services (Dark et al 2017) where benzodiazepines (BZDs) are commonly prescribed.

The current standard of care for anxiety disorders is a combination of the use of BZDs, SSRIs or SNRI and CBT or other psychotherapy (Blackwelder & Bragg, 2016; Driot et al., 2017). Benzodiazepines were theoretically and practically prescribed as a rescue medication and bridge until other non-controlled substance anxiolytics reached therapeutic levels (Blackwelder & Bragg, 2016). However, due to their rapid alleviation of symptoms, practitioners and patients have come to appreciate their effects, albeit short lived due to their short half-life. Repeated use often develops into dependency and places individuals at risk for addiction to BZDs (Furbish et al., 2017).

In many cases, patients prefer their PCP manage their mental health care (Buche et al, 2017). The integration of primary care and behavioral health (via a team-based care model) as integrated behavioral health (IBH) has been established as a strategy for social change and improving health outcomes and reducing high-cost utilization (Buche et al, 2017). Once care is established, group medical visits (GMV) with a PCP are spaces,

whether virtual or in person, that have been created in some health systems to allow patients increased access to their patient-centered medical home (PCMH).

The Agency for Health Research Quality (AHRQ) has recommended GMV to address patient access to care, increase patient and practitioner satisfaction in care delivered, and decrease high-cost health care utilization including ED and specialty visits (AHRQ, 2018; Gardiner et al., 2019; Shaw et al., 2014). GMV are shared medical appointments with a group of patients being seen simultaneously with their PCP and/or collaboratively with a psychologist or other team member, lasting from 1-2 hours with an average of 5-16 patients with some common diagnoses and/or common interest in receiving an intervention (AHRQ, 2018). Ornish et al (1990) and Noffsinger (2012) laid the groundwork for building practice models that assist the individual provider to manage their panel with monthly chronic care group visits that group patients by diagnosis or utilization behavior.

There are various GMV types, which include drop-in groups, disease-based group visits, and intervention-based groups (AHRQ, 2018) all of which are done either in person or virtually. GMV combine biomedical care and consultation with health education and peer support. For example, chronic pain groups may focus on acceptance of pain or mindfulness techniques to cope with pain and participate in activities to uncover their source of pain (i.e., contributors of pain via nutrition, work or home life activities) and share experiences and community resources (Gardiner et al., 2014).

Significant positive health outcomes that have been documented in systematic reviews include increased patient satisfaction, increased patient knowledge, reduction in

symptom severity, weight reduction and increased healthy eating habits (Parikh, et al, 2019). There is evidence that GMV participants (diabetes and elders) have lower ED utilization and hospitalizations while active in groups (Edelman et al., 2012; Gardiner et al., 2019; Shaw et al., 2014). Cornelio-Flores (2018) reported a drop in anxiety for Spanish-speaking low-income patients with chronic pain utilizing a Spanish adaptation of Gardiner's intervention with mindfulness-based stress reduction (MBSR). The change was not statistically significant, but it is unclear if all had an anxiety diagnosis and there were only 19 participants in this pilot.

Significance/Importance

In the past 20 years, practitioners serving low-income patients have offered GMV in the context of a primary care that is deemed a PCMH. PCMHs include private and government community clinics, national health service (NHS) and federally qualified health centers ([FQHCs]Wadsworth et al., 2019). PCMH certification requires that there is a health care team, including nurses, for each patient. The team addresses different aspects of their health and coordinate the patient's care to ensure that there are no gaps in their care (Linman et al., 2019).

With the utilization of GMV in PCMH, researchers noted that efficiency of care increases as care team members work together with multiple patients at a time, creating access and peer support simultaneously (Parikh et al., 2019). Due to the lack of professionals in the community PCPs are unable to refer out to psychologists (Driot et al., 2019) when patients prefer talk therapy or a group approach versus medication. A survey of PCMH found that less than half of the patients have on-site access to a behaviorist,

social worker, or psychologist on the care team (Kessler et al., 2014). Zeiss and Karlin (2008) found that patients preferred IBH at the location they received their primary care (colocated care). Access to GMV has increased IBH in primary care and allowed patients the convenience of having their primary and mental health care in one location (colocation).

While not colocated care, two psychiatrists in Canada decided to increase access to their practice with GMV. They decided to conduct their follow up appointments only as GMV (Remick & Remick, 2014). They interviewed patients to see if they had a preference and statistically there was no difference. However, the authors did note that the sample was their own patients and that the patients did express reduced stigma while getting support from other patients while in the group (Remick & Remick, 2014).

Integrative Group Medical Visits (IGMV) builds on the growing use of GMV for chronic care. IGMVs have been implemented in response to interest in complementary and integrative health (CIH), which remains inaccessible to many people due to limited insurance coverage and high out-of-pocket cost. IGMVs may contribute to improving patient experience, improving population health, reducing costs, and increasing practitioner satisfaction (Cornelio-Flores et al., 2018; Dresner et al., 2016; Gardiner et al., 2017, Gardiner et al., 2019; Gareau et al., 2016; Geller et al., 2015; Kakareka et al., 2019; Mehl-Madrona et al., 2016; Rowley et al., 2016; Shaw et al., 2014; Strickland et al., 2016).

The relevant literature for the field of IBH in primary care draws from various disciplines, which highlights the interdisciplinary nature of this inquiry. Some of the key

literature for this inquiry, from the pioneers of infusing integrative health into GMV, was published between 2011-2014 while the majority of the literature synthesized was primarily within the last 5 years. Hence, I have included some key literature from previous years to explain the progression of this research. The fields of nursing, health psychology, primary care, CIH, behavioral medicine, behavioral economics, health care utilization, and public health were explored for relevant scholarship on the IBH in primary care by way of GMV to address anxiety disorders and improve health outcomes in predominantly low-income adults.

The main focus of IGMV research has been on depression and chronic pain, inclusive of emphasis on opioid use (Parikh et al., 2019). Reducing opioid consumption, considering the opioid crisis, has been shown to be associated with IGMV in a recent randomized controlled trial (Gardiner et al., 2019). Aside from psychiatric medication use, other aspects of mental and emotional health have been documented in IGMV research with statistically significant improvements in mental health quality of life measured by the SF-36 with reductions in depression and loneliness (Gardiner, et al., 2019; Geller et al., 2011) and a decrease in pain medication usage (Gardiner, et al., 2019). While anxiety disorders have been listed as comorbidities (Gardiner et al., 2019) there has not been a focus on people with anxiety disorders. Hence there has been a gap in knowledge whether participation in IGMV affect anxiety symptom severity in low-income patients in primary care/PCMH.

Components of yoga practice, like mindfulness meditation and meditative movements, are often included in IGMVs and IGMV research (Chao et al., 2015; Chao et

al., 2019; Gardiner et al., 2019; Saper et al., 2017; Thompson-Lastad et al., 2019). The ancient practice of yoga began approximately 5,000 years ago in India with meditation and breath work or pranayama (Wimberly et al., 2018), but over time the postures (asanas) were added. Meditative breath work has been observed to increase parasympathetic activity while reducing sympathetic activity (Kuppusamy et al., 2020). Modern yoga is the union of breath work with an intentional sequence of meditative movements.

IGMVs have taken on favorable roles in creating more access to CIH in the mainstream primary care setting. Several studies have demonstrated a reduction in anxiety with the utilization of yoga (Adams et al., 2015; Bukar et al., 2019; Kuppusamy et al., 2020). Bukar et al (2019) also found similar results in an inpatient psychiatric setting with significant reductions in anxiety lasting up to one day, which resulted in hiring of a yoga instructor as a staff member.

The progression of both qualitative and quantitative research has illuminated a need for describing the phenomenon of groups in primary care, the inclusion effect (Geller, 2019), or the access to CIH with the guidance of their PCP, or the interdisciplinary nature that motivates patients to behavior change. For example, in a sentinel qualitative study conducted in Canada, Lavoie et al. (2013) reported both practitioners and patients expressed the benefits of having GMV in a PCMH. Themes extracted from the interviews were increased self-management, improved information sharing, an increased trust of providers, less isolation, and peer support.

Research has already been strongly in favor of the increase in patient satisfaction with the use of IGMV, exposing patients to other community members, increasing coping and empowerment, reducing loneliness, and having an opportunity to share experiences and community resources with each other (Dresner et al., 2016, Geller et al., 2011, 2015; Housden, et al., 2017; Lestoquoy et al., 2017; Thompson-Lastad, 2018). Housden et al. (2017) found that nurse practitioner (NP) led GMVs encouraged interprofessional practice and served to deconstruct some of the traditional primary care hierarchies between practitioners and between practitioners and patients. Orzechowski (2016) also found that there were decreased wait times for appointments from three months to one month in a feasibility study examining mindfulness groups for patients with fibromyalgia.

Conceptual Framework

The theoretical basis for understanding the phenomena occurring with low-income racially/ethnically diverse patients in the context of the current health system would be a combination of the Quadruple Aim Framework (QAF) with intersectionality theory and the theory of mental accounting. This combination in thought has not been utilized in previous research. The new framework is called integrative health equity in primary care framework.

The QAF is an expansion of the Triple Aim developed by leaders at the Institute of Healthcare Improvement. The Quadruple Aim includes an improved patient experience, improved health outcomes or population health, reduced costs (Berwick, et al., 2008), and then adds higher practitioner satisfaction or care team wellbeing. The final aim was first described by William Spinelli (2013) as the “phantom limb” and later

formalized as an important consideration in reducing burnout of practitioners (Bodenheimer & Sinsky, 2013).

The aims of focus in this study were categorized under the right side of Figure 1, improved health outcomes and reducing costs, but should still be seen in the context of the four aims of the Quadruple Aim Framework (QAF), as patient experience and care team well-being also affect the other aims indirectly or directly. In addition, the use of CIH modalities in the context of this framework influences the whole in delivering whole person integrated care.

Figure 1

Quadruple Aim Framework

Note. Quadruple Aim (n.d.).

Crenshaw coined the concept of intersectionality to view the intersection of race and gender as it relates to the marginalization of black women (Crenshaw, 1989). The intersectionality theory has been adopted in the health professions to explain the complex

way in which the social determinants of health like economic stability, education level, environment, access to food and health care, and social networks or lack thereof, interact with different aspects of a person's identity to shape the discriminatory experiences that some marginalized groups may face within health systems (Gkiouleka et al., 2018). Intersectionality theory provided a lens in which to look at the QAF keeping in mind that safety-net hospital patients have different outcomes—for this study, specifically those who are underserved and have an anxiety diagnosis.

Another area which enlightened this conceptual framework, is that of behavioral economics. Elbel et al. (2014) concluded that low-income patients are particularly understudied when it comes to their health care choices and that vulnerable populations would benefit from assistance in making better health care choices. They draw on Thaler's (2016) notion of *nudges* to suggest that nudges are key in assisting patients make better choices.

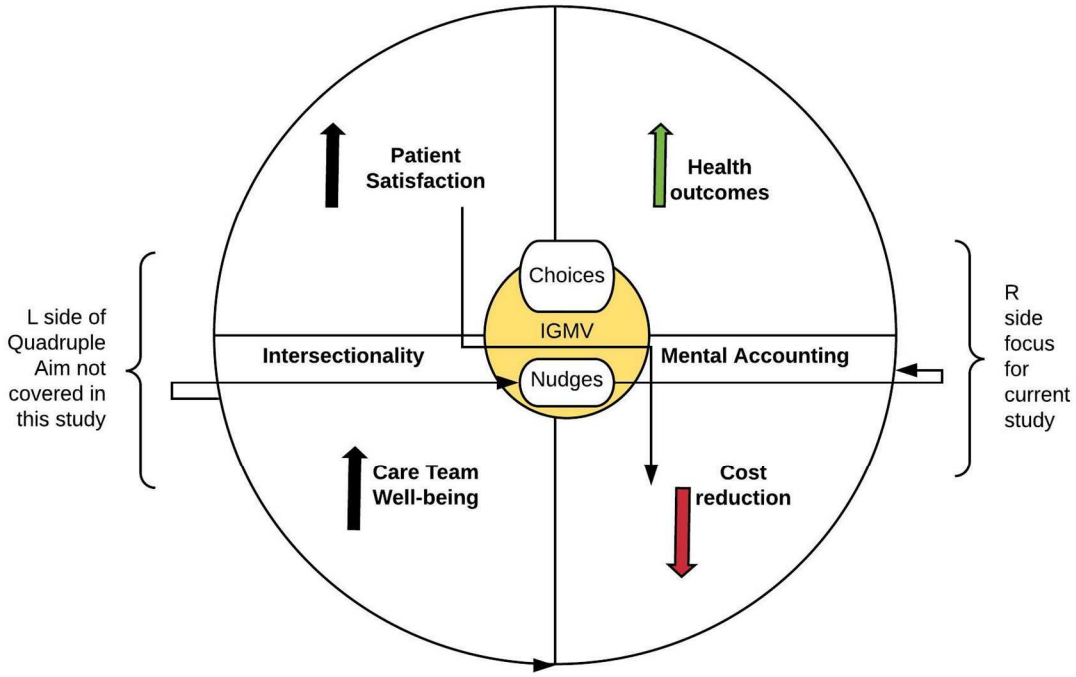
Thaler (2016) reinserts human psychology and behavior into the field of economics; reemphasizing the work of 18th century economist Smith to bring back the notion of the human drivers to economic choices (Barberis, 2018). Thaler's theory of mental accounting helps to explain why people make some of the choices they make, some of which may be rational, but more often are not rational, are based on emotion, pain, anxiety level, and what is important at the present moment not long term. He recommends that health care practitioners provide *choice architecture* to patients so that they may make more informed and better choices for their health.

Utilizing the theories of intersectionality and mental accounting to frame the research question provided insight into the interaction of these concepts together as they relate to the two aims of health outcomes and cost reduction. These are concepts and theories steeped in the context of the capitalist system, which, by definition, do not support the underserved, low-income racially/ethnically diverse patients.

Combining these lenses together opened a new way of viewing the current healthcare system and addressing the inequities in care within this contextual framework. Choice architecture combined with integrative and appropriate care has to be communicated with nudges and in culturally and diverse spaces where patients may feel safety, trust, and access to the care that is needed to address access and equity. Integration of the IGMV as a space that promotes choices and appropriate nudges frames the utility of IGMV for increasing mental health access and health equity for low-income racially/ethnically diverse patients.

Figure 2

Integrative Health Equity in Primary Care Framework



Original Contribution

The original contribution of this study was viewing IGMV as an intersectional institutional intervention for the promotion of IBH in PC for low-income diverse persons. The potential diffusion of IGMV by safety-net institutions could influence access to integrative mental health care. Framing IGMV in the context of the existing healthcare system allows decision-makers to conceptualize how IGMV contribute to the system's healthcare priorities (Figure 2).

Whether in-person or via telehealth groups, IGMVs are being integrated into primary care. The potential positive social change impact would be greater access to

integrative mental health care for low-income patients, improved mental health outcomes, and reduction of nonemergent use of the hospital. This inquiry has contributed to the body of knowledge on integrative mental health care and the underserved. Additionally, with the known evidence, this intervention could be integrated further into multidisciplinary team education at both the preservice and inservice levels of education.

The purpose of this retrospective quantitative comparative analysis was to determine whether patients with a diagnosis of anxiety, who have participated in IGMV, in the context of the PCMH, had a reduction in symptom severity for patients diagnosed with anxiety compared to patients receiving usual care who did not participate in IGMV.

Usual care was defined as patients that are had their anxiety managed by their PCP, as participation in psychotherapy groups was controlled for. Utilizing the right side aims (reduction of costs and improved health outcomes) of the QAF allowed analysis of how these constructs were interrelated. Patient felt symptoms falls under the improved health outcomes aim.

The chosen research site reported implementation of the tool Stay Healthy/Screening, Brief Intervention and Referral to Treatment that is a combination of two validated tools that have been merged into one screening system. Screening, Brief Intervention and Referral to Treatment tool is utilized in primary care to identify patients needing timely interventions and referrals to relevant resources for substance use disorder and psychiatric disorders (Hargraves et al., 2017). Both tools have been through interrater and interscreener reliability checks. Internal testing and survey fatigue in combining the

tools was also completed between 2016-2017 and all patients are mandated by the state to take the assessment annually (personal communication, M. Changaris, August 2, 2020).

The Stay Healthy Assessment is an individual health education and behavioral assessment that was developed by the Department of Health Care Services in 1999 and updated in 2013 and is available in 10 languages (DHCS, 2019). The questions related to anxiety were analyzed for the anxiety status of the participants before and after participation in IGMV groups.

Relevant Scholarship

The current standard of care for patients with anxiety disorders is to prescribe selective serotonin reuptake inhibitors (SSRIs) and serotonin and norepinephrine reuptake inhibitors (SNRIs) along with nonpharmacological interventions, including but not limited to cognitive behavioral therapy.

Mindfulness meditation is the constant integrative modality that is thread through the IGMV sessions and is defined as observing thoughts in a nonjudgmental and nonreactive way to bring a sense of heightened awareness to the present state of emotions and sensations (Barnby et al., 2015; Jayatilake, 2017; Kabat-Zinn et al., 1985). Barnby et al (2015) found that mindfulness meditation, through neuroimaging, reduced both anxiety and ruminating thoughts by inhibiting activity in the posterior regions and increasing activity in the prefrontal and frontal regions of the brain.

