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Assessing Readiness to Seek Formal Mental Health Services: Development and Initial Validation of the Mental Health Belief Model Assessment (MHBMA)

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Assessing Readiness to Seek Formal Mental Health Services: Development and Initial

Validation of the Mental Health Belief Model Assessment (MHBMA)

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Curriculum and Instruction
with a concentration in Measurement and Evaluation
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Dedication

First, I would like to dedicate this dissertation to my amazing parents, Ike and Pamela Greene, who instilled in me the value of education and always told me (and still do) that I can do anything. Second, to my husband, Bruce Wolny II, whose support during this process has been invaluable and more than I ever could have hoped for. Finally, to those struggling with mental health problems who find renewed strength to face the world every day. I hope that continued research on topics related to mental health can help to make that process a little easier.

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Abstract

Only a small percentage of people with mental health issues utilize mental health services. This would seem contradictory given the increasing understanding of mental disorders, their high prevalence, and associated disability and distress. Research shows that individual level factors, such as perceptions of need, mental health knowledge, mental health attitudes, and mental health literacy, are related to individuals' decisions to seek mental health services. The Health Belief Model (HBM) posits four types of health beliefs that affect an individual's health behavior, in this case, the decision to seek mental health services. To date, researchers and clinicians have no assessment tool to empirically identify the factors affecting a particular individual's decision making about using mental health services. Therefore, the goal of this study was to develop and validate a self-report instrument, called the Mental Health Belief Model Assessment (MHBMA), designed to assess readiness to seek formal mental health services. Based on the HBM, the MHBMA includes 76 items grouped into five scales: Perceived Susceptibility and Fears, Perceived Severity, Perceived Benefits, Perceived Barriers, and Self-efficacy. A 20-item short form was also developed. The responses of a validation sample of 192 adults provided the initial evidence for reliability and validity of the MHBMA. In terms of reliability, internal consistency reliability was high for each scale, with Cronbach's alphas ranging from .90 to .97, and test-retest correlation coefficients for each scale were strong, ranging from .82 to .92. Evidence for validity was examined via test content, internal structure, and relations to other variables. Specifically, moderate to high correlations in the expected directions were found between the MHBMA and Attitudes Toward Seeking Professional Psychological Help Scale-Short Form and

the Barriers to Help Seeking Scale. The scale scores on the MHBMA were also examined in relation to a number of demographic and service use variables. Guidelines for use and interpretation on the MHBMA, delimitations and limitations of the current study, and implications for research and practice are discussed.

Chapter 1: Introduction

Only a small percentage of people with mental health issues utilize mental health services (Kessler et al., 2005; Kilbourne et al., 2018; Pescosolido & Boyer, 1999). This would seem contradictory given the increasing understanding of mental disorders, their high prevalence, and associated disability and distress (Kilbourne et al., 2018). Research has shown that individual-level factors, such as perceptions of need, mental health knowledge, mental health attitudes, and mental health literacy, are related to people's decisions to seek mental health services (Anderson, 1995; Elhai & Ford, 2007; Gonzalez et al., 2011; Jorm et al., 1997; Jorm et al., 2000; Katz et al., 1997; Olsson & Kennedy, 2010; ten Have et al., 2010). Several theoretical models of help-seeking and health behavior have also been proposed such as the Theory of Planned Behavior (TPB; Ajzen, 1985), Transtheoretical Model (TTM; Prochaska & Velicer, 1997), and the Health Belief Model (HBM; Hochbaum, 1958; Rosenstock, 1960, 1974).

Although these theories and studies have identified factors that affect service use, researchers and clinicians have no assessment tool to empirically identify the factors affecting a particular individual's decision making about using mental health services. Therefore, the goal of this study was to develop and validate a self-report instrument designed to assess readiness to seek formal mental health services (e.g., psychotherapy, group therapy, counseling).

