

THE TREATMENT OF HEALTH ANXIETY IN PRIMARY CARE

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by

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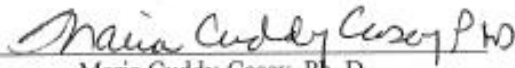
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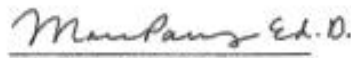
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DISSERTATION ABSTRACT
THE TREATMENT OF HEALTH ANXIETY IN PRIMARY CARE

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Health anxiety is a condition where there is anxious preoccupation with either having or acquiring a medical illness (American Psychiatric Association, 2013). While somatic symptoms are not a necessary criteria of health anxiety, it is not unusual for them to be present. Health anxiety creates significant distress not only in the affected individual, but also medical providers, specifically primary care physicians (PCPs), due to the patient's repetitive requests, frequent visits, and inability to be reassured (Fergus et al., 2019b). Patients with health anxiety are encountered more frequently in the primary care setting than in mental health clinics despite their evident need for mental health care (Holden-Perkins et al., 2000; Tyrer, 2018). Because patients with health anxiety do not respond to medical reassurance or negative diagnostic test results, they are persistent in their request for more testing and often seek more than one medical opinion (Scarella et al., 2019; Taylor & Brooks, 2013). PCPs are left puzzled on how to manage such patients (Almalki et al., 2016). While the literature on evidence-based treatments for health anxiety in a typical mental health care setting is broad (Newby, Megan et al., 2017; Weck et al., 2017), suggestions tailored toward PCPs in their fast-paced environment on treating

health anxiety are lacking (Almalki et al., 2016). There is evidence to suggest that the integration of mental health providers (MHPs) into primary care may improve access to mental health services by providing consultation to the PCP on how to approach such patients (Shepardson et al., 2018). While the MHP in a primary care office is intended to be the primary provider of mental health services, the PCP plays an important role in the treatment of patients with health anxiety. This review will discuss brief interventions and techniques useful for PCPs, including building a trusting relationship, providing psychoeducation, giving effective reassurance, performing initial exams, and exploring pharmacotherapy.

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Chapter I

Introduction

Patients with health anxiety often seek care from their PCPs before MHPs (Almalki et al., 2016). These visits result in short-term relief from the excessive health worries that plague them, as they usually receive a clean bill of health (Fergus et al., 2017). Many studies have demonstrated that those with high health anxiety are frequent users of the healthcare system, resulting in high costs and an increased patient case load for the PCP (Tyrer, 2018). The current literature on how to address these patients within the primary care setting is scarce.

Health anxiety is a psychological condition, formerly known as hypochondriasis, that is characterized by an intense worry that bodily sensations are a symptom of serious disease (Maass et al., 2020). The prevalence of health anxiety ranges from 3.4-6% in the general population in its mildest form but can quickly become severe if not detected and treated properly in the early stages (Fink et al., 2010; Tyrer & Tyrer, 2018). In the most recent edition of the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013), health anxiety is a hallmark symptom in both illness anxiety disorder (IAD) and somatic symptom disorder (SSD). While IAD and SSD are two distinct diagnoses, the symptom of health anxiety presents itself similarly in both disorders (Newby, Megan et al., 2017).

Successful treatment of health anxiety can lead to significant improvements in overall quality of life, socioemotional functioning, as well as a reduction in undue health care costs (Parikh et al., 2017; Smits et al., 2014). Several studies exist that provide evidence for the high health care utilization costs associated with health anxiety (Fink et

al., 2010; Tyrer, 2018). Additionally, individuals with severe health anxiety demonstrate increased rates of sick day and disability usage when compared to the general population (Eilenberg et al., 2015). Cognitive behavioral therapy (CBT) has been empirically supported by numerous studies to be the first line of psychological treatment for health anxiety (Maass et al., 2020; Taylor & Brooks, 2013; Tyrer, 2018). Other studies provide evidence that the use of psychotropic medication, such as selective-serotonin reuptake inhibitors (SSRI's), is necessary for more severe cases (Taylor & Brooks, 2013; Tyrer, 2018).

In sum, there is significant evidence to suggest the need for a guide to treat individuals with health anxiety in the primary care setting. This review will discuss the diagnostic features of health anxiety, prevalence of health anxiety in the primary care setting, and treatment recommendations for PCPs to consider when addressing individuals who present with health anxiety.

Statement of the Purpose

The purpose of this dissertation is two-fold: to provide a comprehensive literature review on health anxiety and health anxiety within the primary care setting, and to develop treatment recommendations for PCPs on how to best approach these patients in this setting.

Chapter II

Literature Review

Integration of Mental Health Services in Primary Care

One of the greatest arguments for the integration of mental health services into primary care is the inextricable link between mental and physical health. Though this has been common knowledge for decades, these concerns continue to be addressed by different healthcare systems (Rajesh et al., 2019). As such, there remains an inconsistent alliance between mental health and primary care.

Several shortcomings exist within the American healthcare system, including inconsistent quality of mental health services, inadequate access to care, and disparities for financially underprivileged individuals and individuals belonging to minority communities (Kilbourne et al., 2018). Kilbourne et al. (2018) asserted that while mental health cases are increasing over time, the quality of care for these individuals is not. In 2016, 11.8 million American adults reported that their mental health needs went unmet during that past year. Of those 11.8 million Americans, 38% reported that they could not afford treatment, 21% reported they did not know where to go for services, and 20% reported they did not have enough time to participate in treatment (Fink et al., 2010).

Participating in mental health treatment can also be a challenge for individuals who live in rural areas, are economically disadvantaged, and/or belong to historically underserved populations (James, 2006; Kilbourne et al., 2018). Moreover, racial minority groups such as African Americans, American Indians, and Alaskan Natives utilize mental health services at a substantially lower rate due to geographical inaccessibility, economic disenfranchisement, cultural barriers, and lower rates of insurance coverage (Jackson,

2014). James (2006) posits that integrating mental health care with regular health care will not only reduce costs and improve overall accessibility but will also enhance the social stigma surrounding mental health. Integrating mental health care and primary care services is one approach that has been utilized to address these challenges (McGough et al., 2016).

Navigating the complex American healthcare system is another barrier that prevents individuals experiencing mental health concerns from receiving the specialized care they need (Raja et al., 201). This results in most individuals disclosing these concerns to their PCPs, with whom they trust. However, while most PCPs have some training in psychological disorders and may be able to assist in times of crisis, they do not have the training to provide high-quality, empirically supported treatment to patients with mental illness over a long-term basis (James, 2006).

Several studies have demonstrated that primary care clinics are the first “port-of-call” for individuals experiencing mental health issues (Kessler & Stafford, 2008), suggesting that patients will most often present to their PCP for primary physical concerns rather than mental health concerns despite their need for mental health treatment. However, primary care clinics prioritize treating physical illness, monitoring chronic disease, and providing preventative health care, which competes with detecting and managing mental health problems. Additionally, PCPs are under a tight schedule that may not allow enough time to conduct a clinical interview and diagnose underlying psychiatric concerns (Rajesh et al., 2019).

Over the past decade, research on the implementation of integrated care models in primary care has greatly expanded. Through this research, improved conceptual models

of integrated primary care have emerged that aim to discover new ways of implementing effective mental health interventions within the primary care setting which will be outlined in following sections (Gerrity, 2016).

What is Primary Care Mental Health?

In 2008, the World Health Organization (WHO) defined primary care mental health as providing mental health services in primary healthcare settings such as diagnosing and treating people with psychological disorders, putting in place strategies to prevent psychological disorders, and ensuring primary health care workers can apply psychological and behavioral science skills (World Health Organization, 2008). Efforts to improve mental health care within the primary care setting include, but are not limited to, increased screening for mental health disorders, PCP mental health education, utilization of empirically supported treatment guidelines, and referral to specialty psychiatric care when needed (Rajesh et al., 2019).

It is important to note that several overlapping terms have been used to describe the integration of mental health services in primary care (Rajesh et al., 2019). Terms include behavioral health integration, co-located care, coordinated care, collaborative care, integrated care, primary care mental health, primary care psychology, and integrated primary care (Heath et al., 2013; Rajesh et al., 2019). For the purposes of this review, the terms primary care mental health and integrated primary care will be used.

In a typical primary care office setting, managing patients with mental health concerns competes with other priorities such as treating acute and chronic illnesses and delivering preventative health care such as screenings and immunizations (Rajesh et al., 2019). Delivery of integrated primary care models, where mental health professionals are

present, not only improves efficiency and lessens the practical burden on the PCP but ensures the patient's emotional well-being is adequately addressed (Steplemen et al., 2015).

Primary care mental health emphasizes a holistic approach that underscores patient-centered care (Raja et al., 2015). According to McDaniel and LeRoux (2006), patients often bring biopsychosocial problems to primary care – that is, symptoms affecting them in multiple life domains including physical, mental, and social functioning. Most PCPs are not equipped with the resources or knowledge to adequately address each facet. In fact, in 2013, two-thirds of PCPs reported that they were unable to access mental health services for their patients (Hwang et al., 2013). For PCPs who had the capabilities to refer these patients to mental health clinics, only 10% of patients followed through with the referral, which was partly due to the fragmentation of services (Gerrity, 2016).

Over the past several decades, the field of medicine has witnessed an explosion of research that has confirmed the complex relationship between the mind and body. Psychological phenomena such as stress and emotion dysregulation have detrimental effects on the body that affect its ability to fight off infection, prevent certain types of chronic diseases, and heal after an injury (Littrell, 2008). Additionally, individuals with mental health concerns are more likely to engage in health-risky behaviors such as smoking, over-eating, and lack of exercising (Gerrity, 2016). With this knowledge, the field of medicine has accepted that many physical illnesses have behavioral components that must be addressed in treatment planning and delivery.

Defining Integrated Care

Before discussing specific levels and models of integrating mental health care in primary care, it is important to define the term *integrated care*. Integrated care refers to the merging of two or more care systems that were once fragmented as single entities (Goodwin, 2016). Furthermore, Leutz (1999, p. 77) defined it as, "...the search to connect the healthcare system (acute, primary medical, and skilled) with other human service systems (e.g., long-term care, education, and vocational and housing services) to improve clinical outcomes (clinical, satisfaction, and efficiency)." Valentijn et al. (2013) defined *integrated primary care* as the integration of biomedical, psychological, and social dimensions of health and well-being to facilitate the continuous, comprehensive, and coordinated delivery of services to a defined population within the primary care setting. The integration of these services exists on a continuum where coordinated care exists on one end and integrated care on the other end (Rajesh et al., 2019). Coordinated care represents minimal collaboration and limited communication among providers whereas integrated care involves a multidisciplinary team that addresses numerous health and psychosocial needs (Flexhaug et al., 2011). It is assumed that as the complexity of the patient's need rises, so does the level of integration required to achieve appropriate and effective care (Heath et al., 2013).

Integrated Primary Care Models

The idea that MHPs may be useful in primary care settings has existed for several decades. In 1996, Doherty et al. (1996) proposed the first systematic collaborative care model that defined five levels of the involvement of MHPs within primary care called *The Levels of Systemic Collaboration Model*. The levels refer to the extent to which

collaboration occurs at the systemic and organizational level. Level one is labeled as *minimal collaboration*. This is where mental health and other healthcare professionals operate in separate facilities, with separate systems, and rarely communicate with one another. Level two is *basic collaboration at a distance* where providers have separate sites, but occasionally engage in communication through telephone or email about shared patients. *Level three is basic collaboration on-site* where mental health and other healthcare professionals have separate systems but share the same facility. They may regularly engage in communication about shared patients, which is mostly over the phone but sometimes face-to-face. The providers at this level appreciate the importance of each other's roles, but do not share a common language or in-depth understanding of each other's work. Level four is *close collaboration in a partly integrated system* where providers share the same site, have some systems in common, have regular face-to-face interactions about patients, engage in mutual consultation, and coordinate treatment plans. At this level, providers agree on the biopsychosocial/systems model and have a basic understanding of each other's roles and cultures. Operational discrepancies, such as co-pays for mental health but not for medical services may still exist. Lastly, level five is *close collaboration in a fully integrated system* where providers share the same site, the same vision, utilize the same note taking and scheduling system, and provide seamless biopsychosocial services. All professionals regularly attend team meetings that are held to discuss patient issues and team collaboration issues.

This classification system holds the assumption that as collaboration increased, so would the complexity of the patient and level of care. Overall, the purpose of this classification system was to provide a lexicon for primary care facilities to integrate

mental health services into their practice in light of their goals for collaboration, cost, and patient population (Heath et al., 2013).

Over the years, adaptations of Doherty et al.'s (1996) model have emerged, and the levels of integration have been both condensed and expanded. Unlike the 1996 model, more modern models address other barriers to care such as access, services provided, funding, governance, evidence-based practice, and data usage.