In a systematic review and meta-analysis, Goyal et al. (2014) found a moderate improvement in anxiety at eight weeks, but concluded that mindfulness meditation programs were no better than other therapies. However, they did recommend that

stronger study designs would need to be employed to determine the effects on health outcomes (Goyal et al., 2014). Alternatively, in a retrospective review of diverse inner-city patients' PCMH data, Smith, et al. (2015) found an open abbreviated four-week MBSR/yoga program (not attached to GMV) for their patients resulted in statistically significantly lower anxiety, but the study was limited in that it did not have a control group.

In neuroscience studies, evidence supports that mindfulness meditation modulates reactivity to inner thoughts, perceptions and the wandering mind (Brandmeyer & Delorme, 2020). In as little as 3 months, Lutz et al (2018) found that subjects had increased focus and decreased emotional reactivity (Lutz et al., 2018) whereas Brandmeyer and Delorme (2017) found similar results within 8 sessions.

Slowing down emotional reactivity is a critical outcome for those with acute or chronic anxiety symptoms (Tolin et al., 2021). Travis et al. (2018) reported in their RCT on meditation an increase in brain integration and reduced distress. Likewise, reducing distress and stress reduces cortisol release, glucose and blood pressure. Similar to other chronic diseases, if anxiety symptoms, root causes and alternative coping skills are made aware and addressed, the stress on the mind and body may result in other health related consequences such as shorter telomeres (Wang et al., 2017), loss of memory, high blood pressure, or elevated glucose. Apart from chronic pain and depression, anxiety is also often found as a comorbid condition with diabetes and hypertension (Ogle et al., 2018).

The problem is chronic uncontrolled anxiety in low-income adults in a safety-net community. Patients have on average 10 visits before they receive an anxiety diagnosis

(Alonso et al., 2018) resulting in a delay in appropriate mental health treatment. More than half of persons with depression have the comorbidity of anxiety affecting approximately 40 million people in the US (ADAA, 2020). Patients are often referred out (Stussman et al., 2019) to interventions (like counseling, meditation and yoga classes) that they are unable to afford so they resort to medications from their PCP that are cheaper alternatives rather than accessing CIH in the community. IGMVs provide access to integrative healthcare that otherwise would not be accessible.

While there is a plethora of literature on mindfulness practices for mental health for White persons, researchers reported a need for research focused on the use of mindfulness practices in low-income racially/ethnically diverse persons (Burnett-Zeigler et al.2016; Ryan et al., 2018) with anxiety. Given the cost of specialty mental health care, additional research was needed to identify which treatment interventions were effective in both improving health outcomes and containing costs especially in those who are uninsured and underinsured. Currently, the cost of ineffective treatments is costing individuals their mental stability and society millions of dollars annually in lost economic output (Chisholm et al., 2016). Burnett-Zeigler et al. (2016) recommended the addition of mindfulness meditation practices as an adjunct or replacement in some cases to usual mental health care needed to be investigated in larger sample sizes of low-income diverse adult patients.

Addressing and supporting people with anxiety disorders through an interdisciplinary approach at the primary care level integrating nonpharmacological methods may foster greater trust between racially/ethnically diverse populations and their

practitioners. I reviewed retrospectively how patients may have benefited from such interventions over time and contributed to not only addressing the gap in the literature, but also offer recommendations based on the findings for coordinated and cost-effective care to community care of those with anxiety disorders.

I chose the research site where I collected my data because there were data on my topic, this healthcare facility used an IBH model within a PCMH model and utilized a PCP and psychologist as coleads for the IGMV. The participants at the study site followed a curriculum that assisted them in building awareness and mindfulness into the choices that they make through mindful meditation exercises, progressive relaxation, and discussions about behavior change, self-care and other nonpharmacological resources. Given that almost two-thirds of the IGMVs studied included a mindfulness meditation component (Thompson-Lastad, 2019), this study focused on how IGMVs with mindfulness meditation compared to usual care in reducing symptoms of anxiety.

Research Question

What is the effect of IGMV on anxiety disorder symptom severity reduction in 1 year compared to usual care groups in low-income adult patients with anxiety disorders?

Methods

Participants

The IGMV participants of this retrospective study were 43 low-income adults ages 18-64 with an anxiety diagnosis that had participated in IGMV in a PCMH with IBH. The control group (usual care) were 42 low-income adults ages 18-64 with an

anxiety diagnosis from the same PCMH that had not participated in IGMV but who were seeing their PCP for management of their anxiety and had access to colocated IBH.

Sample and Power

For this study, 85 subjects were de-identified from historical records from two groups, IGMV and usual care and there were 43 and 42 in each group, respectively. The power of the tests was higher if the correlation coefficient between repeated measures was higher than 0.3. I used G*power computer software (Version 3.0) to calculate the sample size for the repeated-measures ANOVA procedures to determine the required sample size (Faul et al., 2009).

For a repeated measure model, statistical power was addressed separately for main (within and between subjects) effects and interaction (within-subject-by-between-subject) effects. In a repeated measures design with 2 groups, each participant was measured at 2 time points. Using a level of significance of 0.05, a medium effect size of 0.25, and a correlation coefficient of at least 0.3 between repeated measures, and a statistical power of 0.80 required a sample size of 46 subjects for within-factor (time) effects, 84 subjects for between-factor (group) effects, and 46 subjects for within-between factor interaction.

Variables/Sources of Data

The independent variable was the type of mental health service patients with an anxiety diagnosis received (usual versus IGMV) at the outpatient safety-net health care facility. The dependent variable was symptom severity prior and after participation in the IGMV. The sources of the data were de-identified safety-net hospital records and

associated outpatient records provided by the PCMH on survey results. Health center staff filtered the data by the inclusion criteria and downloaded the data into excel spreadsheets, which were sent to me.

Instrumentation or Measures

The type of data that I gathered was patient socio-demographics, such as gender, patient's psychiatric disorders diagnoses, IGMV attendance, and anxiety symptom severity scores just prior and at the end of the year.

Design and Analysis

The design was a repeated-measures retrospective, comparative analysis research design. The data that included was from the years 2017- 2018. I used single stage sampling from two points in time, first the annual wellness survey anxiety related score in 2017 prior to starting IGMV sessions in 2018 and then the annual wellness survey anxiety related score post participation. I compared reported symptom severity score between the two groups just prior to IGMV and at the end of the year. Usual care was defined as patients that were having their anxiety managed one on one by their PCP only, with access to standard IBH.

The comparison group was the group of patients with anxiety disorder that attended five or more IGMVs. The rationale for this design was that Gardiner et al. (2019) found statistically significant differences in health outcomes with those attending five or more IGMV sessions versus four or less in their RCT. The control group was those patients with anxiety disorders receiving usual care during the same time frame. The rationale for looking over the course of a year was patients spend on average six to

nine months in a group cohort (Balasubramanian et al., 2017) and patients also complete annual surveys therefore pre and post years were selected for review.

In order to protect human subjects, the institution agreed to send de-identified data for analyses and was aware that their site information would remain anonymous. The site contact person who sent the reports was not involved in the intervention or usual care of the patients for this study. The inclusion criteria for the data were: all patients included in the study had a diagnosis of anxiety disorder, low-income status, and received care from the same institution. Exclusion criteria were patients with insomnia and no comorbid anxiety diagnosis (excluding non-benzodiazepine hypnotics from analysis), active psychosis, schizophrenia, and bipolar diagnoses, or cancer diagnoses.

The principal contact person is a doctorally prepared psychologist and researcher. The site's team had not analyzed their IGMV with the proposed questions. However, they were interested in uncovering this type of data to plan for future IBH in primary care based on evidence. The psychologist voluntarily participated to run reports that filtered the information needed from historical patient records of those with anxiety who obtained usual care and those that were participating in the PCP and psychologist coled IGMVs during the 2018 calendar year.

Differences in the outcomes associated with the two groups were evaluated using repeated-measures ANOVA. Both groups had similar socioeconomic status as they were all Medicaid recipients and therefore low-income. Individual patient incomes were not available.

Data analysis began with preparatory activities such as the treatment of missing data, identification of outliers, and other such data cleaning tasks. A detailed descriptive analysis of all quantitative data was performed, involving the summarization of available socio-demographic data.

The first phase of the analysis consisted of using descriptive statistics in computing the summary measures (mean, median, standard deviation, and range) for the variables measured on interval or ratio scales and frequency distributions (absolute frequency and percent) for the variables measured on nominal or ordinal scales. Significance level was set at a *p*-value equal to or less than 0.05. All statistical analyses were carried out using SPSS (Version 27). Repeated-measures ANOVA was used to determine a decrease in symptom severity within subjects, between groups, within-subjects-by-between-group interactions (i.e., the pattern of change in symptom severity between the two groups over time).

Results

Execution

This repeated-measures retrospective comparative analysis was conducted with the proposed health center that had IBH in primary care and was situated in the western region of the U.S. The study was approved by the partner site's IRB for data collection on April 1, 2021. Walden University IRB subsequently approved the study on May 3, 2021 (IRB approval number 05-03-21-0664376). The sample used for the study was a purposeful sample of 85 established patients with anxiety diagnosis that had colocated mental health care at their PCMH. The comparison group (IGMV group) was the

alternative group care model that infused mindfulness meditation into the IGMV. The control group (usual care) was the standard model of IBH in primary care.

The IGMV group was intended to be a mindfulness movement group in which the entire group visit was focused on the mind-body connection. However, there were not enough persons with an established anxiety diagnosis in these groups to support the proposed quantitative retrospective design plan. Hence, the data were rather collected from a pain and wellness group where mindfulness meditation and progressive muscle relaxation was integrated at the beginning for 10 minutes and at the end for 10 minutes.

The premeasurement year was from 1/1/2017–12/31/2017 (+/- four months) if measurement date for screener was close to start of next year but no other appropriately timed measures existed). The postmeasurement year 1/1/2018-12/31/2018 (+/- four months) if measurement date for screener was close to start of next year but no other appropriately timed measures existed). The comparison group were individuals who had an existing anxiety disorder diagnosis and had attended four or more IGMV within the last year. The sample included 85 cases (n=43 comparison and n=42 controls). The comparison group was selected as 43 consecutive cases of individuals attending an IGMV who met inclusion criteria.

The control group (usual care) was a purposeful sample of 42 individuals who were chosen as consecutive cases who meet the inclusion criteria, but did not attend any IGMV sessions. Usual care was defined as patients that were having their anxiety managed by their PCP, as participation in psychotherapy groups was controlled for by

identifying that both intervention and control had access to usual individual or group psychotherapy and treatments.

The IGMV sessions were not designated for patients with anxiety diagnoses only. The patients selected for the retrospective analysis were patients with an anxiety diagnosis who had attended the wellness groups in which all patients had a chronic pain diagnosis. Hence, both groups had a chronic pain diagnosis.

All patients had access to IBH services which consisted of on-site therapists or psychiatrists who collaborate with the care team. The number of visits the sample had with these embedded therapists was also tracked. There were also external appointments with therapists or psychiatrists who were a part of a community network of providers or mental health clinics and these appointments were also tracked for the entire sample of patients.

Regarding wellness surveys, there were 8 missing surveys from the IGMV group, but usual care wellness surveys were all completed. Regarding ages, the range was changed from 18-65 to the actual pool that was between 19-75. Due to the strict protection of patient identity, the age of each patient and income status were not included. Once coded as IGMV or control, the patients' unique numerical identifiers were removed and patients were listed 1-85 only.

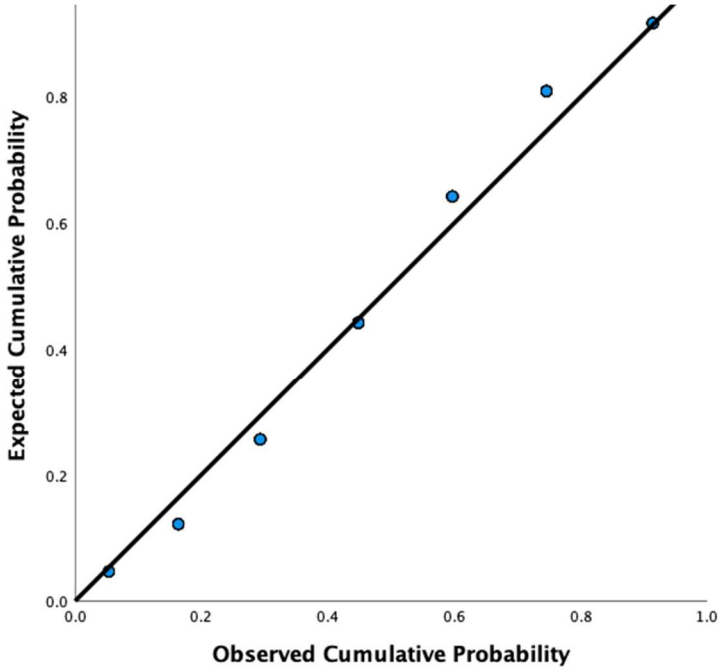
Ethical considerations were at the forefront of the execution of this study. All the data were collected and stored electronically and used only in the manner proposed in the IRB application and by the requirements of both Walden University and the Institutions' IRB. I received the de-identified data in an Excel Spreadsheet. I excluded the missing

data and imported the completed scores into SPSS version 27. I screened and coded the variables to prepare them for analysis. Then I performed descriptive statistics, frequencies and repeated-measures ANOVA and saved the outputs.

I also checked to see if the assumptions for repeated-measures ANOVA were met: independence of observations, data were interval level, normal distribution, and homogeneity (Frankfort-Nachmias & Leon-Guerrero, 2016). The first assumption assumes that neither group had influence over the other and each observation was independent of the other. This assumption was met as these were retrospective data that were selected after groups were already completed. The second assumption that data were interval was true for the dependent variable because the anxiety severity scores while a scale measurement may be described by interval or ratio. The third assumption was the sample would be drawn from a population of normal distribution was violated since this was a purposeful sample. This violation did not interfere with the data analysis since there was adequate power, but limited the generalizability of the results to the larger population (Schmider et al., 2010). The measurement points on the probability plot were distributed along the diagonal line confirming that the data were normal.

Figure 4

Normal P-P Plot for Anxiety Symptom Severity Scores



The fourth assumption of homogeneity or populations variances being equal was also met. Levene's test was not significant for pre or post measurements ($p = 0.38$, $p = 0.88$) which confirmed equal variances.

Descriptive Statistics

I conducted a baseline descriptive analysis on the limited sociodemographic information available including gender, race/ethnicity, and stress-related chronic comorbidities. The majority of the patients were female (65 of 85, 76%), Caucasian (43 of 85, 48%). The ages of the participants were not shared as a part of the de-identification process, but the range was said between 19-75 years of age, with majority between 19-65 years of age (personal communication, M. Changaris, June 17, 2021). The number of

females attending IGMV were 28 and male 15 versus the number of females in the control/usual care were 37 and male were five. The mean number of IGMV attended was 21 while the median was 20, mode 6, min 4 and maximum 50 sessions. Table 1 below displays the IGMV frequency statistics.

Table 1

Integrative Group Medical Visit Group Statistics

		N
	Valid	43
	Missing	0
Mean		21
Median		20
Mode		6
Minimum		4
Maximum		50

Table 2 displays the frequencies and percentages for the aforementioned sociodemographic information and comorbidities.

Table 2

Frequencies and Percentages for Sociodemographic Data (N = 85)

Characteristics	*N*-IGMV	*N*-Usual care	%
Race/ethnic background			
1) Latino/a	6	5	13
2) American Indian	1	0	1
3) Asian American	2	3	6
4) Black or African American	7	10	20
5) Native Hawaiian/P. Islander	1	1	2
6) White (Caucasian)	23	16	48
7) Middle Eastern (Caucasian)	1	2	3
8) Other	1	4	6
9) Declined	1	0	1
Gender			
Female	28	37	76
Male	15	5	24
Comorbidities			
PTSD	25	21	54

Chronic pain	43	42	100
Depression	22	16	38

There were 77 surveys completed at the intervals pre and post designated time frame around participation in the IGMVs. The comparison group of IGMV subjects received IGMV for one year before and after their annual surveys were collected. The second assessment was reported to be up a year and four months after depending on when they took their next assessment post IGMV involvement. They were selected as 43 consecutive cases of individuals attending IGMV who met inclusion criteria and premeasurement years ranged from 2016 through 2018 and postmeasurement years from 2018 through 2019, of which 35 completed pre and post annual survey. In contrast, all of the 42 subjects from the control group completed their surveys.

The total possible score for anxiety symptom severity was six. The mean score for the IGMV group was 3.63 at premeasurement and dropped to 3.14 for postmeasurement. The control group's anxiety symptom severity increased from the mean score premeasurement of 3.26 and went up to 3.4 for post measurement. However, the overall difference was not statistically significant.

Table 3 describes the anxiety symptom severity mean, standard deviation and sample size of both comparison and control at the pre and post measurement intervals. Premean score for anxiety symptom severity for the IGMV group was M = 3.63, SD = 1.800 while the control group, usual care, had M = 3.26, SD = 2.013. Postmean score for anxiety symptom severity for those who attended four or more IGMV sessions decreased

to M = 3.14, SD = 1.987 while the control group who did not attend any IGMV sessions anxiety symptom severity score increased to M = 3.40, SD = 1.951.