Health Belief Model (HBM) and Mental Health Service Use

The HBM (Rosenstock, 1960, 1974), a widely used theory of health behavior, was employed as the theoretical foundation for the aforementioned self-report instrument. The HBM posits four types of health beliefs that affect an individual's health behavior, in this case, the

decision to seek mental health services: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers (Rosenstock, 1974). The HBM was selected for several reasons, for example, it has been previously utilized by a wide range of physical and mental health advocates, such as physicians, nurses, psychologists, and public health educators, to create, implement, and evaluate health behavior interventions (Glanz, Rimer, & Viswanath, 2008). Moreover, research has shown that the HBM constructs are predictive of actual behavior (Janz & Becker, 1984), providing a link between assessment and a likely behavioral outcome. However, the HBM is not without its limitations. Like the other theories focused on individual behavior, the HBM does not consider interpersonal, cultural and contextual issues that affect help seeking and focuses on the intention of the individual, rather than actual behavior and maintenance of behavior.

Though no previous research has applied the HBM to readiness to seek mental health services within the context of scale development, Henshaw and Freedman-Doan (2009) applied the model to the conceptualization of mental health. Specifically, they defined the concepts of the HBM in terms of mental health service use behaviors, with perceived susceptibility as being an individual's acceptance of a mental health diagnosis, perceived severity as being the perceived severity of mental health symptoms, perceived benefits as being the benefits of therapy, perceived barriers as being the barriers to committing to therapy, and perceived self-efficacy as being an individual's belief that they can change through therapy.

Purpose of the Study

The purpose of this study was to develop and validate a self-report instrument called the Mental Health Belief Model Assessment (MHBMA). The MHBMA was designed to assess readiness to seek formal mental health services (e.g., psychotherapy, group therapy, counseling)

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in adults who may be experiencing a mental health problem. The MHBMA was developed in accordance with the *Standards for Educational and Psychological Testing* (2014), a collaborative publication by the American Educational Research Association (AERA), American Psychological Association (APA), and the National Council on Measurement in Education (NCME).

The initial development and validation of the MHBMA included two phases. Phase 1, the development of the MHBMA, included initial item development and item revision through expert review and cognitive interviews with participants representing the study population. Phase 2, the initial validation study, included the collection of a validation sample of participants to provide initial evidence of reliability and validity of the MHBMA. These data were also used to select items to retain on the MHBMA. A short form of the MHBMA was also created, as short forms of psychological tests are commonly used in both research and clinical practice to increase testing efficiency and reduce respondent burden. Additional detailed information about the study's methodology is provided in Chapter 3.

Research Questions

The research questions focused on assessing the measurement quality (i.e., reliability and validity) of the newly created MHBMA.

1. What items best assess the construct of readiness to seek mental health services, as evidenced by item-total correlations, communality, and expert panel review?

2. What factor measurement model is supported as the most appropriate model for interpreting the Mental Health Belief Model Assessment (MHBMA)?

3. To what extent are the scores from the Mental Health Belief Model Assessment (MHBMA) reliable?

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4. To what extent is the interpretation of scores on the MHBMA a valid assessment of readiness to seek mental health services, as evidenced by test content, internal structure, and relations to other variables?

5. To what extent do adults exhibit readiness to seek mental health services?

Chapter 2: Literature Review

This chapter reviews relevant literature to describe the need and rationale for the development of the Mental Health Belief Model Assessment (MHBMA). The literature review begins by defining mental health services and providing an overview of recent trends in mental health service use. Next, dominant theories of individual health behavior that have guided empirical research and practice in improving performance of health behaviors are reviewed. These include the Theory of Planned Behavior, the Transtheoretical Model, and the Health Belief Model (HBM). Following the discussion of each theory, reasons for selection of the HBM as the theoretical underpinning of the MHBMA are provided. A review of existing measures of readiness to seek mental health services follows. However, these measures were not developed in accordance with the HBM, thus, existing measures of the HBM designed to assess readiness to perform various health behaviors were also reviewed. Finally, the relationship between HBM concepts and mental health service use is discussed. The chapter concludes with a summary of MHBMA's theoretical and empirical research underpinnings.