The Substance Abuse and Mental Health Services Administration (SAMHSA) and the Health Resources and Services Administration (HRSA) developed a 6-level framework of integrated care spanning the three practice structures of coordinated care, co-located care, and integrated care (Heath et al., 2013; Rajesh et al., 2019). Their model is based on the initial efforts of Doherty et al. (1996), but accounts for the experiences and information accumulated over the subsequent two decades. SAMSHA & HRSA propose their model to have included several enhancements that allow it to become a national standard of care model for integrated healthcare.

The framework includes three main categories – *coordinated, co-located, and integrated care* – with two levels of degree within each category. The first, *coordinated care*, has two levels – *minimal collaboration* and *basic collaboration at a distance*. At both levels, mental health and primary care providers maintain separate facilities and separate systems. The distinction between the two levels is frequency and type of communication. At level one, providers rarely communicate about cases. At level two, a PCP may request a psychological evaluation if appropriate. Level three and level four exist under the category of *co-located care* where physical proximity is the key element. At level three, *basic collaboration onsite*, and level four, *close collaboration* with some

system integration, providers share the same facility and patient follow-through with referrals is more successful due to proximity. Level four incorporates a higher level of collaboration among providers than level three where the roles of team members are not clearly defined. The last category, *integrated care*, contains level five and level six where the key element is practice change. At level five, *close collaboration approaching an integrated practice*, mental health and primary care providers function as a team and collaborate frequently. However, at this level, full integration has not yet been reached due to unresolved issues such as separate medical records still existing. At level six, *full collaboration in a transformed/merged practice*, full integration has been achieved and mental health and primary care have merged into a single transformed practice. Settings that implement full collaboration of care include Veteran Health Administrations and acute inpatient psychiatric hospitals (Vanderlip et al., 2016).

The SAMHSA and HRSA framework has been cited by numerous studies (Gerrity, 2016; Heath et al., 2013; Rajesh et al., 2019; Raney, 2015; Steplemen et al., 2015) as the standard reference and foundation for models of integrated primary care. While several other derivations exist, defining them would be beyond the scope of this paper.

Advantages of Integrated Primary Care

Integrated primary care offers a way forward from the common pitfalls within our mental healthcare system. Several integrated care models aim to achieve what is known as the Triple Aim of healthcare which is better outcomes, better care experience, and reduced costs (Tice et al., 2015). Over the years, systematic reviews have been conducted

to examine whether integrated primary care is advantageous to consumers of the healthcare system.

Improved Access. Accessibility refers to the ease of access to obtain the service and use of the service being sought (Jackson, 2014). Factors to consider when examining accessibility to mental health care are the referral system, waiting periods for an initial appointment, and waiting time onsite, such as time in the waiting room. The World Health Organization (WHO, 2008) suggests that primary mental health care models improve access to mental health treatment through better physical accessibility (PCP offices being the first level of contact), better financial accessibility (billing both medical and mental health services at once), and better acceptability (familiarity with consistent providers).

In a study conducted by Miller-Matero et al. (2018), patients preferred to see an embedded MHP in a primary care clinic as opposed to seeking treatment at a specialty clinic. The highest rated reason for this was because of the convenience and accessibility the integrated primary care clinic had to offer. Previous research has suggested that very few patients follow through with their mental health referrals due to long wait lists (Gerrity, 2016). With the incorporation of a mental health professional onsite, the waiting time is reduced to the same day or within one day (Miller-Matero et al., 2018).

Patients struggling with mental health concerns often try to conceal their symptoms due to the stigmatizing attitudes they may experience from family and friends (Miller-Matero et al., 2018). Integrated primary care is an effective strategy to ensure these individuals receive the care they need despite their insecurities. In a diverse group of 96 patients, Miller-Matero et al. (2015) found that patients who are deterred from

mental health treatment due to stigma are more likely to follow through with treatment in a primary care setting where they are already receiving care. This is another way integrated primary care increases access of mental health services to those who would otherwise not participate.

Quality of Care. Not only is the prevention and detection of mental health conditions improved in settings where integrated care is utilized, the patient-centered nature and collaborative structure may yield higher quality of care (Hwang et al., 2013; Davis et al., 2018). In a qualitative study performed by Davis et al. (2018) where the researchers interviewed 23 patients from integrated primary care settings, participants reported personal, interpersonal, and organizational benefits from integrated primary care. Specifically, patients saw improvements in continuity of care, trust in their providers, and motivation to engage in treatment. In a similar study by Siantz et al. (2020), the researchers found that integrated primary care elevated the patient experience by providing a care coordinator to manage referrals, appointments, and communicate with team members. Patients in this study also reported that the integrated care model met their “physical, emotional, mental, and spiritual needs.” Overall, when considering the patient experience, integrated primary care has been shown to provide substantially improved quality of care when compared to treatment as usual in the primary care setting.

Cost. Several studies demonstrate that an integrated primary care model reduces healthcare costs significantly, especially over time (Tice et al., 2015). In 2017, the Centers for Medicare and Medicaid Services reported that widespread implementation of integrated primary care models could improve outcomes for Medicare beneficiaries,

produce savings for the Medicare program, and allow more individuals utilizing Medicare to receive mental health services (Press et al., 2017).

For patients with multiple medical conditions and depression, a study by Katon et al. (2010) found that over the period of 24 months, these patients receiving physical and mental health care in an integrated setting had 114 more depression free days than control patients. Additionally, patients receiving integrated care had a lower mean outpatient cost compared to patients treated as usual.

Reduced Stigma. Stigma surrounding mental health, including stereotypes, prejudices, and discrimination against those with a mental health diagnosis, is believed to be rampant despite public efforts to change these narratives (Corrigan & Watson, 2002). Research suggests that mental health stigma is associated with poor physical health, increased rates of hospitalization, higher numbers of suicide attempts, and higher mortality and morbidity scores among people with mental disorders (Aydogmus, 2020). Not only does stigma exist within the general population in most Westernized countries, it is also prevalent among highly trained medical professionals. Vistorte et al. (2018) suggest that PCP stigma towards mental health is associated with a lack of training regarding accurate identification and treatment of mental disorders. Utilizing collaborative strategies among PCPs and MHPs may help to reduce stigmatizing attitudes among PCPs through education and familiarity.

Stigma surrounding mental health may also be impacted by lack of education and poor mental health literacy. Crowe et al. (2017) found that patients who have received mental health treatment in the past held fewer stigmatizing beliefs than those without treatment experience. Crowe et al. (2017) made the argument that familiarity with mental

health (i.e., individuals who participated in mental health treatment themselves or know someone who has) impacts one's beliefs (e.g., seeking psychological help is undesirable or socially unacceptable) about mental disorders. By increasing access to mental health treatment and education using primary care mental health professionals, it would be assumed that mental health stigma would decline over time. Moreover, "normalizing" regular mental health assessments and interventions similar to yearly physical check-ups may also yield a reduction in stigma (Williams, 2019).

Efficacy of Integrated Primary Care

Over the years, diagnosable mental health concerns have become more and more common, affecting approximately 18% of adults, and 13% to 20% of children and adolescents in the United States. Moreover, depression alone will be one of the three leading causes of disability by the year 2030, as predicted by Mathers and Loncar (2006). As rates of mental health continue to rise, so does the need for effective mental health treatment.

Several studies exist demonstrating the efficacy and efficiency of delivering mental health services in primary care. Woltmann et al. (2012) conducted a comprehensive meta-analysis on the effectiveness of collaborative chronic care models (CCMs) for several mental health conditions including depression, bipolar disorder, and anxiety disorders. They compared CCMs to treatment as usual for 57 experimental trials across 78 articles yielding 161 analyses. The results indicated small to medium effects across multiple disorders for clinical outcomes, mental and physical quality of life, and social role functioning.

A study was conducted at an integrated family care practice in Iowa examining the effectiveness of an interprofessional care team approach for patients with chronic conditions and mental health diagnoses (Gaglioti et al., 2017). Specifically, the researchers sought to investigate participants' health care utilization patterns pre- and post-enrollment in an integrated care management program. The interprofessional care team included a family PCP, psychiatrist, MHP, social worker, and care manager. Target groups included patients with depression and chronic diseases, patients with severe persistent mental health issues who are at increased risk for chronic disease, and patients with alcohol use disorders who are at high risk for illnesses like hypertension, liver disease, and dementia. They hypothesized that enrollment in the integrated care management program would reduce patients' odds of an emergency department visit or hospitalization and increase the odds of primary care and outpatient mental health visits, therefore leading to more favorable utilization and prevention outcomes. With a sample size of 358 participants, it was found that patients were approximately 60-70% less likely to utilize the emergency department and 50% less likely to be admitted to the hospital after at least six months of enrollment in the integrated care program. These results support the clinical effectiveness of integrated care management programs for patients with both mental health concerns and chronic medical illnesses.

In a similar study assessing the benefit of an integrated care approach for individuals with co-occurring mental health diagnoses and physical conditions, the researchers compared pre- and post-test data between participants in the experimental group and treatment-as-usual group (Schmit et al., 2018). Participants were at least 18-years of age and diagnosed with a serious mental health diagnosis (major depression,

bipolar disorder, schizophrenia, etc.) and a primary (diabetes, obesity, hypertension) or non-primary (arthritis, seizure disorder, asthma) health condition. Participants who demonstrated continuity of services, that is, went no longer than 30 days between appointments for a duration of 12 months, were included. Results indicated that patients receiving the integrated approach from professionals who were cross-trained in physical and mental health care experienced a 24-times greater improvement in overall functioning.

While there are limitations to all these studies, such as limited racial/ethnic diversity (Gaglioti et al., 2017), use of archival data (Schmit et al., 2018), and lack of diversity of psychiatric diagnoses (Woltmann et al., 2012), the research that exists in support of integrating mental health care with primary care is robust. According to recently published meta-analyses and experimental studies (Crocker et al., 2021; McGough et al., 2016; Schmit et al., 2018; Woltmann et al., 2012), integrating primary and mental health care has been effective at improving long-term outcomes for both mental and physical illnesses, quality of care, and overall life satisfaction.

Health Anxiety

Health anxiety is a broad term used to describe pervasive and excessive worry regarding one's health (Fergus et al., 2019b). According to the *DSM-5*, health anxiety is a psychological symptom seen in both IAD and SSD (APA, 2013; Fergus et al., 2017).

Health anxiety involves, but is not limited to, excessive preoccupation with one's physical health, hypervigilance toward bodily sensations, misinterpretation of normal bodily sensations (sweating, bloating, heart racing) as serious disease, and a tendency to self-diagnose with a physical illness (French & Hameed, 2021). Although some

individuals with health anxiety may have a medical diagnosis, they often exaggerate and magnify the severity of their disorder (Espiridion et al., 2021). It is important to note that a specific subset of individuals with health anxiety exists: those with chronic illness.

While many individuals with health anxiety are completely healthy, individuals with a chronic illness often report feeling anxious and worried about symptom reoccurrence or their condition worsening (Lebel et al., 2020). This type of presentation is more likely to parallel the criteria for SSD than IAD, since those with IAD tend not experience intense somatic symptoms (either medically explained or unexplained; Rief & Martin, 2014).

Etiology, Psychopathology, and Comorbidity

Several risk factors have been implicated in the development of health anxiety. These include exposure to family members with health anxiety (Alberts et al., 2013), experiencing a serious illness as a child or witnessing a family member with a serious medical condition (Alberts et al., 2013; Scarella et al., 2019), and having an underlying anxiety disorder or a predisposition to one (Newby, Megan et al., 2017). Additional research suggests that those who experienced anxious or insecure attachment to caregivers in childhood are at an increased risk for developing health anxiety as adults (Noyes et al., 2003). It has also been found that dysfunctional beliefs about health, such as beliefs that bodily symptoms are dangerous, illness cannot be controlled, and poor health is inevitable, are responsible for the cognitive mechanisms that maintain health anxiety (Hadjistavropoulos et al., 2012).

Within the context of dysfunctional beliefs and maladaptive behaviors associated with health anxiety, Scarella et al. (2019) theorized that health anxiety is comprised of three symptom domains. The first is *disease conviction* where the individual believes

they have a serious illness in contempt of explanations for the unlikeliness of a disease and lack of physical and laboratory findings. *Disease fear* is the second domain which is described as a profound worry of developing a serious illness, which results in a heightened and unwarranted stress response as a result of any suggestion of the possibility of illness. *Bodily preoccupation* is the last symptom domain which consists of a heightened salience of physiological functions, benign sensations, and superficial discomfort.

Those with health anxiety may also demonstrate checking behaviors, such as visual inspection of benign marks on the skin, performing eyesight tests to check for neurological disorders, or measuring heart rate and blood pressure for signs of cardiovascular disease (Olatunji et al., 2011). As proposed by Hartmann et al. (2019), checking behaviors are performed to reduce negative emotional states or avoid feared outcomes. Over time, these behaviors are negatively reinforced, becoming repetitive and necessary to self-regulate in times of distress.