Table 3

Integrative Group Medical Visit and Control Anxiety Symptom Severity at Time 1 and Time 2

	Type of behavioral health service	Mean	Std deviation	*N*
Anxiety symptom severity premeasurement (Time 1)	IGMV	3.63	1.800	35
	Control	3.26	2.013	42
	Total	3.43	1.916	77
Anxiety symptom serverity postmeasurement (Time 2)	IGMV	3.14	1.987	43
	Control	3.40	1.951	42
	Total	3.29	1.959	77

Table 4 displays the tests of within-subjects contrasts and tests of between-subjects effects. The within-subjects test shows the amount of change that occurred at the individual level of all patients, which means that the individuals measured against themselves did not demonstrate a significant change over time in anxiety symptom severity with ($p = 0.50$). The between-subjects effects test shows that the differences between all patients' anxiety symptom severity over time was also not significant ($p = 0.89$).

Table 4

Repeated Measures Analysis of Variance Test for Anxiety Symptom Severity

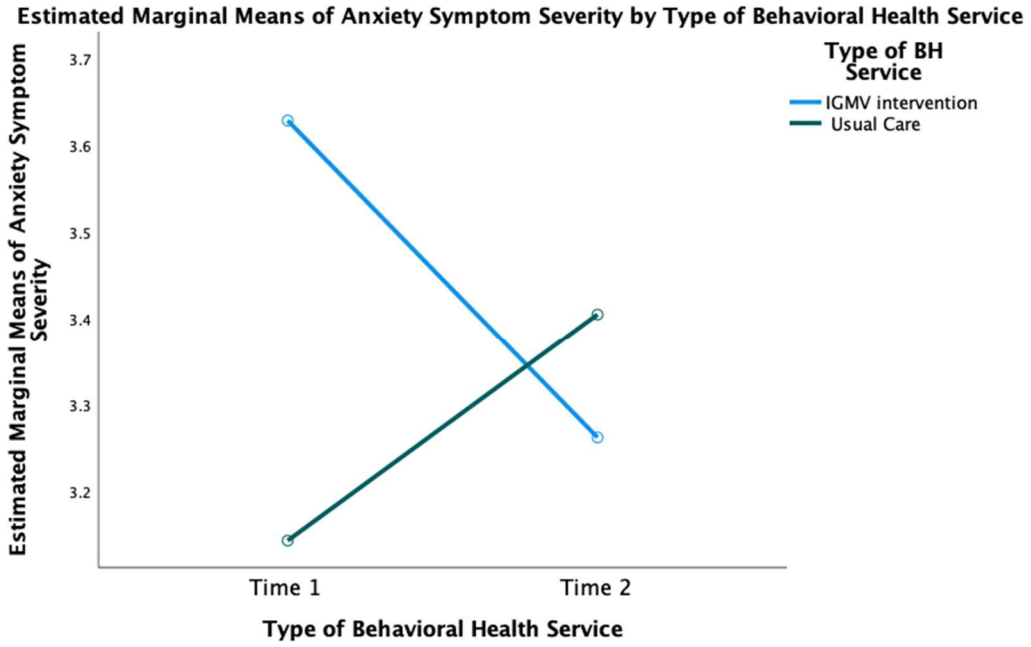
	Sum of squares	*df*	Mean square	*F*	Sig.
Within groups anxiety symptom severity	1.122	1	1.122	.455	.502
Anxiety symptom severity*type	3.771	1	3.771	1.529	.220
Between groups	.105	1	.105	.021	.886

*Anxiety symptom severity by either type of behavioral health service.

The figure below represents the estimated marginal means between the two points in time, which is the mean response for each group between the two measurements.

Figure 3

Estimated Marginal Means of Anxiety Symptom Severity by Type of Behavioral Health Service



There was an interaction in anxiety symptom severity between IGMV and the control group (F = 1.53, p = 0.22) signifying that there was a pattern of change in anxiety symptom severity from Time 1 to Time 2. Anxiety symptom severity decreased in the IGMV group and increased in the usual care group, but the change in anxiety symptom severity was not statistically significant nor was the difference in the endpoint measurements at Time 2 since usual care Time 1 was lower than IGMV Time 1.

Only 77 subjects completed both pre and post survey measurements prompting a post hoc analysis. The post hoc analysis was revealed a power of .96 within factors and a power of .77 for between factors confirming that a Type II error was averted.

Both IGMV and usual care had equal access so the only difference in their care was the exposure to the mindfulness meditation in the IGMV groups. There was no statistical significance in the frequency in which patients utilized other IBH services or the external behavioral health network. Table 5 describes the IBH utilization mean, standard deviation and sample size of both comparison and control at the pre and post measurement intervals. The IGMV patients did access IBH more frequently, but their increase in utilization over the year was minimal whereas the usual care utilization remained the same over the year.

Table 5

Integrative Group Medical Visit and Control Integrated Behavioral Health Utilization at Time 1 and Time 2

IBH in PCMH	Type of behavioral health service	Mean	Std deviation	*N*
IBH—Year 1 (Time 1)	IGMV	3.07	7.564	43
	Control	.33	1.720	42
	Total	3.86	5.652	85
IBH—Year 2 (Time 2)	IGMV	3.86	10.980	43
	Control	.33	.816	42
	Total	2.12	7.984	85

There were several types of anxiety disorder with the most common being anxiety unspecified/NOS (51 out of 85, 60%), PTSD also and then in combination with GAD or anxiety unspecified (24 out of 85, 28%), and then in descending order GAD (8 out of 85, 9%, panic disorder (4 out of 85, 5%), and health anxiety (1 out 85, 1%). Table 6 displays the frequencies of the different anxiety disorder diagnoses.

Table 6

Frequencies of Types of Anxiety Disorder

	Frequency- N		Percentage-%	
	IGMV	Usual care	IGMV	Usual care
Anxiety NOS	33	20	39	24
PTSD	10	14	12	16
GAD	3	5	4	6
Panic disorder	0	4	0	5
Health anxiety	1	0	1	0

Quantitative Measures of Association

Anxiety symptom severity change is important, but variable. Even though the symptom severity went down in the IGMV group, the patients have different types of anxiety disorders which may have affected the results. The difference between the groups was not statistically significant. Unspecified anxiety disorder was the most common disorder of the subjects in this study. The number of patients with PTSD alone or comorbid PTSD was the second most common and fairly uniform across the groups, because the current clinical classification of ICD codes is still operationalized under anxiety disorders.

Discussion

Interpretation

The results of this study did corroborate the existing research that anxiety is common in low-income adult patients, but that more research is needed on racially/ethnically diverse populations (Bucay-Harari et al., 2020; Camacho et al., 2015; Guo et al., 2015; Nelson et al., 2020). The most common diagnosis of unspecified anxiety may affect receiving the appropriate treatment and counseling in a timely manner.

Practitioners often delay a specific diagnosis when the symptoms are unclear, they have not had enough time with the patient, or the patient lacks sufficient awareness to describe their symptoms. In a review of qualitative evidence with GAD in primary care, Toledo-Chavarri (2020) reported the aforementioned PCP challenges as well as the high relapse rate of chronic uncontrolled anxiety as difficulties in managing patients with chronic anxiety disorders.

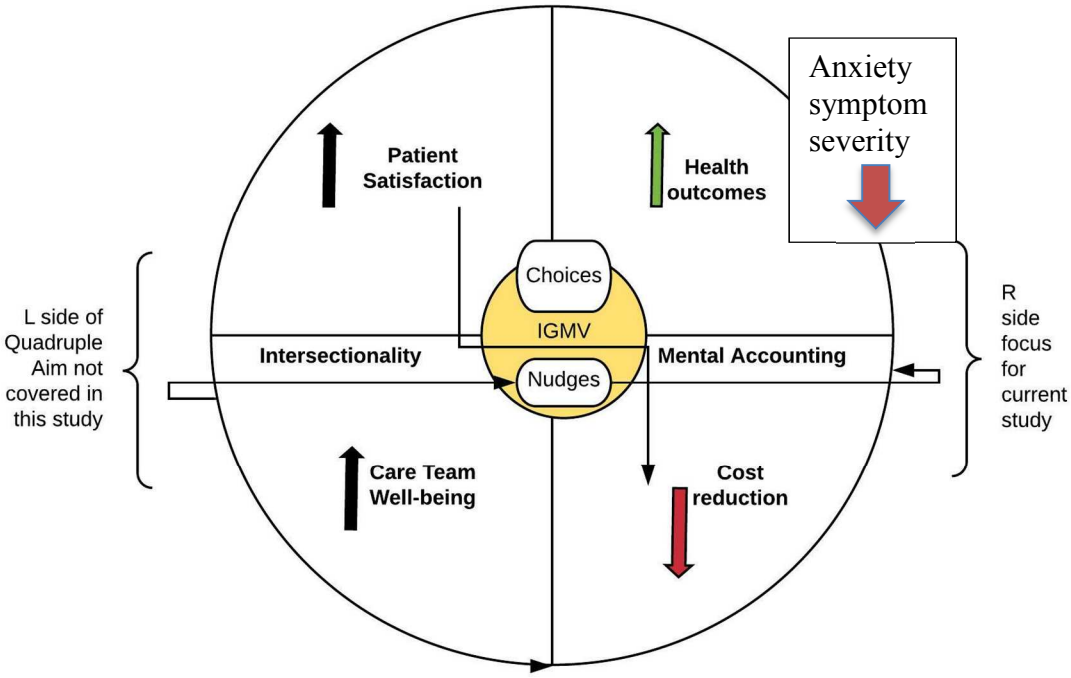
The results added to the literature on how low-income patients in primary care in PCMH context that have anxiety disorders access mental health care and how their anxiety symptom severity scores change over time. Parikh et al. (2019) demonstrated that there was clinical importance and improvement in health outcomes change when professionals were working with multiple patients together versus one-on-one calls and visits. Group care increased time with patients and provided the practitioners an opportunity to observe patients' behavior in a group setting. However, group care may or may not reduce anxiety depending on group cohesion, dynamics of the group and the facilitator. Roth et al. (2021) described a process of implementation mapping that may be useful for PCMH that does not have an IGMV program but are interested on how to implement an IGMV program. The findings of the current study also highlight that this safety-net site established the capacity to offer integrative mental health access to low-income patients and their health system structure reflects the proposed conceptual framework.

Conceptual Framework Context

The conceptual framework was partially supported by the study. The conceptual framework was created to visualize a more integrated and equitable approach to the typical structural elements of the U.S. health care systems by inserting a blended approach to care. First, is that the structure was based on the Quadruple Aim Framework which is how health care systems in the U.S. operate. At the population health level, the right side of the diagram displays the health outcomes of anxiety symptom severity.

Figure 4

Integrative Health Equity in Primary Care Framework Including Dependent Variables



At the community level, patients accessed care in both individual and group sessions in their respective health center in the health system. The usual care subjects did

not attend IGMV sessions but did have access to therapists and other psychotherapy groups within the context of their PCMH. In a metanalysis of countries with universal health care, Parker et al. (2021) concluded that the most effective care for patients with anxiety was when a behaviorist was integrated at the primary care level.

Thaler's (2016) theory on mental accounting emphasized that patients usually make irrational decisions based on anxiety, pain, and emotions. Increasing access and time with peers and practitioners with IGMV may allow the space to influence patients' mental accounting with appropriate nudges from other peers and practitioners. The relationships, knowledge, influence and support (Lavoie et al., 2013; Parikh et al., 2019) those patients may benefit from in the group setting has the potential to reduce the severity of anxiety symptoms.

This is the first longitudinal study to examine the patient's anxiety symptom severity in the context of attending an IGMV with an integrative health equity in primary care framework. All of the patients were low-income patients with co-occurring chronic pain from a diverse pool of adults utilizing public insurance to receive their health care services. While comorbid depression was also known, some of their social determinants of health were unknown, which would have been useful descriptive statistics on the population and will be described in the limitations.

Limitations

There were a several limitations in this study. Life stressors, employment status, substance use, literacy level, homelessness status, and educational attainment were not collected. Life stressors and homelessness status would have been harder to collect in a

quantitative manner, but the other socio-demographic data was expected to be collected and was not sent.

While the survey tool as a whole was assessed for validity and reliability, assessing only the questions related to anxiety versus a tool specifically for anxiety assessment was not ideal. The four questions related to anxiety on the annual wellness survey were the only available measure to assess pre and post anxiety severity scores for patients with anxiety disorders and they were not assessed separately for validity and reliability. No other anxiety assessments were taken apart from GAD, which may be limiting since not all patients are diagnosed with GAD. This was a limitation of conducting a retrospective analysis, as measurements recorded are the only ones feasible to analyze and may have affected the levels of significance seen in the outcomes.

The design of the study was a quantitative retrospective comparative analysis design with a purposeful sample. Compared to MBSR IMGV groups like those in the Gardiner et al. (2019) RCT, the mindfulness meditation component comprised only 20 minutes of the IGMV. The mindful movement IGMV was the IGMV type that was proposed for this study, but there were not enough participants with a diagnosed anxiety disorder in these sessions (personal communication, M. Changaris, May 19, 2020). This was an unexpected limitation of this doctoral project.

The sampling of these IGMV may have also affected the significance of the results since they were purposefully sampled from a chronic pain and wellness group instead of the intended mindfulness movement group. While muscle tension and pain are common anxiety symptoms (APA, 2013; Bruns et al., 2019), not all persons with an

anxiety disorder have chronic pain. Of note, there were also more patients with a diagnosis of depression in the IGMV group which may have added additional challenges and affected the results of the study.

Implications

Nursing Implications

Implications for the discipline of nursing would be for nurses to participate in the active engagement of IBH in primary care whether through leadership, management, education, or policy. As an interdisciplinary profession, nurses working collaboratively with patients, psychologists, health coaches, and care coordinators may be more effective working as a team with patients in the PCMH setting (Farber et al., 2017). In value-based settings, community nurses could be trained to facilitate groups which has been found to be effective in decreasing anxiety and medication (Izaguirre-Riesgo et al., 2019).

As leaders, nurses have the opportunity to identify patients' barriers and needs, remove barriers and implement improved patient care. Burnett-Zeigler et al. (2019) found comparable positive outcomes between the experienced mindfulness instructor and the novice instructor facilitating mindfulness with racially/ethnically diverse low-income women with depressive symptoms and suggested nurses and other health care workers be trained to facilitate mindfulness groups. As managers, nurses have the opportunity to facilitate care coordination with other team members and facilitate group visits.

As educators, nurses have the opportunity to meet individually or in groups with patients to share knowledge and resources in safe spaces for patients and to coach them to optimize their health. Williams et al. (2015) reviewed different ways in which nurses can

get training in mindfulness and incorporate mindfulness approaches into their practice. By training, nurses focus on nonpharmacological approaches and have reported higher levels of trust with patients.

As advocates, nurses have opportunities to advise local representatives and health centers on the AHRQ recommendations to offer group visits and to assure policies and procedures are in place to actualize these spaces for patients. In the field of perinatal health, the group health care model has been expanded by nurse-led organizations partnering with health centers across the country (Rising & Quimby, 2017). Lastly, nurse researchers also have the opportunity to advance interdisciplinary programs through application of research results and further research on resultant health outcomes.

Empirical Implications

Uncontrolled chronic anxiety fluctuated over time. Black IGMV patients had reduced anxiety symptoms versus usual care patients. This was not anticipated and while the sample was too small to make any conclusions, it does raise an area of potential further investigation. Additionally, Nonwhites had a drop in anxiety symptom severity regardless of intervention type, while Whites had an increase in anxiety symptom severity regardless of intervention type.

IGMV may result in some anxiety symptom reduction but the results and existing literature imply that other factors and challenges low-income adults encounter need to be taken into consideration and efforts made to reduce those barriers to behavioral health care. For example, Latino day workers had higher levels of anxiety with housing issues, experiences of discrimination, and feelings of acculturation stress (Hill et al., 2019). Less

acculturated immigrants have been found to access mental health services less (Hill et al., 2019; Burnett-Zeigler et al., 2019).

Mindfulness meditation increases processing of stressful events from the sensory cortex via the hippocampus to the amygdala and slows emotional reactivity versus directly from the thalamus to the amygdala which prompts a more rapid response (Breedlove & Watson, 2018) which is helpful when faced with challenging situations. Mindfulness meditation reduces distress and reactivity, increasing parasympathetic activity and decreasing sympathetic activity, increasing neuroplasticity, and reducing cortical thinning (Barnby et al., 2015; Brandmeyer & Delorme, 2020; Kuppusamy et al., 2020; Lutz et al., 2018; Travis et al., 2018).

Theoretical Implications

The integrative health equity in primary care framework provided a new lens in which to view mental health equity from three levels, system, community and person. The system being the health care institution with a quadruple aim, the community being the group context with practitioners and peers, and the person being the patient accessing the services. Anxiety symptom severity is experienced at the person level, but can be alleviated or aggravated by stressful or negative interactions within groups as well as by difficulty navigating the health system.