Definition of Mental Health Services

Pescosolido and Boyer (1999) defined mental health services as including the formal system of care (both specialty mental health care and medical care); the lay system such as friends, family and self-help groups; the folk system of religious leaders and alternative medicine; and the human-social system of clergy, police, and teachers. Generally, studies of mental health service use predictors focus on how people use the formal system of care. The formal system includes specialty mental health care, such as psychiatrists, psychologists, social

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workers, inpatient psychiatric units, and out-patient mental health programs. The formal system also includes general medical care provided via physicians in various settings (e.g., hospitals, nursing homes). The current study focused on use of formal mental health services, as opposed to lay and other networks, because formal mental health services are the only type of service with a strong empirical base for treating a wide variety of mental disorders (Seligman, 1995). Additionally, formal services have been thoroughly examined in large, nationally representative samples (Kessler et al., 2004) and reported on in annual reports by the Centers for Disease Control and Prevention (National Center for Health Statistics, 2011).

Trends in Mental Health Service Use

Results from recent studies examining trends in mental health service use via large national surveys, such as the National Comorbidity Survey-Replication (NCS-R), National Health and Nutrition Examination Survey, and Medical Expenditure Panel Surveys have revealed several changes in the way mental health services have been used over time (Druss, 2010; Kessler et al., 2005; Mojtabai & Olfson, 2014; Olfson, Blanco, & Marcus, 2016; Olfson & Marcus, 2010). Although psychotropic medication use has increased in recent decades, outpatient psychotherapy use has declined precipitously (Olfson & Marcus, 2010; Mojtabai & Olfson, 2014), in what has been described as a "sea change in the provision of mental health services" (Druss, 2010). In addition, over-treatment with psychotropic medication is on the rise, with only a minority of depressed patients receiving antidepressants experiencing serious distress. It is hypothesized clinicians may overestimate the effectiveness of antidepressants in treating mild depression and feel there is insufficient time to engage in other interventions, either for the clinician or the patient (Olfson, Blanco, & Marcus, 2016).

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On the other hand, only a small percentage of people with mental health issues utilize mental health services (Pescosolido & Boyer, 1999). In fact, more than one in four Americans are suffering from a diagnosable mental illness at any point in time, but sadly, more than two thirds of those people are never diagnosed or treated (U.S. Department of Health and Human Services, 1999). Of those who received treatment, only a third (32.7%) engaged in enough treatment visits to be deemed minimally adequate treatment (Wang et al., 2005). This would seem contradictory given the increasing understanding of mental disorders, their high prevalence, and associated disability and distress (Kessler et al., 2005).

The underutilization of services is the focus of the current study for several reasons. Research has shown that mental health treatments, such as psychotherapy, psychotropic medications, and combinations of these treatments, are effective for reducing symptoms (US Department of Health and Human Services, 1999). In addition to symptom relief, mental health treatment promotes recovery and focuses on improving social functioning and the restoration of the individual's meaningful role in society (US Department of Health and Human Services, 1999).

Given this evidence, coupled with low utilization rates, improving mental health services has become a national priority (Healthy People 2010; Healthy People 2020; President's New Freedom Commission on Mental Health, 2004). Research has focused on initiation and retention in services, with the ultimate goal of improving individuals' quality of life, as well as achieving population level outcomes, such as reducing disability and role impairment (Greene, Bina, & Gum, 2016). In order to understand low use of mental health services, many empirical studies have been conducted to identify predictors of mental health service use. Such predictors include demographic factors, perceived need for help, and knowledge, attitudes, and beliefs about mental

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health conditions and services (Greene, Bina, & Gum, 2016). Moreover, individuals were more likely to use mental health services if they did not encounter logistical barriers (e.g., limited finances, time commitment, and transportation issues) or normative-influence barriers (e.g., stigma concerns, skepticism of treatment, and lack of recognition of problems; Andrade et al., 2014; Perlick, Hofstein, & Michael, 2010). This research literature is consistent with theories of individual health behavior, which can be used to help understand why individuals do and do not perform health behaviors.

Individual Health Behavior Theories

Many theories of individual health behavior have been proposed and researched over time. This section focuses on the most dominant theories that have guided empirical research: the Theory of Planned Behavior (TPB; Ajzen, 1985), the Transtheoretical Model (TTM; Prochaska & Velicer, 1997), and the Health Belief Model (HBM; Hochbaum, 1958; Rosenstock, 1960, 1974).