Like checking behaviors, reassurance seeking is a prevalent phenomenon among health anxiety sufferers. Oftentimes, reassurance seeking becomes extensive and debilitating, dominating the interactions of those involved (Halldorsson & Salkovskis, 2017). From a cognitive-behavioral perspective, reassurance seeking is a safety seeking behavior that reduces the perceived threat with the added benefit of transferring the “responsibility” for the feared harm to someone else (Rachman, 2002).

Among adults with health anxiety, comorbidity with other disorders such as panic disorder, generalized anxiety disorder, and obsessive-compulsive disorder is high (Villadsen et al., 2017). Health anxiety is also experienced by those with medical

illnesses such as chronic pain, multiple sclerosis, cardiac disease, and cancer (Hadjistavropoulos et al., 2012; Lebel et al., 2020). The overlap among the symptom presentation and how to differentiate between disorders will be discussed in a subsequent section.

Diagnostics

Health anxiety refers to the persistent, inappropriate, and excessive fear of the presence of a perceived threat to one's own health. While health anxiety is the hallmark symptom of IAD, it is also seen in other somatoform disorders, anxiety disorders, and mood disorders (American Psychiatric Association, 2013). Prior to the use of the *DSM-5*, health anxiety was the main feature in the *DSM-III* and *DSM-IV* diagnosis of hypochondriasis (APA, 1980; APA, 1994). Now, hypochondriasis has been redefined and replaced with two distinct disorders: IAD and SSD (Lebel et al., 2020).

Somatic Symptom and Related Disorders. The grouping of disorders under somatic symptoms and related disorders is named as such to reflect that these patients generally present to non-mental health settings as they believe their discomfort and distress is not psychological in nature (Scarella et al., 2019). Somatic symptom and related disorders emerged as a new category in the *DSM-5* and include SSD, conversion disorder, IAD, and psychological factors affecting medical conditions (APA, 2013). In individuals with these disorders, somatic symptoms are the main complaint. However, in contrast with previous editions of the *DSM*, emphasis is now placed on the psychological, behavioral, and cognitive processes underlying these disorders rather than the somatic complaints and symptoms themselves. In fact, many individuals with these disorders

have a co-occurring medical condition and may still receive psychological treatment alongside medical treatment (Poloni et al., 2019).

In earlier versions of the *DSM*, these disorders were bundled under the category somatoform disorders (APA, 1994). This category received a lot of criticism due to the conceptual ambiguity and poor diagnostic validity of the disorders (Noyes et al., 2006). The relatively new *DSM-5* diagnoses, IAD and SSD, have demonstrated significantly greater validity and reliability resulting in more appropriate methods of intervention (Scarella et al., 2019).

Illness Anxiety Disorder. Those with IAD may or may not have a medical condition. The disorder is characterized by intense anxiety about the possibility of an undiagnosed illness in addition to spending excessive amounts of time monitoring health concerns including obsessive researching and frequent visits to their doctors. Even at moderate levels, IAD can cause significant distress and life disruption (Parikh et al., 2017).

For the individual to qualify for an IAD diagnosis they must demonstrate a preoccupation with having or acquiring a serious illness, an absence of or only mild somatic symptoms, and a high level of health-related anxiety that causes excessive rituals such as checking or numerous doctor visits. These symptoms must be present for at least six months. This disorder can be specified as either care-seeking type (frequent medical visits) or care-avoidant type (avoiding doctors; APA, 2013). Typical onset is seen in early to middle adulthood and is rare in childhood (Johansen, 2018).

The experience of health anxiety is widely varied and can be characterized as mild and transient to severe and chronic (Lebel et al., 2020). Insight into pathological and

excessive worry also varies, from being able to acknowledge that the worry is excessive while feeling helpless to combat it, to the inability to be dissuaded from their belief that they are ill (Scarella et al., 2019).

Due to the recent addition of IAD in the *DSM-5*, the exact prevalence is largely unknown, however, it is estimated by the prevalence of the *DSM-III* and *DSM-IV* diagnosis hypochondriasis (French & Hameed, 2021). Among those diagnosed with the now obsolete term hypochondriasis, approximately 25% of patients meet the criteria for IAD (Newby, Smith et al., 2017). The prevalence of IAD also varies based on the setting. In the medical outpatient environment, it is estimated that about 0.75% of all patients meet criteria for IAD and in the general population, it is about 0.1% (Scarella et al., 2019).

Somatic Symptom Disorder. SSD is characterized by persistent somatic complaints accompanied by excessive health-related thoughts, feelings, and behaviors. This includes persistently high levels of anxiety about one's health, excessive time and energy devoted to these health concerns, and disproportionate thoughts about the seriousness of one's symptoms. Additional criteria state that although any one somatic symptom may not be continuously present, the state of being symptomatic is present for at least six months. Specifiers include *with predominant pain, persistent* (marked symptoms and impairment for a long duration), and *mild, medium, or severe* (APA, 2013).

Differential Diagnosis. Careful attention must be paid to accurately differentiate IAD from SSD. Since the split from hypochondriasis to IAD and SSD in the *DSM-5*, the reliability and validity of this new classification system has significantly increased the

accuracy in distinguishing individuals with predominantly somatic complaints versus excessive preoccupation with their health (Newby, Smith et al., 2017). It appears that the development of IAD criteria was largely dependent on the diagnostic criteria for hypochondriasis in *DSM-III* and *DSM-IV*. In contrast, SSD was based off somatic disorder criteria in earlier editions of the *DSM* (Scarella et al., 2019).

In comparing SSD and IAD, IAD emphasizes the excessive worry and preoccupation with having or acquiring an undiagnosed medical illness. Additionally, individuals with IAD are constantly alarmed about their health status and engage in health-related checking behaviors to reassure their fears (Johansen, 2018). While individuals with IAD may present with somatic complaints that are not medically justified, the disproportionate fear and preoccupation that these symptoms are insidious dominate the clinical presentation. In contrast, individuals with SSD typically present with several somatic symptoms (cardiac complaints, chronic pain, gastrointestinal discomfort), which may or may not be medically explained (Rief & Martin, 2014). The following two case examples may help clarify the clinical presentation of IAD and SSD.

James is a 22-year-old male who recently graduated from college and is beginning his career in business. James was referred to a mental health clinic by his PCP after reporting occasional stomach pain, which he believes is stomach cancer. After an in-depth medical examination, laboratory results did not indicate any signs of stomach cancer, but James believes the doctors may have missed something. James is still convinced that his occasional stomach pain is a result of stomach cancer and that he will die at a young age. James spends several hours a day researching symptoms of stomach cancer and has several specialist appointments scheduled. He has also developed rigid

behavioral patterns that include strict dieting, symptoms diary, and even examining his stool for abnormalities after he uses the restroom.

This case illustrates the excessive and obsessive nature of James' behaviors and thought patterns. Despite clear medical evidence suggesting no signs of cancer, James continues to ruminate on the unsubstantial evidence that he has stomach cancer. To placate his fears, James engages in unnecessary dieting and monitoring of his bodily symptoms.

Kate is a 40-year-old female who presented to her PCP after experiencing months of excruciating joint pain, hot and cold flashes, fatigue, and general malaise. Kate reported that her symptoms become so unbearable that, on most days, she is unable to play with her children, attend her job as a librarian, or perform daily responsibilities around her home. Kate's physician carefully gathered her medical history and decided to test her for the presence of an autoimmune disorder. All of Kate's tests came back normal. While Kate is very concerned for her health and reports moderate symptoms of depression, she and her doctor are continuing to investigate her symptoms.

Kate's case highlights some differences between IAD and SSD. Most notably, when comparing Kate to James, Kate is less obsessive and ruminative over her symptoms. While her symptoms still cause her psychological distress, she does not engage in excessive health-related or obsessive behaviors. Additionally, her somatic symptoms are more severe and persistent, while James' are fewer and less severe.

Another notable difference between James and Kate is the locus of their distress. It appears that Kate is most impaired by the physical sensations of her symptoms, and her psychological disturbances are secondary. In contrast, James' psychological distress

appears to be stemming from his maladaptive thoughts and behaviors regarding the fear of a possible illness, rather than the physical symptom (stomach pain) itself (Almalki et al., 2016).

Interventions

Individuals with health anxiety engage in several behaviors that maintain the disorder such as self-monitoring, researching, and reassurance-seeking. Based on the principles of operant conditioning, these maladaptive coping behaviors are set on a continuous negative reinforcement schedule where the individual seeks constant reassurance about their symptoms to decrease their distressing thoughts about their illness (Staddon & Cerutti, 2003). Because the disorder is maintained systematically through the reinforcement of specific behaviors, it lends itself a good prognosis when treated with cognitive behavioral therapy (Richtberg et al., 2016).

Cognitive Behavioral Therapy. CBT has been shown to be an effective treatment for health anxiety and related disorders (Newby, Megan et al., 2017; Weck et al., 2017). Based on the principles of cognitive psychology, CBT proposes that one's thoughts, beliefs, and attitudes affect behaviors, and these behaviors are maintained (and extinguished) by operant conditioning mechanisms. Operant behavior is defined as behavior controlled by its consequences (Skinner, 1937). In other words, behavior is maintained or extinguished by reinforcing or punishing the behavior, respectively (Staddon & Cerutti, 2003). As discussed previously, behaviors involved in health anxiety, including self-monitoring and reassurance seeking, are negatively reinforcing the client's fear of contracting or having a severe illness by "taking away" the fear that something may be wrong when they see, for example, a normal blood pressure. Because health

anxiety disorders can easily be observed and conceptualized within the framework of cognitive-behavioral precepts, it makes sense that CBT would be the most appropriate strategy to treat such conditions.

Moreover, approximately 40% of health anxiety sufferers have a co-occurring diagnosis such as generalized anxiety disorder, agoraphobia, and major depressive disorder (Newby, Megan et al., 2017; Richtberg et al., 2016). Through years of research, CBT has been proven to be efficacious for treating these disorders and producing long-lasting effects and, therefore, contributes to its utility in treating health anxiety (Hauksson et al., 2017; Johnson et al., 2018). The goal when treating health anxiety with CBT is, "...to modify the attitudes of schemata developed from previous experiences, and to change behavioral contingency using behavioral modification techniques" (Tazaki & Landlaw, 2006, p. 66). Therefore, CBT interventions involve identifying core beliefs regarding one's health, challenging those beliefs, and then preventing and replacing the behaviors that sustain these beliefs. Under the umbrella of CBT lie several techniques that have shown to be effective when treating health anxiety and its comorbid diagnoses. These include, but are not limited to, exposure therapy (ET) and mindfulness-based cognitive therapy (MBCT).

Exposure Therapy. ET involves exposure to the situation or symptom that elicits anxiety and pairing it with relaxation techniques (systematic desensitization; Weck et al., 2017). This occurs over a several week process where the distressing stimulus is presented hierarchically. Exposure techniques included in vivo exposure, interoceptive exposure, and exposure in sensu (Weck et al., 2015). It is imperative that relaxation techniques are taught prior to the process and reinforced throughout (Tazaki & Landlaw,

2006). In a study consisting of 84 patients with a health anxiety-related diagnosis, Weck et al. (2017) found that patients who participated in twelve weekly sessions of ET had significantly reduced anxiety symptoms as well as bodily complaints. Additionally, depressive symptoms were also reduced significantly along with safety behaviors when compared to a group who received cognitive therapy only. After a twelve month follow up, it was discovered that the treatment effects were maintained. Another study addressing an even longer follow-up period of three years found that 72% of the participants ($n=50$) no longer qualified for a health anxiety diagnosis (Weck et al., 2017). These studies, among others, demonstrate the long-term efficacy of exposure therapy in patients with persistent health anxiety.

Mindfulness-Based Cognitive Therapy. Alongside exposure therapy, MBCT is a long-standing treatment that has been demonstrated to be efficacious in the treatment of anxiety disorders (Williams et al., 2011). MBCT is an anxiety-reducing technique where the client is taught how to observe their thoughts and experiences in the present moment. This is done by repeatedly returning attention to an object or sensation, taking it at face value, and nonjudgmentally accepting the present experience (Williams et al., 2011). The overall purpose for MCBT in health anxiety clients is to cultivate a new habit to replace the urgency of anxiety-reducing behaviors as well as the catastrophic thoughts. Given the ruminative nature of health anxiety, it would be reasonable to hypothesize that MBCT would be advantageous in symptom reduction. Because MBCT enables clients to learn the skill of attentional redirection, this may aid in breaking the cycle of attending to bodily sensations and negative thoughts (Williams et al., 2011). In a study consisting of 74 participants with a health anxiety diagnosis, it was found that MBCT had significantly

lowered their health anxiety symptoms, both immediately after treatment and at a one-year follow-up (McManus et al., 2012).

In summary, there is considerable support for CBT, and its subcomponent techniques, to be one of the most efficacious treatment approaches for mood and affect disorders. Particularly, CBT is considered a front-line treatment method for those suffering from depression and anxiety. Health anxiety, which effects approximately 5% of the general population, and 9% of all patients in general healthcare, appears to be responsive to CBT (McManus et al., 2012). The mediating cognitive processes that perpetuate health anxiety, among other anxiety disorders, such as dysfunctional beliefs and catastrophic thinking are the focal point of CBT (Johnson et al., 2018). In addition, other cognitive processes that contribute to the maintenance of health anxiety such as excessive rumination and conditioned fear responses are addressed in MBCT and ET, respectively.