An intersectional institutional approach allowed the contextualization of the patients' experience at the system, community and person level and shifted the focus from socio-demographic attributes and their social determinants of health alone to how patients interface with an institution. These interactions may translate into their social

inclusion or exclusion as they encounter different power dynamics as they navigate through the healthcare space (Gkiouleka et al., 2018). These interactions directly influence the upper right side of the framework's (Figure 4) health outcomes.

The inclusion of group care in this conceptual framework provided a guide on how to reframe mental health as usual by incorporating the circular space that situates each individual to be in equal proximity to the other with equal level of importance and agency as they interact with health center staff and their peers. Framing health systems in this manner emphasizes health equity at the primary care level for diverse and vulnerable populations. Reframing mental health also helps patients to destigmatize the need for seeking mental health care and connecting with others that are having diagnosed or undiagnosed mental health challenges (Remick & Remick, 2014).

Social Change Implications

The results of my study effect positive social change because the results provided new longitudinal data on behavioral health access for racially/ethnically diverse publicly insured safety-net population with anxiety disorders. These patients were beneficiaries of Medicaid expansion. Thompson-Lastad and Rubin (2020) revealed that states that did not expand Medicaid have more limitations as it relates to low-income adults accessing primary care and IGMV programming.

Infusing the basic aspects of the ancient indigenous practice of yoga, specifically breath work and mindfulness meditation into the system of basic primary health care is part of reframing, prioritizing, and ensuring that diverse communities are having care

models that reflect group culture and priorities of communal versus individual care. IGMV or group visits in general are not for everyone so having options is also important.

Geller (2019) named the "group inclusion effect" as a concept that needed more exploration. I suggest that being in a group or circle versus belonging to a specific group enhanced or promoted change since patients may have been exposed to different peers in the group sessions they attended and may attend a group session based on their convenience so not always the same group. The implications for more colocated group care or hybrid groups with the option to remote in could increase the choice architecture at more PCMH locations around the country and increase flexibility for those with transportation or job constraints.

Recommendations

Future Research

Follow up prospective qualitative or quantitative, or mixed methods studies could be conducted on patients from the system with anxiety diagnosis. If feasible it would be interesting to conduct interviews with the NPs and psychologists who coled these groups to obtain their perspectives on care team well-being, which is another research gap. Additionally, a quantitative analysis comparing them with physician coled groups for cost and health outcomes differences could inform future policy and programming. Prospective studies are needed to compare IGMV patients' different health outcomes using by tracking the different amounts of mindfulness effect on the consumption of all anxiety medications, including but not limited to controlled substances like BZDs or hypnotics with a measurement scale focused on anxiety only such as the Hamilton

Anxiety Rating Scale (Hamilton, 1959) or the patient reported outcomes measurement information system (PROMIS®) Adult Anxiety Short Form version 1.0 short form 8a which consists of a 7-item questionnaire from the 29 item bank (Pilkonis et al., 2011). Other research could compare nonallopathic practitioners, nurses, social workers or health coaches leading the groups with the PCP referral only. Online anonymous surveys could also potentially reveal more information about acquisition of BZDs from the cryptomarket. Lastly, noting the latest research showing yoga was superior to non-mindful exercise in reducing anxiety (So et al., 2020), a study on yoga or mindful movement in primary care would be informative.

As many systems adopt value-based care, there is a need to investigate further the definition of group visits and perhaps the decreased reliance on having an allopathic medical practitioner present to be considered a clinical, billable care event. Future group visit studies could include measuring biofeedback and mindfulness training with the newer brain-sensing headband technology that is now available. Observing more longitudinal data is important given the long-term consequences and effects on quality adjusted life years and lost economic output (Chisholm et al. 2016; Saha et al. 2020).

Conclusion

The benefits of IGMV with mindfulness meditation was not statistically significant, but did demonstrate clinical changes at both the system and person level versus usual IBH care. Reviewing trends from 2008-2018, anxiety is on the rise for all race/ethnic groups. The trends also show that anxiety is highest women and low-income adults between ages 18-25 (Goodwin, 2020).

The results of this study demonstrated reduction in anxiety symptom severity over time with IGMV and an increase in anxiety symptoms with those in usual BH care, but the significance of that change was lacking. It is unclear if the reduction seen in IGMV patients would be sufficient enough to sustain reductions over time. The groups were mixed gender, ages, and race/ethnic groups and it is unclear if this was a protective or harmful factor. This study provided a framework for contextualizing how patients with anxiety could have options for behavioral health care and a potential additional access point to assist patients in how they respond to these stressors. The results of this study prompt prospective research with stricter study designs and larger sample size to uncover more definitive results.

References

ADAA (2020). *Facts & statistics on anxiety disorders in the US.* https://adaa.org/about-adaa/press-room/facts-statistics

Adams, D. J., Remick, R. A., Davis, J. C., Vazirian, S., & Khan, K. M. (2015). Exercise as medicine—the use of group medical visits to promote physical activity and treat chronic moderate depression: A preliminary 14-week pre–post study. *BMJ Open Sport & Exercise Medicine*, *1*(1), e000036. https://doi.org/10.1136/bmjsem2015000036

AHRQ. (2018). *Strategy 6M: Group Visits.* https://www.ahrq.gov/cahps/qualityimprovement/improvement-guide/6strategies-for-improving/access/strategy6m-groupvisits.html

Alonso, J., Liu, Z., Evans-Lacko, S., Sadikova, E., Sampson, N., Chatterji, S., Abdulmalik, J., Aguilar-Gaxiola, S., Al-Hamzawi, A., Andrade, L. H., & Bruffaerts, R. (2018). Treatment gap for anxiety disorders is global: Results of the world mental health surveys in 21 countries. *Depression and anxiety*, *35*(3), 195-208. https://doi.org/10.1002/da.22711

American Psychiatric Association, A. P., & American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (Vol. 10). Washington, DC: American Psychiatric Association.

Balasubramanian, B. A., Cohen, D. J., Jetelina, K. K., Dickinson, L. M., Davis, M., Gunn, R., Gowen, K., deGruy, F. K., Miller, B. F., & Green, L. A. (2017). Outcomes of integrated behavioral health with primary care. *The Journal of the*

American Board of Family Medicine, 30(2), 130-139. https://doi.org/10.3122/jabfm.2017.02.160234

Bandelow, B., Michaelis, S., & Wedekind, D. (2017). Treatment of anxiety disorders. *Dialogues in Clinical Neuroscience*, *19*(2), 93. https://doi.org/10.31887/DCNS.2017.19.2/bbandelow

Barberis, N. (2018). Richard Thaler and the rise of behavioral economics. *The Scandinavian Journal of Economics*, *120*(3), 661-684. https://doi.org/10.1111/sjoe.12313

Barnby, J. M., Bailey, N. W., Chambers, R., & Fitzgerald, P. B. (2015). How similar are the changes in neural activity resulting from mindfulness practice in contrast to spiritual practice? *Consciousness and Cognition*, *36*, 219-232. https://doi.org/10.1016/j.concog.2015.07.002

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: Care, health, and cost. *Health Affairs*, *27*(3), 759-769. https://doi.org/10.1377/hlthaff.27.3.759

Blackwelder, R., & Bragg, S. (2016). Anxiety disorders: A blended treatment approach. *The International Journal of Psychiatry in Medicine*, *51*(2), 137-144. https://doi.org/10.1177%2F0091217416636575

Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: Care of the patient requires care of the provider. *The Annals of Family Medicine*, *12*(6), 573-576. https://doi.org/10.1370/afm.1713

Brandmeyer, T., & Delorme, A. (2020). Meditation and the wandering mind: A theoretical framework of underlying neurocognitive mechanisms. *Perspectives*

on Psychological Science, 1745691620917340. https://doi.org/10.1177%2F1745691620917340

Breedlove, S. M., & Watson, N. V. (2018). *Behavioral neuroscience*. Sinauer Associates, Incorporated, Publishers.

Bruns, E. B., Befus, D., Wismer, B., Knight, K., Adler, S. R., Leonoudakis-Watts, K., Thompson-Lastad, A. & Chao, M. T. (2019). Vulnerable patients' psychosocial experiences in a group-based, integrative pain management program. *The Journal of Alternative and Complementary Medicine*, *25*(7), 719-726. https://doi.org/10.1089%2Facm.2019.0074

Bucay-Harari, L., Page, K. R., Krawczyk, N., Robles, Y. P., & Castillo-Salgado, C. (2020). Mental health needs of an emerging Latino community. *The Journal of Behavioral Health Services & Research*, 1-11. https://doi.org/10.1007/s11414-020-09688-3

Buche, J., Singer, P. M., Grazier, K., King, E., Maniere, E., & Beck, A. J. (2017). Primary care and behavioral health workforce integration: Barriers and best practices. *Behavioral Health Workforce Research Center*, *1*(1), 1-16. https://doi.org/10.1186/s12875-020-01307-6

Bukar, N. K., Eberhardt, L. M., & Davidson, J. (2019). East meets west in psychiatry: Yoga as an adjunct therapy for management of anxiety. *Archives of Psychiatric Nursing*, *33*(4), 371-376. https://behavioralhealthworkforce.org/wpcontent/uploads/2017/02/FA2P3_Team-based-Care-Case-Studies_Full-Report.pdf

Burnett-Zeigler, I., Schuette, S., Victorson, D., & Wisner, K. L. (2016). Mind–body approaches to treating mental health symptoms among disadvantaged populations: A comprehensive review. *The Journal of Alternative and Complementary Medicine*, *22*(2), 115-124. https://doi.org/10.1089/acm.2015.0038

Camacho, A., Gonzalez, P., Buelna, C., Emory, K. T., Talavera, G. A., Castaneda, S. F., Espinoza, R. A., Howard, A. G., Perreira, K. M., Isasi, C. R., & Daviglus, M. L. (2015). Anxious-depression among Hispanic/Latinos from different backgrounds: Results from the Hispanic community health study/study of Latinos (HCHS/SOL). *Social Psychiatry and Psychiatric Epidemiology*, *50*(11),1669–1677. https://doi.org/10.1007%2Fs00127-015-1120-4

Chao, M. T., Abercrombie, P. D., Santana, T., & Duncan, L. G. (2015). Applying the RE AIM framework to evaluate integrative medicine group visits among diverse women with chronic pelvic pain. *Pain Management Nursing*, *16*(6), 920–929. https://doi.org/10.1016/j.pmn.2015.07.007

Chao, M. T., Hurstak, E., Leonoudakis-Watts, K., Sidders, F., Pace, J., Hammer, H., & Wismer, B. (2019). Patient-reported outcomes of an integrative pain management program implemented in a primary care safety net clinic: A quasi experimental study. *Journal of General Internal Medicine*, *34*(7), 1105-1107. https://doi.org/10.1007/s11606-019-04868-0

Chisholm, D., Sweeny, K., Sheehan, P., Rasmussen, B., Smit, F., Cuijpers, P., & Saxena, S. (2016). Scaling-up treatment of depression and anxiety: A global return on

investment analysis. *The Lancet Psychiatry*, *3*(5), 415-424. https://doi.org/10.1016/S2215-0366(16)30024-4

Cornelio-Flores, O., Lestoquoy, A. S., Abdallah, S., DeLoureiro, A., Lorente, K., Pardo, B., Olunwa, J., & Gardiner, P. (2018). The Latino integrative medical group visit as a model for pain reduction in underserved Spanish speakers. *The Journal of Alternative and Complementary Medicine*, *24*(2), 125-131. https://doi.org/10.1089/acm.2017.0132

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of anti-discrimination doctrine, feminist theory and antiracist politics. *The University of Chicago Legal Forum 139*, 139–167. https://philpapers.org/archive/CREDTI.pdf?ncid=txtlnkusaolp00000603

Dark, T., Flynn, H. A., Rust, G., Kinsell, H., & Harman, J. S. (2017). Epidemiology of emergency department visits for anxiety in the United States: 2009-2011. *Psychiatric Services*, *68*(3), 238-244. https://doi.org/10.1176/appi.ps.201600148

DHCS. (2019). *Stay Healthy Assessment Questionnaires*. https://www.dhcs.ca.gov/formsandpubs/forms/Pages/StayingHealthyAssessmenQuestionnaires.aspx#formh

Dresner, D., Gergen Barnett, K., Resnick, K., Laird, L. D., & Gardiner, P. (2016). Listening to their words: A qualitative analysis of integrative medicine group visits in an urban underserved medical setting. *Pain Medicine, 17*(6), 1183-1191. https://doi.org/10.1093/pm/pnw030

Driot, D., Bismuth, M., Maurel, A., Soulie-Albouy, J., Birebent, J., Oustric, S., & Dupouy, J. (2017). Management of first depression or generalized anxiety disorder episode in adults in primary care: A systematic metareview. *La Presse Médicale*, *46*(12), 1124-1138. https://doi.org/10.1016/j.lpm.2017.10.010

Driot, D., Ouhayoun, S., Perinelli, F., Grézy-Chabardès, C., Birebent, J., Bismuth, M., & Dupouy, J. (2019). Non-drug and drug alternatives to benzodiazepines for insomnia in primary care: Study among GPs and pharmacies in a southwest region of France. *Therapies*, *74*(5), 537-546. https://www.elsevier.com/openaccess/userlicense/1.0/

Edelman, D., McDuffie, J. R., Oddone, E., Gierisch, J. M., Nagi, A., & Williams, J. J. (2012). *Shared medical appointments for chronic medical conditions: A systematic review.* Department of Veterans Affairs. https://europepmc.org/article/nbk/nbk99785

Elbel, B., Gillespie, C., & Raven, M. C. (2014). Presenting quality data to vulnerable groups: Charts, summaries or behavioral economic nudges? *Journal of Health Services Research & Policy*, *19*(3), 161-168. https://doi.org/10.1177%2F1355819614524186

Farber, E. W., Ali, M. K., Van Sickle, K. S., & Kaslow, N. J. (2017). Psychology in patient-centered medical homes: Reducing health disparities and promoting health equity. *American Psychologist*, *72*(1), 28. https://doi.org/10.1037/a0040358

Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses, *Behavior Research Methods, 41* (4), 1149-1160. https://doi.org/10.3758/BRM.41.4.1149

Furbish, S. M., Kroehl, M. E., Loeb, D. F., Lam, H. M., Lewis, C. L., Nelson, J., Chow, Z., & Trinkley, K. E. (2017). A pharmacist–physician collaboration to optimize benzodiazepine use for anxiety and sleep symptom control in primary care. *Journal of Pharmacy Practice*, *30*(4), 425-433. https://doi.org/10.1177%2F0897190016660435

Gardiner, P., Luo, M., D'Amico, S., Gergen-Barnett, K., White, L. F., Saper, R., Mitchell, S., & Liebschutz, J. M. (2019). Effectiveness of integrative medicine group visits in chronic pain and depressive symptoms: A randomized controlled trial. *PloS One*, *14*(12). https://doi.org/10.1371/journal.pone.0225540

Gardiner, P., Dresner, D., Barnett, K. G., Sadikova, E., & Saper, R. (2014). Medical group visits: A feasibility study to manage patients with chronic pain in an underserved urban clinic. *Global Advances in Health and Medicine*, *3*(4), 20-26. https://doi.org/10.7453/gahmj.2014.011

Gardiner, P., Lestoquoy, A. S., Gergen-Barnett, K., Penti, B., White, L. F., Saper, R., Fredman, L., Stillman, S., Negash, N.L., Adelstein, P., & Brackup, I. (2017). Design of the integrative medical group visits randomized control trial for underserved patients with chronic pain and depression. *Contemporary Clinical Trials, 54,* 25-35. https://doi.org/10.1016/j.cct.2016.12.013

Gareau, S., Lòpez-De Fede, A., Loudermilk, B. L., Cummings, T. H., Hardin, J. W., Picklesimer, A. H., Crouch, E., & Covington-Kolb, S. (2016). Group prenatal care results in Medicaid savings with better outcomes: A propensity score analysis of centering pregnancy participation in South Carolina. *Maternal and Child Health Journal, 20*(7), 1384-1393. https://doi.org/10.1007/s10995-016-1935-y

Gates, K., Petterson, S., Wingrove, P., Miller, B., & Klink, K. (2016). You can't treat what you don't diagnose: An analysis of the recognition of somatic presentations of depression and anxiety in primary care. *Families, Systems, & Health*, *34*(4), 317. https://doi.org/10.1037/fsh0000229

Geller, J. S. (2019). Group medical visits: Introducing the "group inclusion effect" and key principles for maximization. *The Journal of Alternative and Complementary Medicine*, *25*(7), 673-674. https://doi.org/10.1089/acm.2019.0012

Geller, J. S., Kulla, J., & Shoemaker, A. (2015). Group medical visits using an empowerment-based model as treatment for women with chronic pain in an underserved community. *Global Advances in Health and Medicine, 4(*6), 27-31. https://doi.org/10.7453/gahmj.2015.057

Geller, J. S., Orkaby, A., & Cleghorn, G. D. (2011). Impact of a group medical visit program on Latino health-related quality of life. *EXPLORE: The Journal of Science and Healing*, *7*(2), 94-99. https://doi.org/10.1016/j.explore.2010.12.005

Gkiouleka, A., Huijts, T., Beckfield, J., & Bambra, C. (2018). Understanding the micro and macro politics of health: Inequalities, intersectionality & institutions—A

research agenda. *Social Science & Medicine*, *200*, 92-98. https://doi.org/10.7453/gahmj.2015.057