Theory of Planned Behavior (TPB). This theory focuses on factors that influence an individual's intention to perform a health behavior (Ajzen, 1985). Intention is determined by three factors: attitude toward the behavior, subjective social norms, and perceived behavioral control. Attitude in this case would refer to an individual's attitude toward seeking mental health services and can range from very positive to very negative on a continuum. Subjective social norms refer to an individual's perception of how his or her reference group feels about the behavior. An example would be societal stigma regarding mental illness. Perceived behavioral control refers to an individual's assessment of how difficult it will be for him or her to perform the behavior. In the case of mental health service use, for example, negative past experiences

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with the mental health service system and its current lack of cohesiveness can lead to an individual to perceive low behavioral control to navigate the fragmented and complex system.

Transtheoretical Model (TTM). This model divides behavior change into six distinct stages of change: precontemplation, contemplation, preparation, action, maintenance, and termination. An individual in the precontemplation stage has no intention of taking action within the next six months, while an individual in the contemplation stage does intend to do so. In the preparation stage, individuals intend to take action soon, within the next few months, and have begun to take steps toward action. In the action stage, the behavior has been occurring for less than six months, while in the maintenance stage, it has been occurring for more than six months. Individuals in the termination stage are confident that they will not revert to previous behaviors, despite temptation to do otherwise.

Health Belief Model (HBM). This model posits four types of health beliefs that affect an individual's health behavior, in this case, the decision to seek mental health services: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers (Rosenstock, 1974). An individual's perceived susceptibility to the condition refers to how susceptible the individual feels to the condition (on a low to high continuum). The perceived severity of the condition refers to whether the condition is perceived to have serious consequences (morbidity and mortality). Perceived benefits refer to whether a specific action is expected to reduce the risk of acquiring the condition or the consequences of the condition. Perceived barriers refer to the whether these benefits of taking action outweigh the barriers to taking action. Barriers can include lack of time, transportation, convenience and any other factor that affects an individual's decision to take action. Individuals weigh both benefits and barriers, which help them decide whether to act. In the case of mental health service use, individuals would be more likely to

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decide to use services if they perceive themselves as susceptible to mental health problems, that mental health problems have serious consequences, and that the benefits of using services outweigh the barriers.

These individual beliefs are situated between two other components of the HBM, modifying factors and actions (Champion & Skinner, 2008). Modifying factors include age, gender, ethnicity, personality, socioeconomic status, and knowledge about mental health and services. These modifying factors are hypothesized to influence an individual's beliefs, which in turn influence their actions, seeking or not seeking services. The action component also includes cues to action, which are hypothesized to be internal or external triggering mechanisms that activate an individual's help-seeking behavior. Cues to action can range from internal acknowledgement of symptoms to overt strategies designed by researchers to activate help-seeking behavior.

Advantages of using the HBM. Though all of these theories are viable models of individual health behavior, the HBM was ultimately selected as the framework for the MHBMA. Glanz, Rimer, and Viswanath (2008) argued that theories should be selected based on the appropriateness to the specific question or purpose. The HBM fit the purpose of developing the MHBMA for several reasons. The HBM lends itself to the measurement of readiness to seek mental health services due to its explicit inclusion of the perception of severity, or in this case, symptoms. The presence and severity of symptoms are key to one's appraisal of the situation and decision to seek help. Of the theories previously described, the HBM is the only one to include the individual's perception of his or her symptoms. Moreover, research has shown that the HBM constructs are predictive of actual behavior (Janz & Becker, 1984) providing a link between assessment and a likely behavioral outcome.