Health Anxiety in Primary Care

Individuals with health anxiety consider themselves medically ill and will therefore desire treatment in a medical setting rather than a mental health setting. Additionally, these patients are more likely to demonstrate elevated rates of healthcare utilization as they tend to consult with more than one physician for multiple opinions despite continuous negative diagnostic test results. These behaviors leave most physicians confused and frustrated, ultimately depleting medical institution's resources, time, and efforts (Almalki et al., 2016).

Prevalence, Utilization and Healthcare Costs

Health anxiety is a common and costly phenomenon among patients attending primary care visits and is estimated to affect nearly 20% of patients seeking services (Fergus et al., 2019b; Tyrer et al., 2011). It is also estimated that 10-20% of the U.S. health care budget is spent on patients with somatic symptoms and/or health anxiety (Espiridion et al., 2021). Both SSD and IAD are seen in primary care (Fergus et al., 2019b). Bailer et al. (2016) found that SSD is associated with a greater number of doctor consultations than IAD. SSD is also associated with a greater number of medical appointments than IAD (Newby, Smith et al., 2017). Nevertheless, both disorders are significantly prevalent in primary care and should be attended to in a careful manner as to avoid overutilization of services (Fergus et al., 2019b).

In a sample of 538 adult patients presenting in a primary care office, Fergus et al., 2017 found health anxiety to be positively correlated with certain indices (number of clinic visits in the past two years, current medications, and lab tests over the past two years) of medical utilization. That is, those who experienced higher levels of health anxiety were more likely to have an increased number of medical office visits, take more medications, and request more lab tests than the average consumer. Age and race were also covariates in this study. Results of the interaction effects between age and health anxiety indicated that older adults with health anxiety reported higher levels of somatic/body preoccupation than younger adults, where mean age of younger adults was 28 and mean age of older adults was 63. Moreover, race/ethnic differences in health anxiety and medical utilization were insignificant.

Extant research suggests that the combination of health anxiety coupled with high reports of somatic complaints is a significant predictor of healthcare usage (Barsky et al.,

2001; Creed, 2011; Tomenson et al., 2012). In a more recent study, Fergus et al. (2019b) examined this correlation in 531 primary care patients. A moderated regression analysis revealed an interactive effect between health anxiety and somatic symptoms severity as a predictor for subsequent medical care visits. Specifically, health anxiety coupled with relatively severe somatic symptoms, as reported on the Patient Health Questionnaire-15, predicted greater prospective year medical visits at a primary care clinic, when compared to individuals with health anxiety and mild somatic symptoms. This data is useful in emphasizing the importance of screening for and assessing the severity of health anxiety and somatic complaints in primary care patients as to reduce unnecessary expenditures on the healthcare system.

Assessment Measures

Screening for health anxiety in the primary care setting is necessary to detect patients in need of psychological treatment (Fergus et al., 2019a). The Health Anxiety Inventory (HAI; Salkovskis et al., 2002), the Short Health Anxiety Inventory (SHAI) (Salkovskis et al., 2002), Illness Attitudes Scale (IAS; Kelner et al., 1987), and the Whiteley Index (WI; Pilowski, 1967) are the three most widely used and psychometrically validated self-report measures of health anxiety (Hedman et al., 2015). Details regarding these assessments, such as subscales, optimal cut-off points, and clinical implications of scores, will be discussed in greater detail in chapter III.

Treatment

Patients presenting to primary care practices with health anxiety tend not to respond to traditional reassurance of their symptoms and easily become dissatisfied with the medical care received (Skidmore et al., 2014). Because the origin of distress arises

from the anxiety experienced by the meaning and significance of a symptom, rather than the symptom itself, individuals with health anxiety are likely to be unsatisfied with the reassurance of the physician (Almalki et al., 2016). This results in numerous unwarranted visits to the primary care office in search for an organic cause to their symptoms.

Cognitive behavioral models of health anxiety suggest that high medical utilization is a safety behavior used to reassure the fear of a serious medical condition; however, this reassurance is not sustaining as the dysfunctional cognitive beliefs regarding one's health persists (Fergus et al., 2017). Oftentimes, the patient develops a cycle of behavior where when they experience anxiety, they seek medical care, then the fear is temporarily placated, but the health anxiety subsequently returns resulting in repeated doctor's visits (Abramowitz et al., 2002).

One of the most important aspects in treating patients with health anxiety is establishing a strong and trusting therapeutic patient-physician relationship (Almalki et al., 2016). It is imperative that the physician acknowledge and validate the patient's fears (Espiridion et al., 2021). Scarella et al. (2019) suggest that the physician should foster an environment of empathy, open dialogue, and collaboration. Additionally, patients must be reassured that their symptoms are not catastrophic or life-threatening, but that the physician will continue to support the patient's concerns (Espiridion et al., 2021).

Specific treatment recommendations and case illustrations will be presented in chapter III. This chapter will cover assessment and diagnostic tools for health anxiety, intervention techniques to be utilized by the physician such as psychoeducation, therapeutic relationship, referrals, and reassurance, and case studies demonstrating

common presentations of health anxiety and best strategies to manage these patients in the primary care setting.

Chapter III

Clinical Application and Recommendations

Special Considerations for PCPs

Because patients with health anxiety consider themselves medically ill, or at risk of illness, they are typically encountered in medical settings rather than mental health settings (Almalki et al., 2016). They demonstrate elevated rates of medical utilization by attending multiple physician visits and continuously requesting diagnostic tests despite negative results (American Psychiatric Association, 2013). PCPs are often left frustrated and puzzled on how to care for such patients since attempts at reassurance and symptom palliation generally do not alleviate the health anxiety (American Psychiatric Association, 2013).

Although most physicians have completed training rotations in psychiatric or behavioral health settings and may have learned some psychotherapeutic techniques, it is difficult to provide quality and effective psychotherapeutic services to patients presenting with health anxiety in the fast-paced primary care setting (Searight, 2007). However, as the need for integrated primary care practices has expanded, extensive research has been undertaken to evaluate evidence-based brief practices for PCPs to implement in their encounters with patients with mental illness (Gavarkos, 2019). The following sections will introduce effective and brief skills and interventions for PCPs to use to support patients experiencing health anxiety.

Patient-Physician Relationship

It is common for patients to become dissatisfied with the care they receive, when it appears to them that their concerns are being rejected or not taken seriously by the PCP

(Starcevic, 2015). Therefore, establishing a strong therapeutic relationship with the patient that engenders trust and avoids animosity is imperative to managing patients with health anxiety (Almalki et al., 2016; Starcevic, 2015). But before a trusting relationship can be established, the PCP must understand the experience of the health-anxious patient (Noyes, 2014).

Under the assumption that most PCPs are trained in the biomedical model, they understand illness as a pathological process within the body. In other words, illness refers to a physical or physiological abnormality in the structure or function of a body part or system (Farre & Rapley, 2017). The health-anxious patient wholeheartedly believes they are ill and tends to take on a “sick role.” For most PCPs, illness without organic disease is illegitimate, so the PCP disregards the patient’s belief, is reluctant to confer this “sick role,” and often places responsibility of symptoms back onto the patient (Noyes et al., 2010). The patient is left to perceive their PCP as uncaring of their distress and unwilling to solve their health problems (Noyes et al., 2010). A disingenuous patient-physician relationship that harbors mistrust and animosity will almost always result in a dissatisfied patient and frustrated physician (Starcevic, 2015).

Careful listening and empathic responding show the patient that they are being acknowledged and taken seriously (Noyes, 2014). In addition, demonstrating acceptance and legitimization of the patient’s concerns allows them to feel heard and respected (Starcevic, 2015). For example, saying, “It must be frightening to live every day with the fear that no one has diagnosed you with the cancer you know you have” expresses empathy without agreeing with their belief (Scarella et al., 2019). Establishing a

relationship that reflects these qualities results in a patient who is more receptive to an explanation for their symptoms and reassurance from their PCP (Noyes et al., 2010).

Psychoeducation

Psychoeducation is a therapeutic intervention where the patient is offered systematic, relevant, and up-to-date material on their psychological disorder or physical illness (Donker et al., 2009; Motlova et al., 2017). Psychoeducation can range from handouts and pamphlets to multi-session group interventions with therapist-guidance (Scogin et al., 1989). There is evidence that suggests that psychoeducation is an effective treatment strategy for many physical and mental illnesses (Motlova et al., 2017) and is relatively easy to administer in a primary care setting (Munoz et al., 1995).

For health anxiety sufferers, the PCP may educate the patient on the misconceptions about the physiology and psychology of bodily sensations. That is, explaining to the patient how anxiety and stress can produce real, but harmless, physical symptoms in the body (Starcevic, 2015). In addition, psychoeducation on the nature of the illness such as course, treatment, and prognosis is important to instill hope for remediation and remind the patient they are not alone (Aggarwal & Srivastava, 2017).

Initial Work-Up and Reassurance

Once a trusting relationship is established and psychoeducation has been provided, the PCP must complete a physical workup to let the patient know that their symptoms are not due to serious illness. It is imperative that the PCP collects their information based on careful listening of the patient's history and symptoms, a detailed review of the records, a thorough physical examination, and appropriate test selection. In addition, the results of the testing must be carefully delivered with findings to support the

conclusion that the patient is not medically ill (Noyes, 2014). When taking into consideration these steps, it is likely that the patient will find relief in their exam findings. However, patients with health anxiety, particularly those with reassurance-seeking behaviors, will be persistent in their request for additional testing out of fear that something was missed (Tyrer & Tyrer, 2018).

Reassurance is challenging with this population since the persistence of health-related fears is part of the pathology (Starcevic, 2015). From a cognitive behavioral perspective, reassurance seeking has the primary function of reducing the perceived threat by drawing the attention of others to their physical state (Salkovskis, 1996). Reassurance seeking is a type of safety seeking behavior seen in individuals with obsessive-compulsive disorder (OCD) and health anxiety (Salkovskis et al., 2002). Additionally, excessive reassurance seeking is associated with interpersonal problems leading to elevated levels of distress, relationship difficulties, and poor quality of life (Boeding et al., 2013). To address these concerns, Halldorsson and colleagues (2016) suggested that the health anxious patient should be encouraged to shift their perspective from seeking reassurance to seeking support. Support seeking as opposed to reassurance seeking is a non-pathological interpersonal behavior where the patient aims to be acknowledged and encouraged to implement skills to cope with their distress. Consequently, this interaction is emotionally focused rather than threat focused (Halldorsson et al., 2016; Halldorsson & Salkovskis, 2017).

Within the primary care office setting, the PCP may provide additional psychoeducation rather than continuing to repeat messages assuring good health. This way, the patient is provided with new information (psychoeducation about their

symptoms) rather than the repeated presentation of old information (reassurance and unnecessary medical testing; Asmundson et al., 2010). In addition to reassurance from the initial workup and psychoeducation, the PCP may also suggest emotion regulation strategies such as relaxation training and scheduling pleasurable activities.

Routine Follow-Up Appointments

Scheduling follow-up appointments is another useful strategy when managing patients with health anxiety. Follow-up appointments serve several purposes. Most importantly, the patient is assured that the PCP is not avoiding or rejecting them (Noyes, 2014). Additionally, when patients are seen regularly by one physician, they are less likely to go from one specialist to another (Chappell, 2018). The PCP may also encourage the patient to refrain from looking up symptoms since that only reinforces the anxiety. With regularly scheduled appointments, the patient can be directed to write down their concerns and bring them to their PCP at their next appointment rather than attempting to self-diagnose (Taylor & Brooks, 2013).

Treatment with Medication

Pharmacological treatment for health anxiety may be warranted if symptoms are at least moderately severe and interfere with functioning at work or with relationships (Harding & Fallon, 2014). Additionally, if a co-occurring anxiety or depressive disorder is present, pharmacotherapy should be strongly considered (Starcevic, 2015).

Psychotropic medications are effective at treating a variety of anxiety disorders. Specifically, selective-serotonin reuptake inhibitors (SSRIs) and selective-norepinephrine reuptake inhibitors (SNRIs) are proven to provide symptom relief in individuals with health anxiety (French & Hameed, 2021).

Challenges to prescribing psychotropic medications to individuals with health anxiety include misinterpretation of an attempt to dismiss their symptoms and fear of adverse side-effects (Espiridion et al., 2021). It is imperative that the PCP follow these recommendations carefully as to ensure compliance and commitment: partner with the patient to learn about treatment options, respect their treatment preferences, educate the patient on all potential side-effects that are expected with beginning treatment, remind the patient that no treatment works over-night and may take several weeks to notice differences, use language that focuses on symptom reduction and distress tolerance, not cure, and discuss medication discontinuation, when it would be warranted, and safe ways of doing it (Harding & Fallon, 2014).