Goodwin, R. D., Weinberger, A. H., Kim, J. H., Wu, M., & Galea, S. (2020). Trends in anxiety among adults in the United States, 2008–2018: Rapid increases among young adults. *Journal of Psychiatric Research, 130*, 441-446. https://doi.org/10.1016%2Fj.jpsychires.2020.08.014

Goyal, M., Singh, S., Sibinga, E. M., Gould, N. F., Rowland-Seymour, A., Sharma, R., Berger, Z., Sleicher, D., Maron, D. D., Shihab, H. M., & Ranasinghe, P. D. (2014). Meditation programs for psychological stress and well-being: A systematic review and meta-analysis. *JAMA Internal Medicine*, *174*(3), 357-368. https://doi.org/10.1001/jamainternmed.2013.13018

Guo, M., Li, S., Liu, J., & Sun, F. (2015). Family relations, social connections, and mental health among Latino and Asian older adults. *Research on Aging*, *37*(2), 123-147. https://doi.org/10.1177/0164027514523298

Hamilton, M. A. X. (1959). The assessment of anxiety states by rating. *British Journal of Medical Psychology, 32*(1), 50-55. https://doi.org/10.1111/j.2044341.1959.tb00467.x

Hargraves, D., White, C., Frederick, R., Cinibulk, M., Peters, M., Young, A., & Elder, N. (2017). Implementing SBIRT (Screening, Brief Intervention and Referral to Treatment) in primary care: Lessons learned from a multi-practice evaluation portfolio. *Public Health Reviews*, *38*(1), 1-11. https://doi.org/10.1186/s40985-0170077-0

Hill, C. M., Williams, E. C., & Ornelas, I. J. (2019). Help wanted: Mental health and social stressors among Latino day laborers. *American Journal of Men's Health*, *13*(2), https://doi.org/10.1177/1557988319838424

Housden, L., Browne, A. J., Wong, S. T., & Dawes, M. (2017). Attending to power differentials: How NP-led group medical visits can influence the management of chronic conditions. *Health Expectations*, *20*(5), 862-870. https://doi.org/10.1111/hex.12525

Izaguirre-Riesgo, A., Menéndez-González, L., & Pérez, F. A. (2020). Effectiveness of a nursing program in self-care and mindfulness, for the approach of common mental disorder, in primary care. *Primary Care, 52* (6), 400-409. https://doi.org/10.1016/j.aprim.2019.05.015

Jayatilake, P. (2017). Mindfulness, relaxation and other stress relief techniques. *Journal of Community and Public Health Nursing, 3:4.* https://doi.org/10.4172/24719846.1000191

Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8(*2), 163-190.

Kakareka, R., Stone, T. A., Plsek, P., Imamura, A., & Hwang, E. (2019). Fresh and savory: Integrating teaching kitchens with shared medical appointments. *The Journal of Alternative and Complementary Medicine*, *25*(7), 709-718. https://doi.org/10.1089/acm.2019.0091

Kessler, R., Miller, B. F., Kelly, M., Graham, D., Kennedy, A., Littenberg, B., MacLean, C. D., Van Eeghen, C., Scholle, S. H., Tirodkar, M. & Morton, S. (2014). Mental health, substance abuse, and health behavior services in patient-centered medical homes. *The Journal of the American Board of Family Medicine*, *27*(5), 637-644. https://www.jabfm.org/content/jabfp/27/5/637.full.pdf

Kuppusamy, M., Kamaldeen, D., Pitani, R., Amaldas, J., Ramasamy, P., Shanmugam, P., & Vijayakumar, V. (2020). Effects of yoga breathing practice on heart rate variability in healthy adolescents: A randomized controlled trial. *Integrative Medicine Research*, *9*(1), 28-32. https://doi.org/10.1016/j.imr.2020.01.006

Lavoie, J. G., Wong, S. T., Chongo, M., Browne, A. J., MacLeod, M. L., & Ulrich, C. (2013). Group medical visits can deliver on patient-centered care objectives: Results from a qualitative study. *BMC Health Service Research, 13*(1), 155. https://doi.org/10.1186/1472-696313-155.pdf

Lestoquoy, A. S., Laird, L. D., Mitchell, S., Gergen-Barnett, K., Negash, N. L., McCue, K., Enad, R., & Gardiner, P. (2017). Living with chronic pain: Evaluating patient experiences with a medical group visit focused on mindfulness and non-pharmacological strategies. *Complementary Therapies in Medicine*, *35*, 33-38. https://doi.org/10.1016/j.ctim.2017.09.002

Linman, S., Benjenk, I., & Chen, J. (2019). The medical home functions of primary care practices that care for adults with psychological distress: A cross-sectional study. *BMC Health Services Research*, *19*(1), 21. https://doi.org/10.1186/s12913018-3845-8

Lutz, D. J., Gipson, D. R., & Robinson, D. N. (2019). Yoga as an adjunct for treatment of substance abuse. *Practice Innovations*, *4*(1), 13. https://doi.org/10.1037/pri0000079

Mehl-Madrona, L., Mainguy, B., & Plummer, J. (2016). Integration of complementary and alternative medicine therapies into primary-care pain management for opiate reduction in a rural setting. *The Journal of Alternative and Complementary Medicine, 22*(8), 621-626. https://doi.org/10.1089/acm.2015.0212

Nelson, A., Ayers, E., Sun, F., & Zhang, A. (2020). Culturally adapted psychotherapeutic interventions for Latino depression and anxiety: A meta-analysis. *Research on Social Work Practice*, *30*(4), 368-381. https://doi.org/10.1177/1049731519899991

NIH. (2017). National Institute of Mental Health. *Mental illness health statistics.* https://www.nimh.nih.gov/health/statistics/mental-illness.shtml

Noffsinger, E. B. (2012). *The ABCs of group visits: An implementation manual for your practice*. Springer Science and Business Media. https://doi.org/10.1007/978-146143526-6

Ogle, Z., Koen, L., & Niehaus, D. J. (2018). The development of the visual screening tool for anxiety disorders and depression: Addressing barriers to screening for depression and anxiety disorders in hypertension and/or diabetes. *African Journal of Primary Health Care & Family Medicine*, *10*(1), 1-6. https://doi.org/10.4102/phcfm.v10il.1721

Ornish D., Brown S. E., Scherwitz L. W., Billings J. H., Armstrong W. T., Ports, T. A., McLanahan, S. M., Kirkeeide, R. L., Gould, K. L. & Brand, R. J. (1990) Can

lifestyle changes reverse coronary heart disease? The lifestyle heart trial. *Lancet*, *336*, 129–133. https://www.chrisjbradshaw.com/wpcontent/uploads/2016/01/Can-lifestyle-changes-reverse-coronary-heart-diseaseOrnish-Lancet-1990.pdf

Orzechowski, N. M., Lloyd, D., Tuthill, K., Puttgen, J., & Bergeron, R. (2016). Use of a shared medical appointment for patients with fibromyalgia in a rural, academic medical center: A process improvement initiative for the development of a new care model. *Arthritis and Rheumatology* (68).

Parikh, M., Rajendran, I., D'Amico, S., Luo, M., & Gardiner, P. (2019). Characteristics and components of medical group visits for chronic health conditions: A systematic scoping review. *The Journal of Alternative and Complementary Medicine*, *25*(7), 683 698. https://doi.org/10.1089/acm.2018.0524

Parker, E. L., Banfield, M., Fassnacht, D. B., Hatfield, T., & Kyrios, M. (2021). Contemporary treatment of anxiety in primary care: a systematic review and meta -analysis of outcomes in countries with universal healthcare. *BMC Family Practice, 22*(1), 1-15. https://doi.org/10.1186/s12875-021-01445-5

Pilkonis, P. A., Choi, S. W., Reise, S. P., Stover, A. M., Riley, W. T., & Cella, D. (2011). Item banks for measuring emotional distress from the patient-reported outcomes measurement information system (PROMIS®): Depression, anxiety, and anger. *Assessment*, *18*(3), 263–283. https://doi.org/10.1177%2F1073191111411667

Pruitt, R., Lemanski, A., & Carroll, A. (2018). Herbal supplements: Research findings and safety. *The Nurse Practitioner*, *43*(5), 32-37.

[Quadruple Aim]. Retrieved March 31, 2020 from https://www.google.com/search?q=quadruple+aim+free+stock&tbm=isch&sour=univ&sa=X&ved=2ahUKEwiw2JTyjcboAhVsc98KHa7NCt4Q7Al6BAgGEB&biw=1164&bih=631#imgrc=HffB1pFIvfPxmM

Remick, R. A., & Remick, A. K. (2014). Do patients really prefer individual outpatient follow-up visits, compared with group medical visits? *The Canadian Journal of Psychiatry*, *59*(1), 50-53. https://doi.org/10.1177%2F107319111141166710.1177%2F070674371405900109

Rising, S. S., & Quimby, C. H. (Eds.). (2016). *The CenteringPregnancy model: The power of group health care*. Springer Publishing Company.

Roth, I. J., Tiedt, M. K., Barnhill, J. L., Karvelas, K. R., Faurot, K. R., Gaylord, S., Gardiner, P., Miller, V. E. and Leeman, J. (2021). Feasibility of implementation mapping for integrative medical group visits. *The Journal of Alternative and Complementary Medicine, 27*(S1), S-71. https://doi.org/10.1089/acm.2020.0393

Rowley, R. A., Phillips, L. E., O'Dell, L., El Husseini, R., Carpino, S., & Hartman, S. (2016). Group prenatal care: A financial perspective. *Maternal and Child Health Journal, 20*(1), 1-10. https://doi.org/10.1007/s10995-015-1802-2

Ryan, D., Maurer, S., Lengua, L., Duran, B., & Ornelas, I. J. (2018). Amigas Latinas motivando el alma (ALMA): An evaluation of a mindfulness intervention to promote mental health among latina immigrant mothers. *The Journal of*

Behavioral Health Services & Research, *45*(2), 280-291. https://doi.org/s11414017-9582-7

Saha, S., Jarl, J., Gerdtham, U.-G., Sundquist, K., & Sundquist, J. (2020). Economic evaluation of mindfulness group therapy for patients with depression, anxiety, stress and adjustment disorders compared with treatment as usual. *British Journal of Psychiatry, 216*(4), 197–203. https://doi.org/10.1192/bjp.2018.247

Sampaio, C. V. S., Lima, M. G., & Ladeia, A. M. (2016). Efficacy of healing meditation in reducing anxiety of individuals at the phase of weight loss maintenance: A randomized blinded clinical trial. *Complementary Therapies in Medicine*, *29*, 1-8. https://doi.org/10.1016/j.ctim.2016.08.005

Saper, R. B., Lemaster, C., Delitto, A., Sherman, K. J., Herman, P. M., Sadikova, E., Stevans, E., Keosaian, J. E., Cerrada, C. J., Femia, A. L., & Roseen, E. J. (2017). Yoga, physical therapy, or education for chronic low back pain: A randomized noninferiority trial. *Annals of Internal Medicine*, *167*(2), 85 94. https://doi.org/10.7326/M16-2579

Schmider, E., Ziegler, M., Danay, E., Beyer, L., & Bühner, M. (2010). Is it really robust? Reinvestigating the robustness of ANOVA against violations of the normal distribution assumption. *Methodology, 6*(4), 147–151. https://doi.org/10.1027/1614-2241/a000016

Shaw, S., Dresner, D., Gardiner, P., Barnett, K. G., & Saper, R. (2014). Integrative medicine group visits and emergency department utilization. *The Journal of Alternative and Complementary Medicine, 20*(5), A67-A68.

https://doi.org/10.1089/acm.2014.5176.abstract

Smith, B., Metzker, K., Waite, R., & Gerrity, P. (2015). Short-form mindfulness-based stress reduction reduces anxiety and improves health-related quality of life in an inner-city population. *Holistic Nursing Practice*, *29*(2), 70-77. https://doi.org/10.1097/HNP.0000000000000075

So, W. W. Y., Lu, E. Y., Cheung, W. M., & Tsang, H. W. H. (2020). Comparing mindful and non-mindful exercises on alleviating anxiety symptoms: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health, 17*(22), 8692. https://doi.org/10.3390/ijerph17228692

Spinelli, W. M. (2013). The phantom limb of the triple aim. *Mayo Clinic Proceedings (88)* 12, 1356-1357. https://doi.org/10.1016/j.mayocp.2013.08.017

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of internal medicine*, *166*(10), 1092-1097. https://doi.org/10.1001/archinte.166.10.1092

Stone, A., Rogers, D., Kruckenberg, S., & Lieser, A. (2012). Impact of the mental healthcare delivery system on California emergency departments. *Western Journal of Emergency Medicine*, *13*(1), 51. https://doi.org/10.5811%2Fwestjem.2011.6.6732

Strickland, C., Merrell, S., & Kirk, J. K. (2016). Centering pregnancy meeting the quadruple aim in prenatal care. *North Carolina Medical Journal, 77*(6), 394 397. https://www.ncmedicaljournal.com/content/ncm/77/6/394.full.pdf

Stussman, B. J., Nahin, R. R., Barnes, P. M., & Ward, B. W. (2019). U.S. physician recommendations to their patients about the use of complementary health approaches. *The Journal of Alternative and Complementary Medicine*, *26*(1), 25 33. https://doi.org/10.1089/acm.2019.0303

Thaler, R. H. (2016). Behavioral economics: Past, present, and future. *American Economic Review*, *106*(7), 1577-1600. https://doi.org/10.1257/aer.106.7.1577

Thompson-Lastad, A. (2018). Group medical visits as participatory care in community health centers. *Qualitative Health Research*, *28*(7), 1065-1076. https://doi.org/10.1177%2F1049732318759528

Thompson-Lastad, A., Gardiner, P., & Chao, M. T. (2019). Integrative group medical visits: A national scoping survey of safety-net clinics. *Health Equity*, *3*(1), 1-8. https://doi.org/10.1089/heq.2018.0081

Thompson-Lastad, A., & Rubin, S. (2020). A crack in the wall: Chronic pain management in integrative group medical visits. *Social Science & Medicine*, *258*, 113061. https://doi.org/10.1016/j.socscimed.2020.113061

Toledo-Chávarri, A., Ramos-García, V., Torres-Castaño, A., Trujillo-Martín, M. M., Castro, W. P., Del Cura-Castro, I., Serrano-Aguilar, P., & Perestelo-Pérez, L. (2020). Framing the process in the implementation of care for people with generalized anxiety disorder in primary care: A qualitative evidence synthesis. *BMC Family Practice*, 21(1), 237. https://doi.org/10.1186/s12875-020-01307-6

Tolin, D. F., Lee, E., Levy, H. C., Das, A., Mammo, L., Katz, B. W., & Diefenbach, G. J. (2021). Psychophysiological assessment of stress reactivity and recovery in

anxiety disorders. *Journal of Anxiety Disorders, 82*, 102426. https://doi.org/10.1016/j.janxdis.2021.102426

Travis, F., Valosek, L., Konrad IV, A., Link, J., Salerno, J., Scheller, R., & Nidich, S. (2018). Effect of meditation on psychological distress and brain functioning: A randomized controlled study. *Brain and Cognition*, *125*, 100-105. https://doi.org/10.1016/j.bandc.2018.03.011

Wadsworth, K. H., Archibald, T. G., Payne, A. E., Cleary, A. K., Haney, B. L., & Hoverman, A. S. (2019). Shared medical appointments and patient-centered experience: A mixed-methods systematic review. *BMC Family Practice*, *20*(1), 97. https://doi.org/10.1186/s12875-019-0972-1

Wang, X., Sundquist, K., Hedelius, A., Palmér, K., Memon, A. A., & Sundquist, J. (2017). Leukocyte telomere length and depression, anxiety and stress and adjustment disorders in primary health care patients. *BMC Psychiatry*, *17*(1), 148. https://doi.org/10.1186/s12888-017-1308-0

Webster, R., Thompson, A. R., Norman, P., & Goodacre, S. (2017). The acceptability and feasibility of an anxiety reduction intervention for emergency department patients with non-cardiac chest pain. *Psychology, Health & Medicine*, *22*(1), 1-11. https://doi.org/10.1080/13548506.2016.1144891

Williams, H., Simmons, L. A., & Tanabe, P. (2015). Mindfulness-based stress reduction in advanced nursing practice: a nonpharmacologic approach to health promotion, chronic disease management, and symptom control. *Journal of Holistic Nursing, 33*(3), 247-259. https://jhn.sagepub.com

Wimberly, A. S., Engstrom, M., Layde, M., & McKay, J. R. (2018). A randomized trial of yoga for stress and substance use among people living with HIV in reentry. *Journal of Substance Abuse Treatment*, *94*, 97-104. https://doi.org/10.1016%2Fj.jsat.2018.08.001

Zeiss, A. M., & Karlin, B. E. (2008). Integrating mental health and primary care services in the department of veterans affairs health care system. *Journal of Clinical Psychology in Medical Settings*, *15*(1), 73-78. https://www.mirecc.va.gov/MIRECC/VISN16/docs/Zeiss_and_Karlin.pdf

Part 3: Summary

Integration of the Studies

The findings from the three studies are related and show promise for investigating aspects of ED utilization, BZD tapering, and anxiety symptom severity in patients with anxiety disorders in more depth in future studies. The preceding literature supports the use of IGMV in patients with cancer, chronic pain, and depression (Chao et al., 2019; Charlot et al., 2019; Gardiner et al., 2019; Thompson-Lastad, 2019) and a reduction in wait times for appointments (Orzechowski, 2016). Many of these patients also have co-occurring anxiety, and a subset of them still use controlled substances for pain, anxiety, and sometimes both (Bruns et al., 2019; Vadiei & Battacharjee, 2020). While EDs are not equipped with mental health care services, patients continue to use the ED for mental health care for their uncontrolled anxiety (Dark et al., 2017) as delays in accessing IBH in primary care persist for low-income diverse populations (Acevedo, 2015; James et al., 2010; Saluja et al., 2019). In this study, I investigated an integrative model of care that may increase behavioral health access for low-income patients with anxiety within the context of their PCMH. The findings reduced the gap but also raised more potential research questions as well as appropriate research methods.