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In addition, the HBM has a long history as one of the earliest theories of health behavior, originating in Lewin's (1935) seminal theory of behavior, and later, research at the U.S. Public Health Service, which focused on understanding why some individuals did not participate in disease screening programs (Hochbaum, 1958; Rosenstock, 1960, 1974). This work became the foundation for the HBM. The purpose of the theory also aligned with the purpose of the MHBMA. The theory was originally developed based upon research on disease prevention (Rosenstock, 1974), and a purpose of the MHBMA is to help individuals recognize symptoms, and assess their readiness to take action in order to prevent a worsening of symptoms. This is especially important, as mental health symptoms may not be as obvious to a person as physical illness symptoms, especially if they have not experienced them previously. Moreover, the HBM has been utilized by a wide range of physical and mental health advocates, such as physicians, nurses, psychologists and public health educators, to create, implement, and evaluate health behavior interventions (Glanz, Rimer, & Viswanath, 2008). It is easily appropriable and intuitive, as evidenced by its frequent use. Thus, it is an adaptable theory that has already shown its utility across multiple settings.

   HBM limitations. Like other theories focused on individual behavior, the HBM does not consider interpersonal, cultural and contextual issues that affect help seeking and focuses on the intention of the individual, rather than actual behavior and maintenance of behavior. In addition, it is a cognitive model and therefore does not include an explicit emotional component, in particular, fear (Witte, 1992). Research has suggested that the inclusion of fear may help explain the relationships among the HBM constructs (Rogers & Prentice-Dunn, 1997), but it has not been formally added to the HBM. To address this limitation, items for the MHBMA were written to address the construct of fear. Champion, Menon, Rawl, and Skinner (2004) developed and

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tested an eight item scale assessing the construct of fear within the HBM as it applies to breast cancer, which served as a guide for item construction.

In addition, cues to action have also been proposed as an additional component, but have not been formally included in the HBM. The construct has not been well defined in the research literature and there is lack of consensus between individuals of what constitutes a cue to action (what is for one person, may not be for another). Because cues to action are events, often external, rather than individual beliefs, they are difficult to measure psychometrically. Therefore, cues to action were not be included in the MHBMA.

Summary of individual health behavior theories. The TPB, the TTM, and the HBM are individual health behavior theories developed to elucidate the factors involved in an individual's readiness to perform a health behavior. Several commonalities exist between these models, such as the concept that perceived barriers inhibit behavior and that self-efficacy to perform the behavior increases the likelihood of the behavior. Ultimately, the HBM served as the theoretical underpinning for the MHBMA because of its appropriateness to the purpose of this measure, its ease of appropriation, and explicit inclusion of the perception of severity.

Existing Measures of the HBM

Many different types of studies have used the HBM as the theoretical foundation for the development of a measure of health behavior. One of the most well-known applications of the HBM was an instrument developed by Champion (1984, 1993) in relation to breast cancer screening behaviors. Other examples include cervical cancer screening (Guvenc, Akyuz, & Acikel, 2011), diabetes regimen compliance (Becker & Janz, 1985; Given, Given, Gallin, & Condon, 1983), osteoporosis (Kim, Horan, Gendler, & Patel, 1991), coronary heart disease (Ali, 2002), influenza vaccinations (Nexøe, Kragstrup, & Søgaard, 1999), dental care (Buglar, White,

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& Robinson, 2010), food borne illness prevention (Simon & Das, 1984), and sexually

transmitted diseases (Hanson & Benedict, 2002).

Existing Measures of Readiness to Seek Mental Health Services

There are several existing measures that broadly assess readiness to seek mental health

services. Some studies have assessed readiness to engage in help seeking for population/study

specific problems within high school students (Wilson, Deane, Ciarrochi, & Rickwood, 2005),

college students (Lopez, Melendez, Sauer, Berger, & Wyssmann, 1998), and parents of

adolescents who may be experiencing parenting problems (Raviv, Maddy-Weitzman, & Raviv,

1992). Other measures, such as the Willingness to Seek Help Questionnaire (Cohen, 1999) and

the Barriers to Help Seeking Scale (BHSS; Mansfield, Addis, & Courtenay, 2005) focus on both

mental and physical problems. The previously described measures were useful in terms of

focusing on problems specific to those populations, rather than being a general measure of

readiness to seek services, as was a goal for the development of the MHBMA. In addition to

focusing on specific problems, some studies assessed willingness by asking participants to rate

their willingness to seek services from a list of formal and informal sources (Hinson & Swanson,

1993; Raviv, Maddy-Weitzman, & Raviv, 1992; Wilson, Deane, Ciarrochi, & Rickwood, 2005).