Assessment Measures

Early detection of health anxiety in the primary care patient is essential for preventing the development of severe symptoms and limiting high healthcare utilization (Crossmann & Pauli, 2006). However, distinguishing health anxiety in patients with comorbid psychiatric and medical conditions may be challenging as several symptoms tend to overlap. The following self-report questionnaires have been thoroughly evaluated and deemed as appropriate measures for detecting symptoms of health anxiety in various populations (Longley et al., 2014).

The Whiteley Index

The Whiteley Index (WI) is the oldest measure of health anxiety that is still in use. The original WI is a 14-item measure utilizing a true/false response format but has since been revised to a 5-point Likert scale format. Developed by Pilowsky (1967), the WI assesses three aspects of health anxiety: *bodily preoccupation* (a concern with bodily

sensations), *disease fear* (fear of acquiring an illness), and *disease conviction* (belief in illness despite medical reassurance). Despite its long-term usage within both clinical and research settings, Asmundson and colleagues (2008) purported that the original WI was created from a poor factor structure that yielded unstable item content. In light of this discovery, the researchers sought to determine a more robust and reliable item content. Based on their exploratory factor analysis, a two-factor solution comprising six items, named the Whiteley Index-6 (WI-6) demonstrated significantly improved psychometric properties. Bodily preoccupation and disease-related fear are the two factors making up the WI-6. The screener utilizes a 5-point Likert response format with an optimal cutoff score of 18 (Asmundson et al., 2008; Fergus et al., 2019a). Furthermore, the WI-6 had the same meaning and structure across self-identify Black and Latino respondents, suggesting its accuracy at detecting health anxiety across disparate groups (Fergus et al., 2019b).

Fergus et al. (2019a) examined the clinical utility of the WI-6 as a screener for severe health anxiety within the primary care setting. They found that while the WI-6 is efficient at detecting the presence of health anxiety, it should not be used as a standalone diagnostic tool or in place of a reference standard. This is because screeners can be associated with incorrect classifications of participants. Additionally, the WI-6's negative predictive value was 88% suggesting greater accuracy at detecting negative versus positive test results.

The Illness Attitude Scales

The Illness Attitude Scales (IAS; Kellner, 1987) is a self-report instrument designed to assess abnormal illness behavior and health anxiety (Crossmann & Pauli,

2006). The IAS consists of 29 items that are assigned to one of nine subscales. Eight of the subscales have three items each that use the same 5-point Likert response format. The remaining items are open-ended or use a Likert response format different from the other items (Longley et al., 2014). The nine subscales are *worry about illness, concerns about pain, health habits, hypochondriacal beliefs, fear of death (thanatophobia), disease phobias, bodily preoccupation, treatment of symptoms, and effects of symptoms* (Crossmann & Pauli, 2006).

Since its publication, several studies have examined the factor structure of the IAS. Many of these studies have concluded that the original factor structure of the IAS is more complex than needed (Ferguson & Daniel, 1995; Hadjistavropoulos et al., 1999; Stewart & Watt, 2000). However, no common factor solution has been found and the original IAS remains in use. The total score on the IAS ranges from 0-108. As stated, the IAS was designed to measure psychopathology related to severe health anxiety. It has been shown to have high test-retest reliability ($r=0.89$; Sirri et al., 2008) and has significant convergent validity with other measures of health anxiety (Weck et al., 2010). Hedman et al. (2015) suggest that a score of 47 is the optimal cut-off point to determine clinically significant levels of health anxiety.

The Health Anxiety Inventory and The Short Health Anxiety Inventory

The Health Anxiety Inventory (HAI) was created by Warwick and Salkovskis (1989) to fulfill the need for a self-rated measure of health anxiety that is sensitive across the full range of intensity and is able to discriminate patients with elevated health anxiety from somatically ill patients without health concerns (Salkovskis et al., 2002). The HAI consists of 64 items and is comprised of seven scales. The HAI has since been

abbreviated to create the Short Health Anxiety Inventory (SHAI), which consists of 18 items total, 14 of which form two of the scales from the HAI and the additional four items assess negative consequences of having a serious illness. The SHAI utilizes a Guttman response scale with each item having four responses where the patient is asked to select the statement that best describes them over the past six months (Longley et al., 2014). A cut-off score of 45 was found to correctly classify more than 75% of patients with health anxiety and other anxiety disorders (Abramowitz, Olatunji et al., 2007)

The results of a study examining the psychometric properties of the SHAI revealed that it is a reliable measure for assessing health anxiety across samples, including healthy, non-clinical populations (Abramowitz, Deacon et al., 2007). In another study, Salkovskis et al. (2002) found that the SHAI differentiated individuals with health anxiety from medically ill individuals without health anxiety. Considering its sound psychometric properties and ability to differentiate among clinical samples, the SHAI appears to be a useful tool for assessing the presence of health anxiety in various settings.

Opportunities for Collaboration

Opportunities for collaboration are attainable in settings that utilize integrated primary care models in which MHPs are embedded into the care team. Within these settings, MHPs may conduct assessments, provide psychoeducation, and deliver brief interventions to the patient when necessary (Shepardson et al., 2018). The MHP may also be used as a resource for the PCP by providing them with education on health anxiety and effective management through behavioral modification and thought-based strategies. Additionally, the MHP may suggest effective methods of communication when

delivering the diagnosis of health anxiety and results of positive, negative, or equivocal medical test results (Scarella et al., 2019).

A referral should be made to a specialty care facility (i.e., an outpatient setting) when the patient's health anxiety has not responded to the measures applied by the PCP and integrated MHP (Harding & Fallon, 2014; Shepardson et al., 2018). However, this does not suggest that the PCP should discharge the patient from their care and rely solely on mental health treatment. It is still important to maintain a trusting relationship with the patient and provide evidence-based information explaining their symptoms when appropriate (i.e., the relationship between the mind and body, the stress response, and normal bodily sensations; Starcevic, 2015). The MHP can help reinforce the strategies delivered by the PCP in addition to educating patients on the underlying psychology of health anxiety and providing cognitive-behavioral strategies to manage their symptoms on a daily basis (Higgins-Chen et al., 2019).

Case of Alex

The following case study illustrates the course, manifestation, and presentation of symptoms in an individual with health anxiety seeking care from their PCP. The strategies presented in the preceding sections will be highlighted in parentheses or italicized lettering to demonstrate how they may be used in clinical practice.

Background

Alex is a 28-year-old Hispanic cisgendered male with a bachelor's degree in computer science. Alex is currently working on his master's degree while working for an IT company. He is engaged to his fiancé, April, and they plan to get married in two months. Alex grew up with his mother, father, and younger sister in a suburban

neighborhood in western Pennsylvania. He moved into his own apartment with his fiancé after college. At the age of eleven, Alex's mother passed away after a year-long battle with pancreatic cancer. Despite this tragedy, Alex, his father, and younger sister remained close and supported one another throughout the grieving process. Following his mother's death, Alex developed symptoms of anxiety. He participated in weekly psychotherapy sessions on and off since he was twelve. At the age of fifteen, he was formally diagnosed with generalized anxiety disorder as evidenced by persistent worry about the safety of his family and friends, inability to relax and sleep throughout the night, restlessness, and gastrointestinal symptoms including nausea, cramping, and loss of appetite. Per his psychiatrist's recommendation, he began taking 25 mg of Zoloft and discontinued it when he was 23 because he felt he was at a stable point in his life. Since then, he reported that he can manage his anxiety with coping strategies learned in therapy.

Presenting Concerns

Alex presented to his primary care office with dull chest pain spanning from his left shoulder to his right shoulder. He also reported shortness of breath at random times throughout the day accompanied by a rapid heart rate. The symptoms have been present for approximately two weeks and began after he heard that one of his fraternity brothers from college passed away from a heart attack at 30. Alex reported that his symptoms intensified while at work and have significantly impacted his performance and efficiency. Alex has called-out of work four times in the past two weeks and is currently on employment probation.

Alex shared with the PCP that he is "scared for his life" and that he is "always thinking about the chest pain." He stated, "We need to get this figured out. I know

something is wrong. Someone young and healthy like me should not have chest pain. I am afraid of dying from sudden cardiac arrest.” He also reported that he has been researching his symptoms on the internet and found that they closely align with cardiomyopathy. Additionally, he has been using his smart watch to track his heart rate, which, when compared to previous readings on his smart watch app, revealed that his resting heart rate has increased by 15 points in the last two weeks.

Initial Work-Up

Alex’s PCP ordered a 12-lead electrocardiogram (ECG) and laboratory tests including complete blood count, chemistry panel, lipid panel, and urinalysis. The PCP also performed a standard physical examining his heart rate and rhythm, blood pressure, respiration rate, body temperature, lung functioning, head and neck abnormalities, and abdominal sounds. The exam and laboratory findings were within normal limits except for a slightly elevated resting heart rate (90 bpm) and blood pressure (135/90) during his physical.

A week later, the PCP presented these findings to Alex and assured him that his heart was functioning properly as evidenced by a normal ECG and laboratory tests. Specifically, the PCP gave concrete evidence against his hypothesis of having cardiomyopathy (i.e., no levels of troponin in bloodwork and normal ECG) (*providing proper reassurance*). However, Alex appeared to have some knowledge of the heart that he obtained through his research and challenged his PCP on the slightly elevated heart rate and blood pressure. Alex demanded that he be referred to a cardiologist to continue to rule out cardiac abnormalities.

Primary Care Interventions

Alex's PCP validated his distress by saying, "I can see that you are very concerned for your heart and are trying your best to keep yourself healthy" (*maintaining patient-physician relationship*). In response to Alex's request for a cardiology referral, the PCP reassured Alex that there is no evidence to suggest acute disease and that he would like to see him back in a month for a follow-up. Here, Alex's PCP gently denied his request for a referral and gave him an alternative by offering a follow-up appointment to ensure Alex does not feel abandoned or rejected (*providing reassurance and establishing consistent care with a follow-up appointment*). In this case, it is imperative that the PCP stand strong in their recommendation to not seek specialty care as this may only perpetuate Alex's health anxiety and reinforce the "doctor shopping" mentality that many health-anxious individuals adopt.

The PCP also offered *psychoeducation* on anxiety and the mind-body connection. The PCP explained, "The mind is a powerful tool. It is very common for patients experiencing anxiety to feel many unusual bodily sensations including chest tightness, elevated heart rate, dull aches, fatigue, and shakiness. These sensations are caused by our body's protective mechanism called the fight-or-flight response. Sometimes, the brain and body become confused and activate this response for no good reason." Alex appeared accepting of this information and nodded in agreement. The PCP also stressed the importance of refraining from searching the internet for medical advice and even suggested disabling the heart rate feature on his smart watch. Alex was reluctant to commit to these suggestions, so his PCP asked him to only take a break from the internet searching until he comes for his follow-up appointment. At times, patients may become

resistant to abandoning their safety behaviors all at once. Breaking down this goal into manageable parts is important to ensuring patient compliance. Alex was also given a handout on progressive muscle relaxation and asked by his PCP to “give it a shot.”

After Alex’s appointment, his PCP consulted with the integrated MHP in the office. The MHP suggested that the PCP continue to offer support and psychoeducation during their follow-up sessions. The MHP also suggested that the PCP administer The Illness Anxiety Scales assessment at his next appointment to determine Alex’s level of health anxiety symptoms. If the results indicate clinically significant symptom endorsement, then the PCP should discuss with Alex meeting with the MHP for a short-term CBT treatment protocol for health anxiety (*collaborating with other professionals within the office*).

Conceptualization

Several risk factors for health anxiety should be considered when conceptualizing the manifestation of Alex’s mental health concerns. First, his mother’s death appeared to be the impetus for his generalized anxiety. The nature of her death by pancreatic cancer most likely contributed to his fear of chronic illness and sudden death. According to Scarella et al.’s (2019) domains of health anxiety, Alex demonstrates all three. First, *disease conviction*, is evident in his persistent belief that he has a serious condition that cannot be dissuaded by the evidence of the unlikelihood of the condition or negative diagnostic tests. Second, Alex demonstrates *bodily preoccupation*, specifically toward his heart, as demonstrated by a heightened salience of bodily sensations and monitoring them via his smart watch. Finally, Alex has expressed *fear of disease* when speaking about how he is “scared for his life and afraid of sudden death by cardiac arrest.” In addition to

his mother's death, the death of his friend from college most likely triggered his current health anxiety symptoms.

Alex has also participated in safety behaviors, such as researching medical conditions online and heart rate monitoring, that have likely negatively reinforced his belief that he has a heart condition. Alex's history of generalized anxiety disorder is another precipitating factor in the development of health anxiety. When forming a treatment strategy, symptoms of generalized anxiety should be targeted along with symptoms of health anxiety.