The findings revealed lower ED utilization, reduced BZD use, and reduction in anxiety symptom severity in patients who participated in IGMV, but compared to usual care, these results were not statistically significant. These results may still be clinically significant and prompt the need for further research with stricter study designs. Because this was the first study focusing on anxiety disorders in the context of IGMV in the

PCMH, there is no direct comparison with any of the existing literature. However, the protective effect of mindfulness meditation and the benefits of previous RCTs on both GMV and IGMV prompt further investigation.

Alignment With Theoretical Framework

The findings aligned with this new conceptual framework, which blends an integrative group approach within the PCMH to promote greater access for low-income patients to IBH in primary care. The integrative health equity in primary care framework encompasses advancing system priorities but incorporates a focus on IGMV, recognizing that intersectionality, mental accounting, and choice architecture should be taken into consideration. The framework promotes the inclusion of nonpharmacological integrative approaches such as mindfulness meditation for individual or group behavioral integration at the primary care level to meet both their primary and behavioral health needs in one location to reduce barriers to care, including but not limited to transportation to multiple locations.

At the center of the conceptual framework, patients have access to both their PCP and behaviorist for longer periods of time, and the practitioners likewise have the opportunity to observe and coach patients in both individual and group settings. Peers also have the opportunity to learn, support, encourage, and meditate in a group together. The contextual framework may be clinically useful because the current health systems that use IGMV do not have a known documented framework for contextualizing IGMVs in the PCMH.

Unanticipated Findings

All Black IGMV subjects demonstrated a reduction in ED utilization and reduced anxiety symptoms versus usual care. This was not anticipated, and while the sample was too small to make any comparisons or conclusions with other racial/ethnic groups, it does raise an area of potential further investigation. Additionally, all non-Whites had a drop in anxiety symptom severity regardless of type of mental health service, while Whites had an increase in anxiety symptom severity regardless of type of mental health service. Another unexpected finding was that only 10% of the sample was still consuming prescribed BZDs, with a tapering trend. This raises questions about nonprescribed use. Lastly, it was interesting to note that patients who attended IGMV were using usual care as well, increasing their interaction with their PCMH.

Positive Social Change

The results of my study effect positive social change because the results provide new information on longitudinal ED utilization, BZD tapering, and anxiety symptom severity changes for patients with an anxiety disorder. Despite the rise of anxiety over the past decade, there has been limited research on patients with anxiety in primary care. Creating a framework in this dissertation also gave a lens on integrative mental healthcare for a racially/ethnically diverse safety-net population that does not currently exist. The potential positive social change impact would be greater access to integrative mental health care for low-income adults, improved behavioral health outcomes, and reduction of nonemergent use of the ED.

Areas of Future Research

Regarding ED utilization, a prospective study on the implementation of a yoga-based IGMV to investigate whether adding the movement component to mindfulness meditation would improve health and cost outcomes would be informative to this area of research. Regarding BZD use, a national online anonymous survey in English and Spanish to assess nonprescription BZD use would contribute to data needed to address the magnitude of undocumented use and abuse of BZDs. Additionally, a prospective quantitative or mixed method study of IGMV comparing cost and health outcomes of three different dyad cofacilitators (with psychologists)—physicians versus nurse practitioners versus nonallopathic practitioners for patients with anxiety—would guide implementation for health systems exploring incorporation of the IGMV model.

Lessons Learned

Lessons learned were three-fold. First, it is important to find a research partner. Often, retrospective analysis is completed on an existing dataset and not at a clinical site. Conducting a retrospective analysis of existing protected data at a remote site requires a dedicated onsite champion who has time, effort, and understanding of the research problem. I was fortunate to find such a person. The reality is that research is not done alone. Your committee, your mentors, and family are all there to support you in different ways.

Another lesson was to expect the unexpected. Every institution and its IRB have their own protocols and clearances. Multiple roadblocks, red tape, and compromises should be expected. Even if they approve collection of data that answers your questions

and understand the kind of data that is needed, there may be local processes in place that block getting the specific data required to answer the questions.

Finally, the process, not the outcome, is what is most important. While a certain outcome might be anticipated, the results may not support the theories or hypotheses. Good research reveals what is there and also illuminates concerns with study design. There may be temptations to change a question, collect more data than proposed, or present data that are not related to the research question, but this is not proper or ethical research.

Conclusion

The journey of research into real-world patient experiences via their personal health history data was exciting and overwhelming. Entering into a world of numbers and labels, without names and faces, was daunting but at the same time reduced bias and assumptions. Research on a diverse sample revealed how different racial/ethnic low-income adults access the system and benefit from behavioral health integration in primary care, added to the evidence base, and raised additional questions around couching integrative health approaches in primary care to advance health equity and behavioral health outcomes.

References

Adams, D. J., Remick, R. A., Davis, J. C., Vazirian, S., & Khan, K. M. (2015). Exercise as medicine—The use of group medical visits to promote physical activity and treat chronic moderate depression: A preliminary 14-week pre–post study. *BMJ Open Sport & Exercise Medicine*, *1*(1), Article e000036. https://doi.org/10.1136/bmjsem-2015-000036

Agarwal, P., Bias, T. K., Madhavan, S., Sambamoorthi, N., Frisbee, S., & Sambamoorthi, U. (2016). Factors associated with emergency department visits: A multistate analysis of adult fee-for-service Medicaid beneficiaries. *Health Services Research and Managerial Epidemiology*, *3*(3). https://doi.org/10.1177/2333392816648549

Agency for Healthcare Research and Quality. (2018). *Strategy 6M: Group visits*. https://www.ahrq.gov/cahps/qualityimprovement/improvement-guide/6strategies-for-improving/access/strategy6m-groupvisits.html

Alford, D. P., German, J. S., Samet, J. H., Cheng, D. M., Lloyd-Travaglini, C. A., & Saitz, R. (2016). Primary care patients with drug use report chronic pain and self-medicate with alcohol and other drugs. *Journal of General InternalMedicine*, *31*(5), 486-491. https://doi.org/10.1007/s11606-016-3586-5

Alonso, J., Liu, Z., Evans-Lacko, S., Sadikova, E., Sampson, N., Chatterji, S., Abdulmalik, J., Aguilar-Gaxiola, S., Al-Hamzawi, A., Andrade, L. H., & Bruffaerts, R. (2018). Treatment gap for anxiety disorders is global: Results of the world mental health surveys in 21 countries. *Depression and Anxiety*, *35*(3), 195-208. https://doi.org/10.1002/da.22711

Altman, S., & Lewin, M. E. (Eds.). (2000). *America's health care safety-net: Intact but endangered*. National Academies Press. https://elibrary.pcu.edu.ph:9000/digi/NA02/2000/9612.pdf

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.).

Anxiety and Depression Association of America. (2020). *Facts & statistics on anxiety disorders in the US.* https://adaa.org/about-adaa/press-room/facts-statistics

Balasubramanian, B. A., Cohen, D. J., Jetelina, K. K., Dickinson, L. M., Davis, M., Gunn, R., Gowen, K., deGruy, F. K., Miller, B. F., & Green, L. A. (2017). Outcomes of integrated behavioral health with primary care. *The Journal of the American Board of Family Medicine, 30*(2), 130-139. https://doi.org/10.3122/jabfm.2017.02.160234

Bandelow, B., Michaelis, S., & Wedekind, D. (2017). Treatment of anxiety disorders. *Dialogues in Clinical Neuroscience*, *19*(2), 93-107. https://doi.org/10.31887/DCNS.2017.19.2/bbandelow

Barberis, N. (2018). Richard Thaler and the rise of behavioral economics. *The Scandinavian Journal of Economics*, *120*(3), 661-684. https://doi.org/10.1111/sjoe.12313

Barnby, J. M., Bailey, N. W., Chambers, R., & Fitzgerald, P. B. (2015). How similar are the changes in neural activity resulting from mindfulness practice in contrast to spiritual practice? *Consciousness and Cognition*, *36*, 219-232. https://doi.org/10.1016/j.concog.2015.07.002

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: Care, health, and cost. *Health Affairs*, *27*(3), 759-769. https://doi.org/10.1377/hlthaff.27.3.759

Blackwelder, R., & Bragg, S. (2016). Anxiety disorders: A blended treatment approach. *The International Journal of Psychiatry in Medicine*, *51*(2), 137-144. https://doi.org/10.1177%2F0091217416636575

Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: Care of the patient requires care of the provider. *The Annals of Family Medicine*, *12*(6), 573-576. https://doi.org/10.1370/afm.1713

Bottaccioli, F., Carosella, A., Cardone, R., Mambelli, M., Cemin, M., D'Errico, M. M., Ponzio, E., Bottaccioli, A.G., & Minelli, A. (2014). Brief training of psychoneuroendocrinoimmunology-based meditation (PNEIMED) reduces stress symptom ratings and improves control on salivary cortisol secretion under basal and stimulated conditions. *Explore*, *10*(3), 170-179. https://doi.org/10.1016/j.explore.2014.02.002

Bouvier, B. A., Waye, K. M., Elston, B., Hadland, S. E., Green, T. C., & Marshall, B. D. (2018). Prevalence and correlates of benzodiazepine use and misuse among young adults who use prescription opioids non-medically. *Drug and Alcohol Dependence, 183*, 73-77. https://doi.org/10.1016/j.drugalcdep.2017.10.023

Brandmeyer, T., & Delorme, A. (2020). Meditation and the wandering mind: A theoretical framework of underlying neurocognitive mechanisms. *Perspectives on Psychological Science*, *16*(1), 39-66. https://doi.org/10.1177%2F1745691620917340

Breedlove, S. M., & Watson, N. V. (2018). *Behavioral neuroscience*. Sinauer Associates, Incorporated, Publishers.

Bruns, E. B., Befus, D., Wismer, B., Knight, K., Adler, S. R., Leonoudakis-Watts, K., Thompson-Lastad, A. & Chao, M. T. (2019). Vulnerable patients' psychosocial experiences in a group-based, integrative pain management program. *The Journal of Alternative and Complementary Medicine*, *25*(7), 719-726. https://doi.org/10.1089%2Facm.2019.0074

Bucay-Harari, L., Page, K. R., Krawczyk, N., Robles, Y. P., & Castillo-Salgado, C. (2020). Mental health needs of an emerging Latino community. *The Journal of Behavioral Health Services & Research*, 1-11. https://doi.org/10.1007/s11414-02009688-3

Buche, J., Singer, P. M., Grazier, K., King, E., Maniere, E., & Beck, A. J. (2017). Primary care and behavioral health workforce integration: Barriers and best practices. *Behavioral Health Workforce Research Center*, *1*(1), 1-16. https://doi.org/10.1186/s12875-020-01307-6

Bukar, N. K., Eberhardt, L. M., & Davidson, J. (2019). East meets west in psychiatry: Yoga as an adjunct therapy for management of anxiety. *Archives of Psychiatric Nursing*, *33*(4), 371-376. https://behavioralhealthworkforce.org/wpcontent/uploads/2017/02/FA2P3_Team-based-Care-Case-Studies_Full-Report.pdf

Bureau of Labor Statistics (2020). *May 2020 Occupation Profiles*. Retrieved on July 17, 2021 https://www.bls.gov/oes/current/oes_stru.htm

Burnett-Zeigler, I., Schuette, S., Victorson, D., & Wisner, K. L. (2016). Mind–body approaches to treating mental health symptoms among disadvantaged populations: A comprehensive review. *The Journal of Alternative and Complementary Medicine*, *22*(2), 115-124. https://doi.org/10.1089/acm.2015.0038

Camacho, A., Gonzalez, P., Buelna, C., Emory, K. T., Talavera, G. A., Castaneda, S. F., Espinoza, R. A., Howard, A. G., Perreira, K. M., Isasi, C. R., & Daviglus, M. L. (2015). Anxious-depression among Hispanic/Latinos from different backgrounds: Results from the Hispanic community health study/study of Latinos (HCHS/SOL). *Social Psychiatry and Psychiatric Epidemiology*, *50*(11),1669-1677. https://doi.org/g/10.1007%2Fs00127-015-1120-4

Chao, M. T., Abercrombie, P. D., Santana, T., & Duncan, L. G. (2015). Applying the RE AIM framework to evaluate integrative medicine group visits among diverse women with chronic pelvic pain. *Pain Management Nursing*, *16*(6), 920–929. https://doi.org/10.1016/j.pmn.2015.07.007

Chao, M. T., Hurstak, E., Leonoudakis-Watts, K., Sidders, F., Pace, J., Hammer, H., & Wismer, B. (2019). Patient-reported outcomes of an integrative pain management program implemented in a primary care safety net clinic: A quasi experimental study. *Journal of General Internal Medicine*, *34*(7), 1105-1107. https://doi.org/10.1007/s11606-019-04868-0

Charlot, M., D'Amico, S., Luo, M., Gemei, A., Kathuria, H., Gardiner, P. (2019) Feasibility and acceptability of mindfulness-based group visits for smoking cessation in low socioeconomic status and minority smokers with cancer. *Journal*

of Alternative and Complementary Medicine, 25(7):762-769. https://doi.org/10.1089/acm.2019.0016.PMID:31314565

Chisholm, D., Sweeny, K., Sheehan, P., Rasmussen, B., Smit, F., Cuijpers, P., & Saxena, S. (2016). Scaling-up treatment of depression and anxiety: A global return on investment analysis. *The Lancet Psychiatry*, *3*(5), 415-424. https://doi.org/10.1016/S2215-0366(16)30024-4

Clarke, T. C., Black, L. I., Stussman, B. J., Barnes, P. M., & Nahin, R. L. (2015). Trends in the use of complementary health approaches among adults: United States, 2002-2012. *National Health Statistics Reports*, (79), 1. https://www-ncbi-nlmnih-gov.ezp.waldenulibrary.org/pmc/articles/PMC4573565/

Cook, B. L., Trinh, N. H., Li, Z., Hou, S. S. Y., & Progovac, A. M. (2017). Trends in racial-ethnic disparities in access to mental health care, 2004–2012. *Psychiatric Services, 68*(1), 9-16. https://doi.org/10.1176/appi.ps.201500453

Cornelio-Flores, O., Lestoquoy, A. S., Abdallah, S., DeLoureiro, A., Lorente, K., Pardo, B., Olunwa, J., & Gardiner, P. (2018). The Latino integrative medical group visit as a model for pain reduction in underserved Spanish speakers. *The Journal of Alternative and Complementary Medicine*, *24*(2), 125-131. https://doi.org/10.1089/acm.2017.0132

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of anti-discrimination doctrine, feminist theory and antiracist politics. *The University of Chicago Legal Forum 139*, 139–167. https://philpapers.org/archive/CREDTI.pdf?ncid=txtlnkusaolp00000603

Daitch, C. (2018). Cognitive behavioral therapy, mindfulness, and hypnosis as treatment methods for generalized anxiety disorder. *American Journal of Clinical Hypnosis*, *61*(1), 57-69. https://doi.org/10.1080/00029157.2018.1458594

Dark, T., Flynn, H. A., Rust, G., Kinsell, H., & Harman, J. S. (2017). Epidemiology of emergency department visits for anxiety in the United States: 2009-2011. *Psychiatric Services*, *68*(3), 238-244. https://doi.org/10.1176/appi.ps.201600148

DHCS. (2019). *Stay Healthy Assessment Questionnaires*. https://www.dhcs.ca.gov/formsandpubs/forms/Pages/StayingHealthyAssessmenQuestionnaires.aspx#formh

Dresner, D., Gergen Barnett, K., Resnick, K., Laird, L. D., & Gardiner, P. (2016). Listening to their words: A qualitative analysis of integrative medicine group visits in an urban underserved medical setting. *Pain Medicine, 17*(6), 1183-1191. https://doi.org/10.1093/pm/pnw030

Driot, D., Bismuth, M., Maurel, A., Soulie-Albouy, J., Birebent, J., Oustric, S., & Dupouy, J. (2017). Management of first depression or generalized anxiety disorder episode in adults in primary care: A systematic metareview. *La Presse Médicale*, *46*(12), 1124-1138. https://doi.org/10.1016/j.lpm.2017.10.010