While useful information, these measures did not assess the underlying attitudes that affect help-

seeking.

Several existing measures of readiness to seek services were used to assess the validity of

the MHBMA. The Attitudes Toward Seeking Professional Psychological Help Scale-Short Form

(ATSPPH-SF; Fischer & Farina, 1995) is a 10-item scale designed to measure positive attitudes

toward treatment. Each item is rated on a scale of 0 (*Disagree*) to 3 (*Agree*) and items are

summed to create a total score that ranges from 0 to 30, with higher scores indicating more

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favorable attitudes. Exploratory factor analysis indicated that the items tap two attitude factors: Openness to Seeking Treatment for Emotional Problems and Value and Need in Seeking Treatment. Internal consistency was high across several studies, ranging from .82 to .84 (Elhai, Schweinle, & Anderson, 2008). Test-retest reliability was .80 for the ATSPPH-SF and it exhibited a high correlation with the full scale from which it was derived, the 29-item Attitudes Toward Seeking Professional Psychological Help Scale (ATSPPH; Fischer & Turner, 1970; Fischer & Farina, 1995). The ATSPPH-SF is an appropriate measure of readiness to seek services, however, it has several limitations. The items were originally developed in 1970 (Fischer & Turner, 1970) and as such, contain antiquated language regarding mental health that may not make sense to current users. In addition, it is not explicitly theoretically based.

The Barriers to Help Seeking Scale (BHSS; Mansfield, Addis, & Courtenay, 2005) is a measure of barriers to seeking professional help for mental and physical problems in men. It contains 31 items designed to measure five clusters of barriers. Each item is rated on a scale of 0 (Not at all) to 4 (Very much) to indicate how much of a reason each item would be to not seek help for the problem. The BHSS includes a total score, as well as five scales: Need for Control and Self-Reliance, Minimizing Problem and Resignation, Concrete Barriers and Distrust of Caregivers, Privacy, and Emotional Control. In a validation sample of 537 male undergraduates, internal consistency was high, ranging from .79 to .93 for the five clusters. Test-retest reliability was assessed in a small sample ($N = 9$), with test-retest reliabilities ranging from .35 to .94. Convergent validity was assessed via the Attitudes Toward Seeking Professional Psychological Help measure (ATSPPH; Fischer & Turner, 1970). As expected, the BHSS and the ASPPH were negatively correlated, with values ranging from -.36 to -.54. The BHSS can be used as a measure of barriers to seeking services, however, it has several limitations. First, it was designed

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specifically for use with men and includes both mental and physical health problems. In addition, it is not explicitly theoretically based.

Mental Health Service Use and HBM Concepts

Though no previous research has applied the HBM to readiness to seek mental health services within the context of scale development, Henshaw and Freedman-Doan (2009) applied the model to the conceptualization of mental health. Specifically, they defined the concepts of the HBM in terms of mental health service use behaviors, with perceived susceptibility being an individual's acceptance of a mental health diagnosis, perceived severity being the perceived severity of mental health symptoms, perceived benefits as being the benefits of therapy, perceived barriers being the barriers to committing to therapy, and perceived self-efficacy being an individual's belief that they can change through therapy.

Of the HBM constructs, most research has focused on barriers to seeking services. Andrade et al. (2014) reported on the World Health Organization's World Mental Health Survey, and identified low perceived need, desire to handle the problem on one's own, perceived ineffectiveness of treatment, and negative experiences with treatment providers as the most important barriers. Other barriers identified fell into two categories: attitudinal and structural. Attitudinal barriers included negative health beliefs, misinterpretation of consequences of treatment (i.e., they believed treatment would not be helpful), stigma, embarrassment about reporting symptoms, and misinformation about mental illness (more common in culturally diverse communities or those seeking help from providers who do not speak their native language). Structural barriers included inconvenient location, inability to obtain an appointment, and lack of finances.