Alex does not meet criteria for a diagnosis of IAD despite his preoccupation with having a serious illness, mild somatic symptoms, and high levels of health-related behaviors because his symptoms have not been present for at least six-months. However, Alex's case demonstrates the importance of treating health anxiety in its early stages. Remission has been associated with less disease conviction, fewer somatic symptoms, higher level of functioning, less disease fear, and fewer disability days at baseline (Scarella et al., 2019). With proper support from his PCP, participation in CBT, and collaboration by his providers, Alex has the opportunity to mitigate the aforementioned risk factors, develop strategies to manage his symptoms, and promptly return to work, ultimately improving his prognosis.

Chapter IV

Discussion

Summary

Proposing strategies for accurately diagnosing and effectively managing patients with health anxiety in the primary care setting is essential for mitigating health care overutilization as well as improving prognosis (Almalki et al., 2016; French & Hameed, 2021). According to recent research, the cornerstone of successful management of health anxiety is establishing a trusting therapeutic relationship between the patient and PCP (Scarella et al., 2019; Starcevic, 2015; Taylor & Brooks, 2013). It is imperative that the PCP understand the experience of the patient and empathize with their core belief that they are medically ill. While the PCP plays a major role in the management of health anxiety, a referral to a MHP may be warranted if the patient's symptoms are moderate to severe. In medical settings where an integrated care model is utilized, fewer barriers stand between the collaboration of the PCP and MHP. Effective collaboration is key for successful treatment, whether that be a brief consultation among providers or complete referral for additional services.

CBT is the first-line treatment for health anxiety and is often used in conjunction with pharmacotherapy in severe cases (Chappell, 2018). While formal CBT must be provided by a trained MHP, the PCP may assist in reinforcing the concepts and interventions discussed in therapy between the MHP and patient. For example, the PCP should mitigate excessive reassurance, limit unwarranted testing, and encourage behavioral changes, all of which are strategies utilized in CBT for health anxiety.

Clinical Implications and Future Directions

Research suggests that integrating mental health services within the primary care setting results in better treatment outcomes and prognosis of several mental health disorders (Gaglioti et al., 2017; Schmit et al., 2018; Woltmann et al., 2012). Specifically for patients experiencing anxiety over their health, treatment within a setting where both medical and mental health professionals are providing care may result in successful and sustainable treatment outcomes. While the prevalence and treatment of various mental health diagnoses have been comprehensively studied within the primary care setting, there remains a significant gap in the literature regarding the efficacy of collaborative care strategies for patients with health anxiety in the primary care office. This comprehensive review of the literature proposes strategies for PCPs to utilize when treating patients with mild to persistent health anxiety. While it is known that the aforementioned strategies are effective at minimizing symptoms of health anxiety (Almalki et al., 2016; Motlova et al., 2017; Starcevic, 2015), and that collaboration among health care professionals improves quality and access of mental health care (Hwang et al., 2013; Davis et al., 2018), the combining the two has not been well studied.

This dissertation serves as a broad overview of the presentation and management of health anxiety in the primary care setting. There are several areas in need of research including further exploration into the utility of assessment measures in primary care, efficacy of psychopharmacological treatment for health anxiety, and refinement of brief interventions for PCPs to support patients with health anxiety.

Additionally, a longitudinal outcome study may be considered to examine a potential manualized treatment strategy for managing patients with health anxiety in the

primary care setting. Specifically, this study may explore the effectiveness of collaborative care strategies for patients presenting with health anxiety in the primary care setting by comparing pre-post symptom measures after receiving treatment from both a MHP and PCP.

References

- Abramowitz, J. S., Schwartz, S. A., & Whiteside, S. P. (2002). A contemporary conceptual model of hypochondriasis. *Mayo Clinic Proceedings*, *77*, 1323–1330. <https://doi.org/10.4065/77.12.1323>
- Abramowitz, J. S., Deacon, B. J., & Valentiner, D. P. (2007). The Short Health Anxiety Inventory: Psychometric properties and construct validity in a non-clinical sample. *Cognitive Therapy and Research*, *31*, 871–883. <https://doi.org/10.1007/s10608-006-9058-1>
- Abramowitz, J. S., Olatunji, B. O., & Deacon, B. J. (2007). Health anxiety, hypochondriasis, and the anxiety disorders. *Behavior Therapy*, *38*(1), 86–94. <https://doi.org/10.1016/j.beth.2006.05.001>
- Aggarwal, S. & Srivastava, P. (2017). Psychotherapeutic management of hypochondriasis: A case study. *Open Journal of Psychiatry and Allied Sciences*, *8*(2), 165–168. <https://doi.org/10.5958/2394-2061.2017.00002.7>
- Alberts, N. M., Hadjistavropoulos, H. D., Jones, S. L., & Sharpe, D. (2013). The Short Health Anxiety Inventory: A systematic review and meta-analysis. *Journal of Anxiety Disorders*, *27*, 68–78. <https://doi.org/10.1016/j.janxdis.2012.10.009>
- Almalki, M., Al-Tawayjri, I., Al-Anazi, A., Mahmoud, S., & Al-Mohrej, A. (2016). A recommendation for the management of illness anxiety disorder patients abusing the health care system. *Case Reports in Psychiatry*, *1*(3), Article ID 6073598. <https://doi.org/10.1155/2016/6073598>
- American Psychiatric Association (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). American Psychiatric Publishing, Inc.

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). American Psychiatric Publishing, Inc.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Asmundson, G. J. G., Carleton, N. R., Bovell, C. V., & Taylor, S. (2008). Comparison of unitary and multidimensional models of the Whiteley Index in a nonclinical sample: Implications for understanding and assessing health anxiety. *Journal of Cognitive Psychotherapy: An International Quarterly*, 22(2), 87–96.
<https://doi.org/10.1891/0889-8391.22.2.87>
- Asmundson, G. J. G., Abramowitz, J. S., Richter, A. A., & Whedon, M. (2010). Health anxiety: Current perspectives and future directions. *Current Psychiatry Reports*, 12, 306-312. <https://doi.org/10.1007/s11920-010-0123-9>
- Aydogmus, M. E. (2020). Social stigma towards people with medically unexplained symptoms: The somatic symptom disorder. *Psychiatric Quarterly*, 91, 349–361.
<https://doi.org/10.1007/s11126-019-09704-6>
- Bailer, J., Kerstner, T., Witthoft, M., Diener, C., Mier, D., & Rist, F. (2016). Health anxiety and hypochondriasis in the light of DSM-5. *Anxiety, Stress, and Coping*, 29(2), 219–239. <http://dx.doi.org/10.1080/10615806.2015.1036243>
- Barsky, A. J., Ettner, S. L., Horsky, J., & Bates, D. W. (2001). Resource utilization of patients with hypochondriacal health anxiety and somatization. *Medical Care*, 39(7), 705–715. <https://doi.org/10.1097/00005650-200107000-00007>
- Boeding, S. E., Paprocki, C. M., Baucom, D. H., Abramowitz, J. S., Wheaton, M. G., Fabricant, L. E., & Fischer, M. S. (2013). Let me check that for you: Symptom

accommodation in romantic partners of adults with obsessive–compulsive disorder. *Behaviour Research and Therapy*, 51(6), 316–322.

<https://doi.org/10.1016/j.brat.2013.03.002>

Chappell, A. S. (2018). Toward a lifestyle medicine approach to illness anxiety disorder (formerly hypochondriasis). *American Journal of Lifestyle Medicine*, 12(5), 365–369. <https://doi.org/10.1177/1559827618764649>

Corrigan, P. W. & Watson, A. C. (2002). Understanding the impact of stigma on people with mental illness. *World Psychiatry*, 1(1), 16–20.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1489832/>

Creed, F. (2011). The relationship between somatic symptoms, health anxiety and outcome in medical out-patients. *Psychiatric Clinics of North America*, 34(3), 545–564. <https://doi.org/10.1016/j.psc.2011.05.001>

Crocker, A. M., Kessler, R., Eeghan, C. V., Bonnell, L. N., Breshears, R. E., Callas, P., Clifton, J., Elder, W., Fox, C., Frisbie, S., Hitt, J., Jewiss, J., Kathol, R., Clarke-Keefe, K., O'Rourke-Lavoie, J., Liebowicz, G. S., Macchi, C. R., McGovern, M., ... & Littenberg, B. (2021). Integrating behavioral health and primary care (IBH-PC) to improve patient-centered outcomes in adults with multiple chronic medical and behavioral health conditions: Study protocol for a pragmatic cluster-randomized control trial. *BMC*, 22(200), 1–18. <https://doi.org/10.1186/s13063-021-05133-8>

Crossmann, A. & Pauli, P. (2006). The factor structure and reliability of the Illness Attitude Scales in a student and a patient sample. *BMC Psychiatry*, 6(46).

<https://doi.org/10.1186/1471-244X-6-46>

- Crowe, A., Mullen, P. R., & Littlewood, K. (2017). Self-stigma, mental health literacy, and health outcomes in integrated care. *Journal of Counseling and Development, 96*(3), 267–277. <https://doi.org/10.1002/jcad.12201>
- Davis, M. M., Gowen, K., Gunn, R., Miller, B. F., Green, L. A., & Cohen, D. J. (2018). A qualitative study of patient experiences of care in integrated behavioral health and primary care settings: More similar than different. *Translational Behavioral Medicine, 8*(5), 649–659. <https://doi.org/10.1093/tbm/ibx001>
- Donker, T., Griffiths, K. M., Cuijpers, P., & Christensen, H. (2009). Psychoeducation for depression, anxiety and psychological distress: A meta-analysis. *BMC Medicine, 7*(79). <https://doi.org/10.1186/1741-7015-7-79>
- Doherty, W. J., McDaniel, S. H., & Baird, M. A. (1996). Five levels of primary care/behavioral healthcare collaboration. *Behavioral Healthcare Tomorrow, 5*(5), 107. <https://pubmed.ncbi.nlm.nih.gov/10161572/>
- Eilenberg, T., Frosthalm, L., Schroder, A., Jensen, J. S., & Fink, P. (2015). Long-term consequences of severe health anxiety on sick leave in treated and untreated patients: Analysis alongside a randomized control trial. *Journal of Anxiety Disorders, 32*, 95–102. <https://doi.org/10.1016/j.janxdis.2015.04.001>
- Espiridion, E. D., Fuchs, A., & Oladunjoye, A. O. (2021). Illness anxiety disorder: A case report and brief review of the literature. *Cureus, 13*(1), 1–4. <https://doi.org/10.7759/cureus.12897>
- Farre, A., & Rapley, T. (2017). The new old (and old new) medical model: Four decades navigating the biomedical and psychosocial understandings of health and illness. *Healthcare, 5*(4), 88. <https://doi.org/10.3390/healthcare5040088>

- Fergus, A. T., Griggs, J. O., Cunningham, S. C., & Kelley, L. P. (2017). Health anxiety and medical utilization: The moderating effect of age among patients in primary care. *Journal of Anxiety Disorders, 51*, 79–85.
<https://doi.org/10.1016/j.janxdis.2017.06.002>
- Fergus, A. T., Kelley, L. P., & Griggs, J. O. (2019a). The combination of health anxiety and somatic symptoms: A prospective predictor of healthcare usage in primary care. *Journal of Behavioral Medicine, 42*(2), 217–223.
<https://doi.org/10.1007/s10865-018-9956-1>
- Fergus, A. T., Kelley, P. L., & Griggs, O. J. (2019b). Examining the Whiteley Index-6 as a screener for the DSM-5 presentations of severe anxiety in primary care. *Journal of Psychosomatic Research, 127*, 1–8.
<https://doi.org/10.1016/j.jpsychores.2019.109839>
- Ferguson, E. & Daniel, E. (1995) The Illness Attitudes Scale (IAS): A psychometric evaluation on a non-clinical population. *Personality and Individual Differences, 18*(4), 463–469. [https://doi.org/10.1016/0191-8869\(94\)00186-V](https://doi.org/10.1016/0191-8869(94)00186-V)
- Fink, P., Ornbol, E., & Christensen, S. K. (2010). The outcome of health anxiety in primary care: A two-year follow-up study on health care costs and self-rated health. *PLoS One, 5*(3), 1–13. <https://doi.org/10.1371/journal.pone.0009873>
- Flexhaug, M., Noyes, S., & Phillips, R. (2011). *Integrated models of primary care and mental health and substance use in the community*. Ministry of Health.
<https://www.colleaga.org/sites/default/files/attachments/integrated-models-lit-review.pdf>