Driot, D., Ouhayoun, S., Perinelli, F., Grézy-Chabardès, C., Birebent, J., Bismuth, M., & Dupouy, J. (2019). Non-drug and drug alternatives to benzodiazepines for insomnia in primary care: Study among GPs and pharmacies in a southwest region of France. *Therapies*, *74*(5), 537-546. https://www.elsevier.com/openaccess/userlicense/1.0/

Edelman, D., McDuffie, J. R., Oddone, E., Gierisch, J. M., Nagi, A., & Williams, J. J. (2012). *Shared medical appointments for chronic medical conditions: A systematic review*. Department of Veterans Affairs. https://europepmc.org/article/nbk/nbk99785

Elbel, B., Gillespie, C., & Raven, M. C. (2014). Presenting quality data to vulnerable groups: Charts, summaries or behavioral economic nudges? *Journal of Health Services Research & Policy*, *19*(3), 161-168. https://doi.org/10.1177%2F1355819614524186

Ernst, F. R., Mills, J. R., Berner, T., House, J., & Herndon, C. (2015). Opioid medication practices observed in chronic pain patients presenting for all-causes to emergency departments: Prevalence and impact on health care outcomes. *Journal of Managed Care & Specialty Pharmacy*, *21*(10), 925-936. https://www.jmcp.org/doi/pdf/10.18553/jmcp.2015.21.10.925

Farber, E. W., Ali, M. K., Van Sickle, K. S., & Kaslow, N. J. (2017). Psychology in patient-centered medical homes: Reducing health disparities and promoting health equity. *American Psychologist*, *72*(1), 28. https://doi.org/10.1037/a0040358

Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses, *Behavior Research Methods, 41* (4), 1149-1160. https://doi.org/10.3758/BRM.41.4.1149

Fluyau, D., Revadigar, N., & Manobianco, B. E. (2018). Challenges of the pharmacological management of benzodiazepine withdrawal, dependence, and

discontinuation. *Therapeutic Advances in Psychopharmacology*, *8*(5), 147-168. https://doi.org/10.1037/a0040358

Furbish, S. M., Kroehl, M. E., Loeb, D. F., Lam, H. M., Lewis, C. L., Nelson, J., Chow, Z., & Trinkley, K. E. (2017). A pharmacist–physician collaboration to optimize benzodiazepine use for anxiety and sleep symptom control in primary care. *Journal of Pharmacy Practice*, *30*(4), 425-433. https://doi.org/10.1177%2F0897190016660435

Gardiner, P., Luo, M., D'Amico, S., Gergen-Barnett, K., White, L. F., Saper, R., Mitchell, S., & Liebschutz, J. M. (2019). Effectiveness of integrative medicine group visits in chronic pain and depressive symptoms: A randomized controlled trial. *PloS One*, *14*(12). https://doi.org/10.1371/journal.pone.0225540

Gardiner, P., Dresner, D., Barnett, K. G., Sadikova, E., & Saper, R. (2014). Medical group visits: A feasibility study to manage patients with chronic pain in an underserved urban clinic. *Global Advances in Health and Medicine*, *3*(4), 20-26. https://doi.org/10.7453/gahmj.2014.011

Gardiner, P., Lestoquoy, A. S., Gergen-Barnett, K., Penti, B., White, L. F., Saper, R., Fredman, L., Stillman, S., Negash, N. L., Adelstein, P., & Brackup, I. (2017). Design of the integrative medical group visits randomized control trial for underserved patients with chronic pain and depression. *Contemporary Clinical Trials, 54,* 25-35. https://doi.org/10.1016/j.cct.2016.12.013

Gareau, S., Lòpez-De Fede, A., Loudermilk, B. L., Cummings, T. H., Hardin, J. W., Picklesimer, A. H., Crouch, E., & Covington-Kolb, S. (2016). Group prenatal care

results in Medicaid savings with better outcomes: A propensity score analysis of centering pregnancy participation in South Carolina. *Maternal and Child Health Journal, 20*(7), 1384-1393. https://doi.org/10.1007/s10995-016-1935-y

Gates, K., Petterson, S., Wingrove, P., Miller, B., & Klink, K. (2016). You can't treat what you don't diagnose: An analysis of the recognition of somatic presentations of depression and anxiety in primary care. *Families, Systems, & Health*, *34*(4), 317. https://doi.org/10.1037/fsh0000229

Geller, J. S. (2019). Group medical visits: Introducing the "group inclusion effect" and key principles for maximization. *The Journal of Alternative and Complementary Medicine*, *25*(7), 673-674. https://doi.org/10.1089/acm.2019.0012

Geller, J. S., Kulla, J., & Shoemaker, A. (2015). Group medical visits using an empowerment-based model as treatment for women with chronic pain in an underserved community. *Global Advances in Health and Medicine, 4(*6), 27-31. https://doi.org/10.7453/gahmj.2015.057

Geller, J. S., Orkaby, A., & Cleghorn, G. D. (2011). Impact of a group medical visit program on Latino health-related quality of life. *EXPLORE: The Journal of Science and Healing*, *7*(2), 94-99. https://doi.org/10.1016/j.explore.2010.12.005

Gkiouleka, A., Huijts, T., Beckfield, J., & Bambra, C. (2018). Understanding the micro and macro politics of health: Inequalities, intersectionality & institutions—A research agenda. *Social Science & Medicine*, *200*, 92-98. https://doi.org/10.7453/gahmj.2015.057

Goodwin, R. D., Weinberger, A. H., Kim, J. H., Wu, M., & Galea, S. (2020). Trends in anxiety among adults in the United States, 2008–2018: Rapid increases among young adults. *Journal of Psychiatric Research, 130*, 441-446. https://doi.org/10.1016%2Fj.jpsychires.2020.08.014

Goyal, M., Singh, S., Sibinga, E. M., Gould, N. F., Rowland-Seymour, A., Sharma, R., Berger, Z., Sleicher, D., Maron, D. D., Shihab, H. M., & Ranasinghe, P. D. (2014). Meditation programs for psychological stress and well-being: A systematic review and meta-analysis. *JAMA Internal Medicine*, *174*(3), 357-368. https://doi.org/10.1001/jamainternmed.2013.13018

Guo, M., Li, S., Liu, J., & Sun, F. (2015). Family relations, social connections, and mental health among Latino and Asian older adults. *Research on Aging*, *37*(2), 123-147. https://doi.org/10.1177/0164027514523298

Hamilton, M. A. X. (1959). The assessment of anxiety states by rating. *British Journal of Medical Psychology, 32(*1), 50-55. https://doi.org/10.1111/j.20448341.1959.tb00467.x

Hargraves, D., White, C., Frederick, R., Cinibulk, M., Peters, M., Young, A., & Elder, N. (2017). Implementing SBIRT (Screening, Brief Intervention and Referral to Treatment) in primary care: Lessons learned from a multi-practice evaluation portfolio. *Public Health Reviews*, *38*(1), 1-11. https://doi.org/10.1186/s40985-0170077-0

Hill, C. M., Williams, E. C., & Ornelas, I. J. (2019). Help wanted: Mental health and social stressors among Latino day laborers. *American Journal of Men's Health*, *13*(2). https://doi.org/10.1177/1557988319838424

Housden, L., Browne, A. J., Wong, S. T., & Dawes, M. (2017). Attending to power differentials: How NP-led group medical visits can influence the management of chronic conditions. *Health Expectations*, *20*(5), 862-870. https://doi.org/10.1111/hex.12525

Hull, A., Brooks Holliday, S., Eickhoff, C., Sullivan, P., Courtney, R., Sossin, K., Adams, A., & Reinhard, M. (2019). Veteran participation in the integrative health and wellness program: Impact on self-reported mental and physical health outcomes. *Psychological Services, 16*(3), 475–483. https://doi.org/10.1037/ser0000192

Iturralde, E., Chi, F. W., Grant, R. W., Weisner, C., Van Dyke, L., Pruzansky, A., Bui, S., Madvig, P., Pearl, R., & Sterling, S. A. (2019). Association of anxiety with high -cost health care use among individuals with type 2 diabetes. *Diabetes Care*, *42*(9), 1669-1674. https://care.diabetesjournals.org/content/diacare/42/9/1669.full.pdf

Izaguirre-Riesgo, A., Menéndez-González, L., & Pérez, F. A. (2020). Effectiveness of a nursing program in self-care and mindfulness, for the approach of common mental disorder, in primary care. *Primary Care, 52* (6), 400-409. https://doi.org/10.1016/j.aprim.2019.05.015

Jaber, R., Braksmajer, A., & Trilling, J. S. (2006). Group visits: a qualitative review of current research. *The Journal of the American Board of Family Medicine*, *19*(3), 276-290. https://www.jabfm.org/content/jabfp/19/3/276.full.pdf

James, T. D., Smith, P. C., & Brice, J. H. (2010). Self-reported discharge instruction adherence among different racial groups seen in the emergency department. *Journal of the National Medical Association, 102*(10), 931-6. https://doi.org/10.1016/S0027-9684(15)30712-4

Jayatilake, P. (2017). Mindfulness, relaxation and other stress relief techniques. *Journal of Community and Public Health Nursing, 3:*4. https://doi.org/10.4172/24719846.1000191

Johnson, P. J., Jou, J., Rockwood, T. H., & Upchurch, D. M. (2019). Perceived benefits of using complementary and alternative medicine by race/ethnicity among midlife and older adults in the United States. *Journal of Aging and Health*, *31*(8), 1376 1397. https://doi.org/10.1177%2F0898264318780023

Jordan, K., Lofton, S., & Richards, E. A. (2021). Strategies for embedding population health concepts into nursing education. *Nursing Forum*, *56*(1), 208-213. https://onlinelibrary

Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8(*2), 163-190.

Kakareka, R., Stone, T. A., Plsek, P., Imamura, A., & Hwang, E. (2019). Fresh and savory: Integrating teaching kitchens with shared medical appointments. *The*

Journal of Alternative and Complementary Medicine, *25*(7), 709-718. https://doi.org/10.1089/acm.2019.0091

Kessler, R., Miller, B. F., Kelly, M., Graham, D., Kennedy, A., Littenberg, B., MacLean, C. D., Van Eeghen, C., Scholle, S. H., Tirodkar, M. & Morton, S. (2014). Mental health, substance abuse, and health behavior services in patient-centered medical homes. *The Journal of the American Board of Family Medicine*, *27*(5), 637-644. https://www.jabfm.org/content/jabfp/27/5/637.full.pdf

Kuppusamy, M., Kamaldeen, D., Pitani, R., Amaldas, J., Ramasamy, P., Shanmugam, P., & Vijayakumar, V. (2020). Effects of yoga breathing practice on heart rate variability in healthy adolescents: A randomized controlled trial. *Integrative Medicine Research*, *9*(1), 28-32. https://doi.org/10.1016/j.imr.2020.01.006

Landolt, S., Rosemann, T., Blozik, E., Brüngger, B., & Huber, C. A. (2021). Benzodiazepine and Z-drug use in Switzerland: Prevalence, prescription patterns and association with adverse healthcare outcomes. *Neuropsychiatric Disease and Treatment, 17,* 1021. http://doi.org/10.2147/NDT.S290104

Lavoie, J. G., Wong, S. T., Chongo, M., Browne, A. J., MacLeod, M. L., & Ulrich, C. (2013). Group medical visits can deliver on patient-centered care objectives: Results from a qualitative study. *BMC Health Service Research, 13*(1), 155. https://doi.org/10.1186/1472-696313-155.pdf

Lestoquoy, A. S., Laird, L. D., Mitchell, S., Gergen-Barnett, K., Negash, N. L., McCue, K., Enad, R., & Gardiner, P. (2017). Living with chronic pain: Evaluating patient experiences with a medical group visit focused on mindfulness and non-

pharmacological strategies. *Complementary Therapies in Medicine*, *35*, 33-38. https://doi.org/10.1016/j.ctim.2017.09.002

Linman, S., Benjenk, I., & Chen, J. (2019). The medical home functions of primary care practices that care for adults with psychological distress: A cross-sectional study. *BMC Health Services Research*, *19*(1), 21. https://doi.org/10.1186/s12913018-3845-8

Lutz, D. J., Gipson, D. R., & Robinson, D. N. (2019). Yoga as an adjunct for treatment of substance abuse. *Practice Innovations*, *4*(1), 13. https://doi.org/10.1037/pri0000079

Lynch, T., Ryan, C., Hughes, C. M., Presseau, J., van Allen, Z. M., Bradley, C. P., & Cadogan, C. A. (2020). Brief interventions targeting long□term benzodiazepine and Z□drug use in primary care: A systematic review and meta□analysis. *Addiction*, 115(9), 1618-1639. https://doi.org/10.1111/add.14981

Martinez-Hume, A. C., Baker, A. M., Bell, H. S., Montemayor, I., Elwell, K., & Hunt, L. M. (2017). "They treat you a different way:" Public insurance, stigma, and the challenge to quality health care. *Culture, Medicine, and Psychiatry, 41*(1), 161 180.

Mehl-Madrona, L., Mainguy, B., & Plummer, J. (2016). Integration of complementary and alternative medicine therapies into primary-care pain management for opiate reduction in a rural setting. *The Journal of Alternative and Complementary Medicine, 22*(8), 621-626. https://doi.org/10.1089/acm.2015.0212

Miller, J. J., Fletcher, K., & Kabat-Zinn, J. (1995). Three-year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders. *General Hospital Psychiatry*, *17*(3), 192-200.

Moraes, L. J., Miranda, M. B., Loures, L. F., Mainieri, A. G., & Mármora, C. H. C. (2018). A systematic review of psychoneuroimmunology-based interventions. *Psychology, Health & Medicine*, *23*(6), 635-652. https://doi.org/10.1080/13548506.2017.1417607

Moreno, C. A. S., Castillo, M. M. A., Torres, R. A. B., & Ocañas, L. G. (2018). Consumption of medical drugs, over-the-counter medications and alcohol in elderly/consumption of medical drugs, over-the-counter medications and alcohol. *Journal Health NPEPS*, *3*(2), 583-600. https://periodicos.unemat.br/index.php/jhnpeps/article/view/2967

Navarro-Haro, M. V., Modrego-Alarcón, M., Hoffman, H. G., López-Montoyo, A., Navarro-Gil, M., Montero-Marin, J., Garcia-Palacios, A., Borao, L. & García Campayo, J. (2019). Evaluation of a mindfulness-based intervention with and without virtual reality dialectical behavior Therapy® mindfulness skills training for the treatment of generalized anxiety disorder in primary care: a pilot study. *Frontiers in Psychology*, *10*, 55. https://doi.org/10.3389/fpsyg.2019.00055

Nelson, A., Ayers, E., Sun, F., & Zhang, A. (2020). Culturally adapted psychotherapeutic interventions for latino depression and anxiety: A meta-analysis. *Research on Social Work Practice*, *30*(4), 368-381. https://doi.org/10.1177/1049731519899991

NIH (2017). National Institute of Mental Health. Mental illness health statistics. https://www.nimh.nih.gov/health/statistics/mental-illness.shtml

Noffsinger, E. B. (2012). *The ABCs of group visits: An implementation manual for your practice.* Springer Science and Business Media. https://doi.org/10.1007/978-146143526-6

Ogle, Z., Koen, L., & Niehaus, D. J. (2018). The development of the visual screening tool for anxiety disorders and depression: Addressing barriers to screening for depression and anxiety disorders in hypertension and/or diabetes. *African Journal of Primary Health Care & Family Medicine*, *10*(1), 1-6. https://doi.org/10.4102/phcfm.v10il.1721

Oldenhof, E., Mason, T., Anderson-Wurf, J., & Staiger, P. K. (2021). Role of the prescriber in supporting patients to discontinue benzodiazepines: A qualitative study. *British Journal of General Practice, 71*(708), e517-e527. https://doi.org/10.3399/BJGP.2020.1062

Ornish D., Brown S. E., Scherwitz L. W., Billings J. H., Armstrong W. T., Ports, T. A., McLanahan, S. M., Kirkeeide, R. L., Gould, K. L. & Brand, R. J. (1990) Can lifestyle changes reverse coronary heart disease? The lifestyle heart trial. *Lancet 336*:129–133. https://www.chrisjbradshaw.com/wpcontent/uploads/2016/01/Can-lifestyle-changes-reverse-coronary-heart-diseaseOrnish-Lancet-1990.pdf

Orzechowski, N. M., Lloyd, D., Tuthill, K., Puttgen, J., & Bergeron, R. (2016). Use of a shared medical appointment for patients with fibromyalgia in a rural, academic

medical center: A process improvement initiative for the development of a new care model. *Arthritis and Rheumatology* (68).

Ott, R. L., & Longnecker, M. T. (2015). *An introduction to statistical methods and data analysis* (7th ed.). Cengage Learning.

Parikh, M., Rajendran, I., D'Amico, S., Luo, M., & Gardiner, P. (2019). Characteristics and components of medical group visits for chronic health conditions: A systematic scoping review. *The Journal of Alternative and Complementary Medicine*, *25*(7), 683-698. https://doi.org/10.1089/acm.2018.0524

Parker, E. L., Banfield, M., Fassnacht, D. B., Hatfield, T., & Kyrios, M. (2021). Contemporary treatment of anxiety in primary care: A systematic review and meta-analysis of outcomes in countries with universal healthcare. *BMC Family Practice, 22*(1), 1-15. https://doi.org/10.1186/s12875-021-01445-5

Petersen, M., & la Cour, P. (2016). Mindfulness—What works for whom? Referral, feasibility, and user perspectives regarding patients with mixed chronic pain. *The Journal of Alternative and Complementary Medicine, 22*(4), 298-305.