Perlick, Hofstein, and Michael (2010) identified a comparable framework of barriers to help seeking within young adults, including barriers relating to normative influences (stigma concerns, lack of recognition, skepticism, fear, substance use/abuse to cope with psychological distress) and logistical barriers (limited financial resources, nonresponsive services, distance, travel, time commitment). Similarly, a systematic review of barriers and facilitators to help-seeking in young people (Gulliver, Griffiths, & Christensen, 2010) found the most common barriers to be stigma, embarrassment, problems recognizing symptoms (poor mental health literacy), and a preference for self-reliance.

Summary

The purpose of this study was to develop and provide initial validation evidence of a self-report instrument designed to assess readiness to seek formal mental health services in adults, (MHBMA). Analysis of trends in mental health service use, research about barriers to help-seeking, and individual health behavior theories informed the constructs and the development of items to assess those constructs. Thus, the MHBMA incorporates both theory and empirical literature to provide a comprehensive measure of readiness to seek mental health services.

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Chapter 3: Methods

The purpose of this study was to develop and validate a self-report instrument designed to assess readiness to seek formal mental health services (e.g., psychotherapy, group therapy, counseling) in adults who may be experiencing a mental health problem. This chapter provides a description of the rationale and research design, which included two phases. Phase 1, the development of the Mental Health Belief Model Assessment (MHBMA), included initial item development and item revision through expert review and cognitive interviews with participants representing the study population. Phase 2, the initial validation study, is also described, including participants, measures, procedures, and data analysis.

Research Design/Approach

The rationale for the research design was guided by *Standards for Educational and Psychological Testing*, a collaborative publication by the American Educational Research Association, American Psychological Association and the National Council on Measurement in Education (2014). Considered a gold standard publication by test developers, it includes guidelines for the development of new tests, such as the test design and development of normative scores, as well as guidelines for establishing the reliability and validity of such measures.

The research design was also aligned with classical test theory, a measurement theory and a classic approach to test development in which the concepts of reliability and validity are embedded. Therefore, the research design utilized another gold standard text, *Introduction to Classical & Modern Test Theory* by Crocker and Algina (1986), which explicates classical test

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theory and provides concrete applications of the theory. It provides an overview of test construction process, which includes the following steps:

1. Identify purpose(s)

2. Define construct and content domain

3. Create framework

4. Generate initial item pool

5. Expert and layperson review of items (revise)

6. Pretest items (preliminary tryouts; revise)

7. Pilot tests with representative samples (reliability, validity, utility, practicality)

8. Continue to conduct studies on how the test is functioning

9. Develop guidelines for administration, scoring, and interpreting the scores

These steps are elucidated further in the upcoming sections.

Phase 1: Development of the Mental Health Belief Model Assessment (MHBMA)

Procedures. As suggested by Crocker and Algina (1986), creating the MHBMA began by identifying its purpose, followed by defining the construct and content domains to be assessed, creating a framework/test specifications and generating the initial pool of items. Chapters 1 and 2 describe the purpose of the study, to design an instrument that assesses an individual's readiness to seek mental health services. Chapter 2 defines the construct of readiness to seek mental health services in terms of a widely used theory of health behavior, the Health Belief Model (HBM). Therefore, the framework/test specification included writing items corresponding to the HBM concepts: Perceived Susceptibility, Perceived Severity, Perceived Benefits, Perceived Barriers, Self-Efficacy, and Fears.

Initial item development. Initial items were developed to capture constructs of the HBM by reviewing the existing HBM measures and existing mental health measures described in Chapter 2. Topics for Perceived Barriers scale items were drawn from systematic reviews and international surveys of barriers to mental health service use (Andrade et al., 2014; Gulliver, Griffiths, & Christensen, 2010; Perlick, Hofstein, & Michael, 2010). The first version of the MHBMA included 112 items: 12 within the Perceived Susceptibility construct, 17 within the Perceived Severity construct, 16 within the Perceived Benefits construct, 48 within the Perceived Barriers construct, 11 within the Self-Efficacy construct, and eight within the Fears construct (see Appendix A).

Item revision through expert review. Next, the items were submitted to expert panel review to assess item quality. The expert panel consisted of seven individuals, and included USF faculty members, advanced doctoral students in USF's Clinical Psychology program providing clinical services at the USF Psychological Services Center, and a member of the Research and Development department at Psychological Assessment Resources. These individuals have backgrounds in clinical psychology, counseling, test development, and educational measurement. The panel included men and women from varying ethnic backgrounds.