- French, J. H., & Hameed, S. (2021). *Illness anxiety disorder*. StatsPearls Publishing.
<https://www.ncbi.nlm.nih.gov/books/NBK554399/>
- Gaglioti, A. H., Barlow, P., Thoma, K. D., & Bergus, G. R. (2017). Integrated care coordination by an interprofessional team reduces emergency department visits and hospitalizations at an academic health centre. *Journal of Interprofessional Care, 31*(5), 557–565. <https://doi.org/10.1080/13561820.2017.1329716>
- Gavarkos, A. G. (2019). Behavioral counseling training for primary care providers: Immersive virtual simulation as a training tool. *Frontiers in Public Health, 7*(116), 1–6. <https://doi.org/10.3389/fpubh.2019.00116>
- Gerrity, M. (2016). *Evolving models of behavioral health integration: Evidence update 2010-2015*. Milbank Memorial Fund.
<https://www.milbank.org/publications/evolving-models-of-behavioral-health-integration-evidence-update-2010-2015/>
- Goodwin, N. (2016). Understanding integrate care. *International Journal of Integrated Care, 16*(4), 1–4. <http://doi.org/10.5334/ijic.2530>
- Hadjistavropoulos, H. D., Fromback, I. K., & Asmundson, G. J. G. (1999). Exploratory and confirmatory factor analytic investigations of the Illness Attitudes Scale in a nonclinical sample. *Behaviour Research and Therapy, 37*(7), 671–684.
[https://doi.org/10.1016/S0005-7967\(98\)00159-4](https://doi.org/10.1016/S0005-7967(98)00159-4)
- Hadjistavropoulos, H. D., Janzen, J. A., Kehler, M. D., Leclerc, J. A., Sharpe, D., & Bourgault-Fagnou, M. D. (2012). Core cognitions related to health anxiety in self-reported medical and non-medical samples. *Journal of Behavioral Medicine, 35*, 167–178. <https://doi.org/10.1007/s10865-011-9339-3>

- Halldorsson, B., & Salkovskis, P. M. (2017). Why do people with OCD and health anxiety seek reassurance excessively? An investigation of differences and similarities in function. *Cognitive Therapy and Research*, 41(4), 619–631. <https://doi.org/10.1007/s10608-016-9826-5>
- Halldorsson, B., Salkovskis, P. M., Kobori, O., & Pagdin, R. (2016). I do not know what else to do: Caregivers' perspective on reassurance seeking in OCD. *Journal of Obsessive-Compulsive and Related Disorders*, 8, 21–30. <https://doi.org/10.1016/j.jocrd.2015.11.003>
- Harding, K. J. K., & Fallon, B. A. (2014). Pharmacological treatment and neurobiology of hypochondriasis, illness anxiety, and somatic symptoms. In Starcevic V. & Noyes R. (Eds.), *Hypochondriasis and health anxiety: A guide for clinicians* (pp. 241–258). Oxford University Press.
- Hartmann, A. S., Cordes, M., Hirschfeld, G., & Vocks, S. (2019). Affect and worry during a checking episode: A comparison of individuals with symptoms of obsessive-compulsive disorder, anorexia nervosa, bulimia nervosa, body dysmorphic disorder, illness anxiety disorder, and panic disorder. *Psychiatry Research*, 272, 349–358. <https://doi.org/10.1016/j.psychres.2018.12.132>
- Heath, B., Wise-Romero, P., & Reynolds, K. (2013). *A standard framework for levels of integrated healthcare*. SAMHSA-HRSA Center for Integrated Health Solutions. <https://www.pcpcc.org/resource/standard-framework-levels-integrated-healthcare>
- Hedman, E., Lekander, M., Ljotsson, B., Lindefors, N., Ruck, C., Andersson, G., & Andersson, E. (2015). Optimal cut-off points on the Health Anxiety Inventory,

- Illness Attitude Scales and Whiteley Index to identify severe health anxiety. *PLoS One*, 10(4), 1–12. <https://doi.org/10.1371/journal.pone.0123412>
- Higgins-Chen, T. A., Abdallah, B. S., Dwyer, B. J., Kaye, P. A., Angarita, A. G., & Bloch, H. M. (2019). Severe illness anxiety treated by integrating inpatient psychotherapy with medical care and minimizing reassurance. *Frontiers in Psychiatry*, 10(150), 1–6. <https://doi.org/10.3389/fpsyt.2019.00150>
- Holden-Perkins, V., Wise, N. T., & Williams, E. D. (2000). Hypochondriacal concerns: Management through understanding. *Primary Care Companion Journal of Psychiatry*, 2(4), 117–121. https://doi.org/10.4088/pcc.v02n0402_
- Hwang, W., Chang, J., LaClair, M., & Paz, H. (2013). Effects of integrated delivery system on cost and quality. *The American Journal of Managed Care*, 19(5), 175–184. <https://pubmed.ncbi.nlm.nih.gov/23781916/>
- Jackson, V. H. (2014). *Addressing the complex and pernicious problem of disparities in behavioral health care*. Center for Child and Human Development. https://gucchd.georgetown.edu/products/Disparities_PolicyBrief.pdf
- James, C. L. (2006). Integrating clinical psychology into primary care settings. *Journal of Clinical Psychology*, 62(10), 1207–1212. <https://doi.org/10.1002/jclp>
- Johansen, T. (2018). Illness anxiety disorder: A proposed Adlerian formulation. *The Journal of Individual Psychology*, 74(2), 229–237. <https://doi.org/10.1353/jip.2018.0014>
- Johnson, U. S., Hoffart, A., Ulvenes, G. P., Vrabel, K., Nordahl, M. H., & Wampold, E. B. (2018). Metacognition and cognition in inpatient MCT and CBT for comorbid

anxiety disorders: A study of within-person effects. *Journal of Counseling Psychology*, 65(1), 86–97. <https://doi.org/10.1037/cou0000226>

Katon, W. J., Lin, E. H. B., Von Korff, M., Ciechanowski, P., Ludman, E. J., Young, B., Peterson, D., Rutter, C. M., McGregor, M., & McCulloch, D. (2010).

Collaborative care for patients with depression and chronic illness. *The New England Journal of Medicine*, 363(27), 2611–2620.

<https://doi.org/10.1056/NEJMoa1003955>

Kellner, R. (1987). *Abridged manual of the Illness Attitude Scales*. University of New Mexico, Department of Psychiatry, School of Medicine.

Kessler, R., & Stafford, D. (2008). *Primary care is the de facto mental health system*. In R. Kessler & D. Stafford (Eds.), *Collaborative medicine case studies: Evidence in practice* (p. 9–21). Springer Science and Business

Media. https://doi.org/10.1007/978-0-387-76894-6_2

Kilbourne, A. M., Beck, K., Spaeth-Rublee, B., Ramanuj, P., O'Brien, R. W., Tomoyasu, N., & Pincus, H. A. (2018). Measuring and improving the quality of mental health care: A global perspective. *World Psychiatry*, 17, 30–38.

<https://doi.org/10.1002/wps.20482>

Lebel, S., Mutsaers, B., Tomei, C., Leclair, C. S., Jones, G., Petricone-Westwood, D., Rutkowski, N., Ta, V., Trudel, G., Laflamme, S. Z., Lavigne, A. A., & Dinkel, A. (2020). Health anxiety and illness-related fears across diverse chronic illnesses: A systematic review on conceptualization, measurement, prevalence, course, and correlates. *PLoS ONE*, 15(7). <https://doi.org/10.1371/journal.pone.0234124>

- Leutz, W. N. (1999). Five laws for integrating medical and social services: Lessons from the United States and the United Kingdom. *The Milbank Quarterly*, 77(1), 77–108. <https://doi.org/10.1111/1468-0009.00125>
- Littrell, J. (2008). The mind-body connection: Not just a theory anymore. *Social Work in Health Care*, 46(4), 17-38. https://doi.org/10.1300/J010v46n04_02
- Longley, S. L., Meyers, M., Maxwell, R., & Boin, L. (2014). Assessment of hypochondriasis and health anxiety. In V. Starcevic & R. Noyes (Eds.), *Hypochondriasis and health anxiety: a guide for clinicians* (pp. 65–84). Oxford University Press.
- Maass, U., Kuhne, F., Maass, J., Unverdross, M., & Weck, F. (2020). Psychological interventions for health anxiety and somatic symptoms. *Zeitschrift fur Psychologie*, 228(2), 68–80. <https://doi.org/10.1027/2151-2604/a000400>
- Mathers, C. D., & Loncar, D. (2006). Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Medicine*, 3(11), 2011–2030. <https://doi.org/10.1371/journal.pmed.0030442>
- McDaniel, H. S., & LeRoux, P. (2006). An overview of primary care family psychology. *Journal of Clinical Psychology in Medical Settings*, 14, 23–32. <https://doi.org/10.1007/s10880-006-9050-7>
- McGough, M. P., Bauer, M. A., Collins, L., & Dugdale, C. D. (2016). Integrating behavioral health into primary care. *Population Health Management*, 19(2), 81–87. <https://doi.org/10.1089/pop.2015.0039>
- McManus, F., Surawy, C., Muse, K., Vasquez-Montes, M., & Williams, G. M. J. (2012). A randomized clinical trial of mindfulness-based cognitive therapy versus

- unrestricted services for health anxiety (hypochondriasis). *Journal of Counseling and Clinical Psychology*, *80*(5), 814–828. <https://doi.org/10.1037/a0028782>
- Miller-Matero, L. R., Dubaybo, F., Ziadni, M. S., Feit, R., Kvamme, R., Eshelman, A., & Keimig, W. (2015). Embedding a psychologist into primary care increases access to behavioral health services. *Journal of Primary Care and Community Health*, *6*(2), 100–104. <https://doi.org/10.1177/2150131914550831>
- Miller-Matero, L. R., Khan, S., Thiem, R., DeHondt, T., Dubaybo, H., & Moore, D. (2018). Integrated primary care: Patient perceptions and the role of mental health stigma. *Primary Health Care Research & Development*, *20*(48), 1–4. <https://doi.org/10.1017/s1463423618000403>
- Motlova, L. B., Balon, R., Beresin, E. V., Brenner, A. M., Coverdale, J. H., Guerrero, A. P. S., Louie, A. L., & Roberts, L. W. (2017). Psychoeducation as an opportunity for patients, psychiatrists, and psychiatric educators: Why do we ignore it? *Academic Psychiatry*, *41*(4), 447–451. <https://doi.org/10.1007/s40596-017-0728-y>
- Munoz, R. F., Ying Y. W., Bernal, G., Perez-Stable, E. J., Sorensen, J. L., Hargreaves, W. A., Miranda, J., & Miller, L. S. (1995). Prevention of depression with primary care patients: A randomized controlled trial. *American Journal of Community Psychology*, *23*(2), 199–222. <https://doi.org/10.1007/BF02506936>
- Newby, M. J., Megan, J. M., Mahoney, E. J. M., Wong, S., & Andrews, G. (2017). DSM-5 illness anxiety disorder and somatic symptom disorder: Comorbidity, correlates, and overlap with DSM-IV hypochondriasis. *Journal of Psychosomatic Research*, *101*, 31–37. <http://dx.doi.org/10.1016/j.jpsychores.2017.07.010>

- Newby, M., Smith, J., Uppal, S., Mason, E., Mahoney, E. J. A., & Andrews, G. (2017). Internet-based cognitive behavioral therapy versus psychoeducation control for illness anxiety disorder and somatic symptom disorder: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 86*(1), 89–98.
<https://doi.org/10.1037/ccp0000248.supp>
- Noyes, R. (2014). Management and physician-patient relationship in hypochondriasis. In V. Starcevic & R. Noyes (Eds.), *Hypochondriasis and health anxiety: A guide for clinicians* (pp. 128–148). Oxford University Press.
- Noyes, R., Longley, S. L., Langbehn, D. R., Stuart, S. P., & Kukoyi, O. A. (2010). Hypochondriacal symptoms associated with a less therapeutic physician-patient relationship. *Psychiatry, 73*(1), 57–69. <https://doi.org/10.1521/psyc.2010.73.1.57>
- Noyes, R., Scott, S. P., Langbehn, D. R., Happel, R. L., Longley, S. L., Muller, B. A., & Steven, Y. J. (2003). Test of an interpersonal model of hypochondriasis. *Psychosomatic Medicine, 65*, 292–300.
<https://doi.org/10.1097/01.PSY.0000058377.50240.64>
- Noyes, R., Stuart, S., Watson, B. D., & Langbehn, R. D. (2006). Distinguishing between hypochondriasis and somatization disorder: A review of the existing literature. *Psychotherapy and Psychosomatics, 75*(5), 270–281.
<https://doi.org/10.1159/000093948>
- Olatunji, B. O., Etzel, E. N., Tomarken, A. J., Ciesielski, B. G., & Deacon, B. (2011). The effects of safety behaviors on health anxiety: An experimental investigation. *Behaviour Research and Therapy, 49*(11), 719–728.
<https://doi.org/0.1016/j.brat.2011.07.008>

- Parikh, M. P. S., Brahmhatt, M., & Vankar, K. G. (2017). Clinical study of illness anxiety disorder in medical outpatients. *Archives of Psychiatry and Psychotherapy*, 4, 32–41. <https://doi.org/10.12740/APP/76932>
- Pilowsky, I. (1967). Dimensions of hypochondriasis. *The British Journal of Psychiatry*, 113(494), 89–93. <https://doi.org/10.1192/bjp.113.494.89>
- Poloni, N., Ivano, C., Ielmini, M., Mattia, M., De Leo, A., Di Sarno, M., Isella, C., Bellini, A., & Callegari, C. (2019). Hospitalized patients with medically unexplained physical symptoms: Clinical context and economic costs of healthcare management. *Behavioral Sciences*, 9(80), 1–13. <https://doi.org/10.3390/bs9070080>
- Press, M. J., Howe, R., Schoenbaum, M., Cavanaugh, S., Marshall, A., Bladwin, L., & Conway, P. H. (2017). Medicare payment for behavioral health integration. *The New England Journal of Medicine*, 376(5), 405–407. <https://doi.org/10.1056/NEJMp1614134>
- Rachman, S. (2002). A cognitive theory of compulsive checking. *Behavior Research and Therapy*, 40(6), 625–639. [https://doi.org/10.1016/s0005-7967\(01\)00028-6](https://doi.org/10.1016/s0005-7967(01)00028-6)
- Raja, S., Hasnain, M., Vadakumchery, T., Hamah, J., Shah, R., & Hoersch, M. (2015). Identifying elements of patient-centered care in underserved populations: A qualitative study of patient perspectives. *PLoS One*, 10(5). <https://doi.org/10.1371/journal.pone.0126708>
- Rajesh, R., Tampi, R., & Balachandran, S. (2019). The case for behavioral health integration into primary care. *The Journal of Family Practice*, 68(5), 278–284.