Pilkonis, P. A., Choi, S. W., Reise, S. P., Stover, A. M., Riley, W. T., & Cella, D. (2011). Item banks for measuring emotional distress from the patient-reported outcomes measurement information system (PROMIS®): Depression, anxiety, and anger. *Assessment*, *18*(3), 263–283. https://doi.org/10.1177/1073191111411667

Platt, L. M., Whitburn, A. I., Platt-Koch, A. G., & Koch, R. L. (2016). Nonpharmacological alternatives to benzodiazepine drugs for the treatment of anxiety in outpatient populations: A literature review. *Journal of Psychosocial*

Nursing and Mental Health Services, 54(8), 35-42. https://doi.org/10.3928/0279369520160725-07

Pruitt, R., Lemanski, A., & Carroll, A. (2018). Herbal supplements: Research findings and safety. *The Nurse Practitioner*, *43*(5), 32-37.

[Quadruple Aim]. Retrieved March 31, 2020 from https://www.google.com/search?q=quadruple+aim+free+stock&tbm=isch&sour=univ&sa=X&ved=2ahUKEwiw2JTyjcboAhVsc98KHa7NCt4Q7Al6BAgGEB&biw=1164&bih=631#imgrc=HffB1pFIvfPxmM

Ramos, K., Cortes, J., Wilson, N., Kunik, M. E., & Stanley, M. A. (2017). Vida calma: CBT for anxiety with a Spanish-speaking Hispanic adult. *Clinical Gerontologist*, *40*(3), 213-219. https://doi.org/10.1080/07317115.2017.1292978

Rasmussen, A. F., Poulsen, S. S., Oldenburg, L. I. K., & Vermehren, C. (2021). The Barriers and facilitators of different stakeholders when deprescribing benzodiazepine receptor agonists in older patients—A systematic review. *Metabolites, 11*(4), 254. https://doi.org/10.3390/metabo11040254

Ray, A., Gulati, K., & Rai, N. (2017). Vitamins and hormones. In Gerald Litwack (Ed), *Stress, anxiety, and immunomodulation: A Pharmacological Analysis.* (pp. 1-25). Academic Press. https://doi.org/10.1016/bs.vh.2016.09.007

Remick, R. A., & Remick, A. K. (2014). Do patients really prefer individual outpatient follow-up visits, compared with group medical visits?. *The Canadian Journal of Psychiatry*, *59*(1), 50-53. https://doi.org/10.1177%2F070674371405900109

Richardson, L. D., Babcock Irvin, C., & Tamayo-Sarver, J. H. (2003). Racial and ethnic disparities in the clinical practice of emergency medicine. *Academic Emergency Medicine*, *10*(11), 1184-1188. https://doi.org/10.1197/S1069-6563(03)00487-1

Rising, S. S., & Quimby, C. H. (Eds.). (2016). *The CenteringPregnancy model: The power of group health care.* Springer Publishing Company.

Roth, I. J., Tiedt, M. K., Barnhill, J. L., Karvelas, K. R., Faurot, K. R., Gaylord, S., Gardiner, P., Miller, V. E. and Leeman, J. (2021). Feasibility of implementation mapping for integrative medical group visits. *The Journal of Alternative and Complementary Medicine, 27*(S1), S-71. https://doi.org/10.1089/acm.2020.0393

Rowley, R. A., Phillips, L. E., O'Dell, L., El Husseini, R., Carpino, S., & Hartman, S. (2016). Group prenatal care: A financial perspective. *Maternal and Child Health Journal, 20*(1), 1-10. https://doi.org/article/10.1007/s10995-015-1802-2

Ryan, D., Maurer, S., Lengua, L., Duran, B., & Ornelas, I. J. (2018). Amigas Latinas motivando el alma (ALMA): An evaluation of a mindfulness intervention to promote mental health among latina immigrant mothers. *The Journal of Behavioral Health Services & Research*, *45*(2), 280-291. https://doi.org/10.1007/s11414017-9582-7

Saeed, S. A., Cunningham, K., & Bloch, R. M. (2019). Depression and anxiety disorders: Benefits of exercise, yoga, and meditation. *American Family Physician*, *99*(10), 620-627. https://www.aafp.org/afp/2019/0515/afp20190515p620.pdf

Saha, S., Jarl, J., Gerdtham, U. G., Sundquist, K., & Sundquist, J. (2020). Economic evaluation of mindfulness group therapy for patients with depression, anxiety,

stress and adjustment disorders compared with treatment as usual. *British Journal of Psychiatry, 216*(4), 197–203. https://doi.org/10.1192/bjp.2018.247

Saluja, S., McCormick, D., Cousineau, M. R., Morrison, J., Shue, L., Joyner, K., & Hochman, M. (2019). Barriers to primary care after the affordable care act: A qualitative study of Los Angeles safety-net patients' experiences. *Health Equity*, *3*(1), 423-430. https://doi:10.1089/heq.2019.0056

SAMHSA (2019). Key substance use and mental health indicators in the United States: Results from the 2018 National Survey on Drug Use and Health (HHS Publication No. PEP19-5068, NSDUH Series H-54): Center for Behavioral Health Statistics and Quality. *Substance Abuse and Mental Health Services Administration*.

Sampaio, C. V. S., Lima, M. G., & Ladeia, A. M. (2016). Efficacy of healing meditation in reducing anxiety of individuals at the phase of weight loss maintenance: A randomized blinded clinical trial. *Complementary Therapies in Medicine*, *29*, 1-8. https://doi.org/10.1016/j.ctim.2016.08.005

Saper, R. B., Lemaster, C., Delitto, A., Sherman, K. J., Herman, P. M., Sadikova, E., Stevans, E., Keosaian, J. E., Cerrada, C. J., Femia, A. L., & Roseen, E. J. (2017). Yoga, physical therapy, or education for chronic low back pain: A randomized noninferiority trial. *Annals of Internal Medicine*, *167*(2), 85 94. https://doi.org/10.7326/M16-2579

Schmider, E., Ziegler, M., Danay, E., Beyer, L., & Bühner, M. (2010). Is it really robust? Reinvestigating the robustness of ANOVA against violations of the normal

distribution assumption. *Methodology, 6*(4), 147–151. https://doi.org/10.1027/1614-2241/a000016

Serrano, N., Prince, R., Fondow, M., & Kushner, K. (2018). Does the primary care behavioral health model reduce emergency department visits? *Health Services Research*, *53*(6), 4529-4542. https://doi.org/10.1111%2F1475-6773.12862

Shaw, S., Dresner, D., Gardiner, P., Barnett, K. G., & Saper, R. (2014). Integrative medicine group visits and emergency department utilization. *The Journal of Alternative and Complementary Medicine, 20*(5), A67-A68. https://doi.org/10.1089/acm.2014.5176.abstract

Simpson, S. A., Joesch, J. M., West, I. I., & Pasic, J. (2014). Who's boarding in the psychiatric emergency service?. *Western Journal of Emergency Medicine*, *15*(6), 669. https://doi.org/10.5811%2Fwestjem.2014.5.20894

Smith, B., Metzker, K., Waite, R., & Gerrity, P. (2015). Short-form mindfulness-based stress reduction reduces anxiety and improves health-related quality of life in an inner-city population. *Holistic Nursing Practice*, *29*(2), 70-77. https://doi.org/10.1097/HNP.0000000000000075

So, W. W. Y., Lu, E. Y., Cheung, W. M., & Tsang, H. W. H. (2020). Comparing mindful and non-mindful exercises on alleviating anxiety symptoms: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health, 17*(22), 8692. https://doi.org/10.3390/ijerph17228692

Spinelli, W. M. (2013). The phantom limb of the triple aim. *Mayo Clinic Proceedings (88)* 12, 1356-1357. https://doi.org/10.1016/j.mayocp.2013.08.017

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092-1097. https://doi.org/10.1001/archinte.166.10.1092

Stone, A., Rogers, D., Kruckenberg, S., & Lieser, A. (2012). Impact of the mental healthcare delivery system on California emergency departments. *Western Journal of Emergency Medicine*, *13*(1), 51. https://doi.org/10.5811%2Fwestjem.2011.6.6732

Strickland, C., Merrell, S., & Kirk, J. K. (2016). Centering pregnancy meeting the quadruple aim in prenatal care. *North Carolina Medical Journal, 77*(6), 394-397. https://www.ncmedicaljournal.com/content/ncm/77/6/394.full.pdf

Stussman, B. J., Nahin, R. R., Barnes, P. M., & Ward, B. W. (2019). U.S. physician recommendations to their patients about the use of complementary health approaches. *The Journal of Alternative and Complementary Medicine*, *26*(1), 25-33. https://doi.org/10.1089/acm.2019.0303

Sutton, J. P., Washington, R. E., Fingar, K. R., & Elixhauser, A. (2016). Characteristics of Safety-Net Hospitals, 2014: statistical brief#213. Agency for Healthcare Research and Quality. https://europepmc.org/article/nbk/nbk401306#free-full-text

Thaler, R. H. (2016). Behavioral economics: Past, present, and future. *American Economic Review*, *106*(7), 1577-1600. https://doi.org/10.1257/aer.106.7.1577

Thompson-Lastad, A. (2018). Group medical visits as participatory care in community health centers. *Qualitative Health Research*, *28*(7), 1065-1076. https://doi.org/10.1177%2F1049732318759528

Thompson-Lastad, A., Gardiner, P., & Chao, M. T. (2019). Integrative group medical visits: A national scoping survey of safety-net clinics. *Health Equity*, *3*(1), 1-8. https://doi.org/10.1089/heq.2018.0081

Thompson-Lastad, A., & Rubin, S. (2020). A crack in the wall: Chronic pain management in integrative group medical visits. *Social Science & Medicine*, *258*, 113061. https://doi.org/10.1016/j.socscimed.2020.113061

Toledo-Chávarri, A., Ramos-García, V., Torres-Castaño, A., Trujillo-Martín, M. M., Castro, W. P., Del Cura-Castro, I., Serrano-Aguilar, P., & Perestelo-Pérez, L. (2020). Framing the process in the implementation of care for people with generalized anxiety disorder in primary care: A qualitative evidence synthesis. *BMC Family Practice*, 21(1), 237. https://doi.org/10.1186/s12875-020-01307-6

Tolin, D. F., Lee, E., Levy, H. C., Das, A., Mammo, L., Katz, B. W., & Diefenbach, G. J. (2021). Psychophysiological assessment of stress reactivity and recovery in anxiety disorders. *Journal of Anxiety Disorders, 82*, 102426. https://doi.org/10.1016/j.janxdis.2021.102426

Travis, F., Valosek, L., Konrad IV, A., Link, J., Salerno, J., Scheller, R., & Nidich, S. (2018). Effect of meditation on psychological distress and brain functioning: A randomized controlled study. *Brain and Cognition*, *125*, 100-105. https://doi.org/10.1016/j.bandc.2018.03.011

Valaitis, R. K., Wong, S. T., MacDonald, M., Martin-Misener, R., O'Mara, L., Meagher Stewart, D., Isaacs, S., Murray, N., Baumann, A., Burge, F., Green, M., Kaczorowski, J., & Savage, R. (2020). Addressing quadruple aims through

primary care and public health collaboration: Ten Canadian case studies. *BMC Public Health, 20*(1), 1–16. https://doi.org/10.1186/s12889-020-08610-y

Van Hout, M. C., & Hearne, E. (2017). New psychoactive substances (NPS) on cryptomarket fora: An exploratory study of characteristics of forum activity between NPS buyers and vendors. *International Journal of Drug Policy*, *40*, 102 -110. https://doi.org/10.1016/j.drugpo.2016.11.007

Vaughan, E. M., Johnston, C. A., Arlinghaus, K. R., Hyman, D. J., & Foreyt, J. P. (2019). A narrative review of diabetes group visits in low-income and underserved settings. *Current Diabetes Reviews, 15*(5), 372-381. https://doi.org/10.2174%2F1573399814666181112145910

Vicens, C., Socias, I., Mateu, C., Leiva, A., Bejarano, F., Sempere, E., Basora, J., Palop, V. Mengual, M., Beltran, J. L., & Aragonès, E. (2011). Comparative efficacy of two primary care interventions to assist withdrawal from long term benzodiazepine use: A protocol for a clustered, randomized clinical trial. *BMC Family Practice*, *12*(1), 1-7. https://bmcfampract.biomedcentral.com/track/pdf/10.1186/1471-2296-12-23.pdf

Wadsworth, K. H., Archibald, T. G., Payne, A. E., Cleary, A. K., Haney, B. L., & Hoverman, A. S. (2019). Shared medical appointments and patient-centered experience: A mixed-methods systematic review. *BMC Family Practice*, *20*(1), 97. https://doi.org/10.1186/s12875-019-0972-1

Wang, X., Sundquist, K., Hedelius, A., Palmér, K., Memon, A. A., & Sundquist, J. (2017). Leukocyte telomere length and depression, anxiety and stress and

adjustment disorders in primary health care patients. *BMC Psychiatry*, *17*(1), 148. https://doi.org/10.1186/s12888-017-1308-0

Webster, R., Thompson, A. R., Norman, P., & Goodacre, S. (2017). The acceptability and feasibility of an anxiety reduction intervention for emergency department patients with non-cardiac chest pain. *Psychology, Health & Medicine*, *22*(1), 1-11. https://doi.org/10.1080/13548506.2016.1144891

Welsh, J. W., Tretyak, V., McHugh, R. K., Weiss, R. D., & Bogunovic, O. (2018). Adjunctive pharmacologic approaches for benzodiazepine tapers. *Drug and Alcohol Dependence*, *189*, 96-107. https://doi.org/10.1016/j.drugalcdep.2018.04.028

Whiteford, H. A., Ferrari, A. J., Degenhardt, L., Feigin, V., & Vos, T. (2015). Global burden of mental, neurological, and substance use disorders: An analysis from the Global Burden of Disease Study 2010. *Mental, Neurological, and Substance Use Disorders*, 29. https://doi.org/10.1371/journal.pone.0116820

Whittaker, W., Anselmi, L., Kristensen, S. R., Lau, Y. S., Bailey, S., Bower, P., Checkland, K., Elvey, R., Rothwell, K., Stokes, J., & Hodgson, D. (2016). Associations between extending access to primary care and emergency department visits: A difference-in-differences analysis. *PLoS medicine,13*(9), e1002113. https://doi.org/10.1371/journal.pmed.1002113

Williams, H., Simmons, L. A., & Tanabe, P. (2015). Mindfulness-based stress reduction in advanced nursing practice: a nonpharmacologic approach to health promotion,

chronic disease management, and symptom control. *Journal of Holistic Nursing, 33*(3), 247-259. http://jhn.sagepub.com

Wimberly, A. S., Engstrom, M., Layde, M., & McKay, J. R. (2018). A randomized trial of yoga for stress and substance use among people living with HIV in reentry. *Journal of Substance Abuse Treatment*, *94*, 97-104. https://doi.org/10.1016%2Fj.jsat.2018.08.001

Zeiss, A. M., & Karlin, B. E. (2008). Integrating mental health and primary care services in the department of veterans affairs health care system. *Journal of Clinical Psychology in Medical Settings*, *15*(1), 73-78. https://www.mirecc.va.gov/MIRECC/VISN16/docs/Zeiss_and_Karlin.pdf

Appendix A: Well-Being Screening—Adult Part I

Questions from the form are listed below. Asterisks (*) are notated on the questions related to this study for which data will be analyzed pre and post involvement in IGMV for the established year of the study. Responses to the first two questions are not at all, rarely, somewhat, and often. The remainder responses are yes and no.

1. In the past month, I have been unable to work or carry out my normal activities due to my physical health?
2. In the past month, I have been unable to work or carry out my normal activities due to sadness, anxiety, or stress? *
3. In the past year you have had 5 or more alcoholic drinks in one day (men) or 4 or more alcoholic drinks in one day (women)?
4. In the past year, have you used a recreational drug or used a prescription medication for nonmedical reasons?
5. Over the last 2 weeks, have you been bothered by little interest or pleasure in doing things?
6. Over the last 2 weeks, have you been bothered by feeling down, depressed, or hopeless?
7. Over the last 2 weeks, have you been bothered by feeling nervous, anxious or on edge? *
8. In the past month, have you been bothered by repeated, disturbing memories, thoughts, or images of a stressful experience from the past?*
9. Do you often have trouble sleeping? *

Appendix B: Sociodemographic and Stress-Related Chronic Comorbidities

	IGMV	Usual Care
Gender	Female 28, Male 15	Female 37, Male 5
Race/ethnicity: 1) Latino/a/x 2) American Indian or Alaskan Native 3) Asian American 4) Black or African American 5) Native Hawaiian or Pacific Islander 6) White 7) Middle Eastern 8) Other 9) Declined	1) 6 2) 1 3) 2 4) 7 5) 1 6) 23 7) 1 8) 1 9) 1 Total: 43	5 3 10 1 16 2 4 Total: 42
PTSD	25	21
Chronic Pain	43	42
Depression	22	16