- Raney, L. E. (2015). *Integrated care: Working at the interface of primary care and behavioral health*. American Psychiatric Publishing, Inc.
- Richteberg, S., Jakob, M., Hofling, V., & Weck, F. (2016). Patient characteristics and patient behavior as predictors of outcome in cognitive therapy and exposure therapy for hypochondriasis. *Journal of Clinical Psychology, 73*(6), 612–625.
<https://doi.org/10.1002/jclp.22356>
- Rief, W. & Martin, A. (2014). How to use the new *DSM-5* somatic symptom disorder diagnosis in research and practice: A critical evaluation and a proposal for modifications. *Annual Review of Clinical Psychology, 10*(1), 339-367
<https://doi.org/10.1146/annurev-clinpsy-032813-153745>
- Salkovskis, P. M., Rimes, K. A., & Clark, D. M. (2002). The Health Anxiety Inventory: Development and validation of scales for the measurement of health anxiety and hypochondriasis. *Psychological Medicine, 32*, 843-853.
<https://doi.org/10.1017/S0033291702005822>
- Salkovskis, P. M. (1996). The cognitive approach to anxiety: Threat beliefs, safety-seeking behavior, and the special case of health anxiety and obsessions. In P. M. Salkovskis (Ed.), *Frontiers of cognitive therapy* (pp. 48–74). The Guilford Press.
- Scarella, T. M., Boland, R. J., & Barsky, A. J. (2019). Illness anxiety disorder: Psychopathology, epidemiology, clinical characteristics, and treatment. *Psychosomatic Medicine, 81*(5), 398–407.
<https://doi.org/10.1097/psy.0000000000000691>

- Schmit, M. K., Watson, J. C., & Fernandez, M. A. (2018). Examining the effectiveness of integrated behavioral and primary care treatment. *Journal of Counseling and Development, 96*(1), 3–14. <https://doi.org/10.1002/jcad.12173>
- Scogin, F., Jamison, C., & Gochneaur, K. (1989). Comparative efficacy of cognitive and behavioral bibliotherapy for mildly and moderately depressed older adults. *Journal of Consulting and Clinical Psychology, 57*(3), 403–7. <https://doi.org/10.1037//0022-006x.57.3.403>
- Searight, R. H. (2007). Efficient counseling techniques for the primary care physician. *Primary Care Clinics in Office Practice, 34*(3), 551–570. <https://doi.org/10.1016/j.pop.2007.05.012>
- Shepardson, R. L., Buchholz, L. J., Weisberg, R. B., & Funderburk, J. S. (2018). Brief psychological interventions for anxiety in adult primary care patients: A review and recommendations for future research. *Journal of Anxiety Disorders, 54*, 71–86. <https://doi.org/10.1016/j.janxdis.2017.12.004>
- Siantz, E., Henwood, B., & Gilmer, T. (2020). Patient experience with a large-scale integrated behavioral health and primary care initiative: A qualitative study. *Families, Systems, and Health, 38*(3), 289–299. <https://doi.org/10.1037/fsh0000529>
- Sirri, L., Grandi, S., & Fava, G. A. (2008). The Illness Attitude Scales. A clinimetric index for assessing hypochondriacal fears and beliefs. *Psychotherapy and Psychosomatics, 77*(6), 337–350. <https://doi.org/10.1159/000151387>

- Skidmore, J. R., Dyson, S. J., Kupper, A. E., & Calbrese, D. (2014). Predicting illness behavior: Health anxiety mediated by locus of control. *American Journal of Health Behavior, 38*(5), 699–707. <https://doi.org/10.5993/ajhb.38.5.7>
- Skinner, B. F. (1937). Two types of conditioned reflex: A reply to Konorski and Miller. *Journal of General Psychology, 16*(1), 272–279. <https://doi.org/10.1080/00221309.1937.9917951>
- Smits, T. F., Brouwer, J. H., Zwinderman, H. A., Mohrs, J., Schene, H. A., van Weert, C. P. M. H., & Ter Riet, G. (2014). Why do they keep coming back? Psychosocial etiology of persistence of frequent attendance in primary care: A prospective cohort study. *Journal of Psychosomatic Research, 77*(6), 492–503. <https://doi.org/10.1016/j.jpsychores.2014.08.003>
- Staddon, J. E., & Cerutti, D. T. (2003). Operant conditioning. *Annual Review of Psychology, 54*, 115–144. <https://doi.org/10.1146/annurev.psych.54.101601.145124>
- Starcevic, V. (2015). Hypochondriasis: Treatment options for a diagnostic quagmire. *Australasian Psychiatry, 23*(4), 369–373. <https://doi.org/10.1177/1039856215587234>
- Stempleman, M. L., Penwell-Waines, L., & Valvano, A. (2015). Integrated care psychologists and their role in patient transition from medical to psychiatric specialty care settings: A conceptual model. *Health Psychology and Behavioral Medicine, 3*(1), 154–168. <https://doi.org/10.1080/21642850.2015.1063059>
- Stewart, S. H., & Watt, M. (2000). Illness Attitudes Scale dimensions and their associations with anxiety-related constructs in a nonclinical sample. *Behaviour*

Research and Therapy, 38(1), 83–99. [https://doi.org/10.1016/S0005-7967\(98\)00207-1](https://doi.org/10.1016/S0005-7967(98)00207-1)

Taylor, L., & Brooks, B. (2013). Strategies to manage the patient with health anxiety. *Behavioral Medicine*, 26(1), 61–62. <https://doi.org/10.1097/01720610-201301000-00014>

Tazaki, M., & Landlaw, K. (2006). Behavioral mechanisms and cognitive-behavioral interventions of somatoform disorders. *International Review of Psychiatry*, 18(1), 67–73. <https://doi.org/10.1080/09540260500467046>

Tice, J. A., Ollendorf, D. A., Reed, S. J., Shore, K. K., Weissberg, J., & Pearson, S. D. (2015). *Integrating behavioral health into primary care*. Institute for Clinical and Economic Review. <http://resource.nlm.nih.gov/101679435>

Tomenson, B., McBeth, J., Chew-Graham, C. A., MacFarlane, G., Davies, I., Jackson, J., Littlewood, A., & Creed, F. (2012). Somatization and health anxiety as predictors of health care use. *Psychosomatic Medicine*, 74(6), 656–664. <https://doi.org/10.1097/PSY.0b013e31825cb140>

Tyrer, P. & Tyrer, H. (2018). Health anxiety: Detection and treatment. *BJPsych Advances*, 24(1), 66–72. https://doi.org/10.1192/bja.2017.5_

Tyrer, P. (2018). Recent advances in the understanding and treatment of health anxiety. *Current Psychiatry Reports*, 20(49). <https://doi.org/10.1007/s11920-018-0912-0>

Tyrer, P., Cooper, S., Crawford, M., Dupont, S., Green, J., Murphy, D., Salkovskis, P., Georgina, S., Wang, D., Bhogal, S., Keeling, M., Loedbenberg, G., Seivewright, R., Walker, G., Cooper, F., Evered, R., Kings, S., Kramo, K., McNulty, A., ... Tyrer, H. (2011). Prevalence of health anxiety problems in medical clinics.

Journal of Psychosomatic Research, 71, 392–394.

<https://doi.org/10.1016/j.jpsychores.2011.07.004>

Valentijn, P. P., Schepman, S. M., Opheji, W., & Bruijnzeels, M. A. (2013).

Understanding integrated care: A comprehensive conceptual framework based on the integrative functions of primary care. *International Journal of Integrated Care*, 13(1), 1–12. <https://doi.org/10.5334/ijic.886>

Vanderlip, E. R., Rundell, J., Avery, M., Alter, C., Engel, C., Fortney, J., Liu, D., &

Williams, M. (2016). *Dissemination of integrated care within adult primary care settings: The collaborative care model*. American Psychiatric Association.

<https://www.psychiatry.org/psychiatrists/practice/professional-interests/integrated-care/implement/program-highlights>

Villadsen, A., Thorgaard, M. V., Hybel, K. A., Jensen, J. S., Thomsen, P. H., & Rask, C.

U. (2017). Health anxiety symptoms in children and adolescents diagnosed with OCD. *European Child and Adolescent Psychiatry*, 26, 241–251.

<https://doi.org/10.1007/s00787-016-0884-8>

Vistorte, A. O. R., Ribeiro, W. S., Jaen, D., Jorge, M. R., Evans-Lacko, S., & Mari, J. J.

(2018). Stigmatizing attitudes of primary care professionals towards people with mental disorders: A systematic review. *The International Journal of Psychiatry in Medicine*, 53(4), 317–338. <https://doi.org/10.1177/0091217418778620>

Warwick, H. M. & Salkovskis, P.M. (1989). Cognitive and behavioural characteristics of

primary hypochondriasis. *Scandinavian Journal of Behaviour Therapy*, 18(2), 85–92. <https://doi.org/10.1080/16506078909455848>

- Weck, F., Bleichhardt, G., & Hiller, G. (2010). Screening for hypochondriasis with the Illness Attitude Scales. *Journal of Personality Assessment*, *92*(3), 260–268.
<https://doi.org/10.1080/00223891003670216>
- Weck, F., Hofling, V., Nagel, C. L., & Neng, M. B. L. (2017). Cognitive therapy and exposure therapy for hypochondriasis (health anxiety): A 3-year naturalistic follow-up. *Journal of Consulting and Clinical Psychology*, *85*(10), 1012–1017.
<https://doi.org/10.1037/ccp0000239>
- Weck, F., Neng, M. B. J., Schwind, J., & Hofling, V. (2015). Exposure therapy changes dysfunctional evaluations of somatic symptoms in patients with hypochondriasis (health anxiety): A randomized control trial. *Journal of Anxiety Disorders*, *34*, 1–7. <https://doi.org/10.1016/j.janxdis.2015.05.008>
- Williams, A. A. (2019). The next step in integrated care: Universal primary mental health providers. *Journal of Clinical Psychology in Medical Settings*, *27*(1), 115–126.
<https://doi.org/10.1007/s10880-019-09626-2>
- Williams, J. M., McManus, F., Muse, K., & Williams, G. M. J. (2011). Mindfulness-based cognitive therapy for severe health anxiety (hypochondriasis): An interpretive phenomenological analysis of patients' experiences. *British Journal of Clinical Psychology*, *50*, 379–397. <https://doi.org/10.1111/j.2044-8260.2010.02000.x>
- Woltmann, E., Grogan-Kaylor, A., Perron, B., Georges, H., Kilbourne, A. M., & Bauer, M. S. (2012). Comparative effectiveness of collaborative chronic care models for mental health conditions across primary, specialty, and behavioral health care

settings: Systematic review and meta-analysis. *American Journal of Psychiatry*, 169, 790–804. <https://doi.org/10.1176/appi.ajp.2012.11111616>

World Health Organization. (2008). What is primary care mental health? *Mental Health in Family Medicine*, 5(1), 9–13. <https://pubmed.ncbi.nlm.nih.gov/22477841/>

APPENDIX A
RERB APPROVAL FORM

**IMMACULATA UNIVERSITY RESEARCH ETHICS REVIEW BOARD
REQUEST FOR PROTOCOL REVIEW--REVIEWER'S COMMENTS FORM
(R1297)**

Name of Researcher: Juliana Bowland

Project Title: The Treatment of Health Anxiety in Primary Care

Reviewer's Comments

Your proposal is **Exempt**. It meets the requirements set forth in 45 CFR, 46.110(b) (1) sections # 5 and 7. You may begin your research or collect your data.

Reviewer's Recommendations:

Exempt
 Expedited
 Full Review

Approved
 Conditionally Approve
 Do Not Approve

Marcia Parris

September 10, 2021

Marcia Parris, Ed.D.
Chair, Research Ethics Review Board

DATE