The expert reviewers served as a means of gathering evidence of content and construct validity of the items. Each expert was provided the MHBMA items in Appendix A and asked to provide written feedback about each item, the overall measure, the instructions, and the response scale via the expert panel rating form (see Appendix B). The expert panel rating form was developed based on recommendations in Crocker and Algina (1986) that each item be reviewed for accuracy, appropriateness, lack of construction flaws, grammar, offensiveness/bias, and readability. Specifically, the expert reviewers were asked to rate each item based on the

following criteria: (a) the quality of the item; (b) the degree to which the item represented the associated construct; (c) the face validity of the item; and (d) potential bias or other problems. Based on these ratings, revisions were made to existing items, new items were added, and items were removed due to redundancy (see Table 3.1). Some items were moved between scales to ensure that similar items were on the same scale.

Table 3.1

Mental Health Belief Model (MHBMA) Item Revisions Based on Expert Panel Review

Scale	Initial item pool	Items Added	Items Removed	MHBMA Version 2
Perceived Susceptibility	12	0	5	7
Fears	8	5 (includes 1 from Perceived Severity)	1	12
Perceived Severity	17	2 (from Perceived Barriers)	7 (includes 1 moved to Fears scale)	12
Perceived Benefits	16	6 (includes 3 moved from Self-Efficacy)	0	22
Perceived Barriers	48	0	6 (includes 2 moved to Perceived Severity)	42
Self-efficacy	11	3	3 (moved to Perceived Benefits)	11
Total	112			106

The items were also assessed for potential bias and offensiveness against protected groups (e.g., groups based on racial/ethnic background, sexual orientation, gender). Bias can be reflected as either (a) differential patterns of endorsement as a result of demography; or (b) content that is offensive and/or confusing to protected groups. Each item was rated on the

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following criteria: (a) Determine if the item is offensive to a member of a protected group, if so, which group is of concern?; (b) Why is the item biased?; and (c) What can be done to eliminate bias? Eleven items were flagged by one or more reviewers as potentially biased and were revised based on the expert panel feedback.

Next, the expert panel gave feedback on the type of Likert scale used. Both a 4 point option (Strongly Disagree, Disagree, Agree, Strongly Agree) and a 5 point option (Neutral was added to the response options) were presented. Ultimately, the five point option was selected due to consensus among the expert panel and based on Matell and Jacoby's (1972) conclusions that "internal consistency, test-retest stability, concurrent validity, predictive validity, and proportion of the scale used (this investigation) are independent of the number of response categories provided" and that the decision depends "primarily on the purposes of the research and proclivities of the researcher" (p. 508). In addition, Neutral was revised to Neither Agree Nor Disagree.

The expert panel also gave feedback about the MHBMA instructions. The original instructions were "Think about a mental health problem that you, or someone you know, are experiencing or may have experienced in the past. While thinking about this situation, read each statement carefully and indicate how much you agree with each statement." The instructions were modified to include shorter sentences and be more specific. In addition, the reading level was lowered to a 7th grade level. The most substantial change was tailoring the instructions for each section and providing a short description of the some of the terms used in the items. For the Perceived Susceptibility and Fears scales, the instructions were updated to "Below are statements about mental health problems. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life. Please read each statement carefully and rate how much you agree

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or disagree with it." Beginning with the next scale on the MHBMA, Perceived Severity, the participant was asked to imagine they are currently having a mental health problem: "Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life. While thinking about that situation, please read each statement carefully and rate how much you agree or disagree with it." The last three scales, Perceived Benefits, Perceived Barriers, and Self-Efficacy, asked the participants to continue imagining they are having a mental health problem, while considering statements about going to therapy for a mental health problem: "Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life. Below are statements about going to therapy for a mental health problem. By *therapy*, we mean talking about a mental health problem with a mental health professional, such as a psychiatrist, psychologist, social worker, or counselor. Similarly, a *therapist* is a general term for any mental health professional. Please read each statement carefully and rate how much you agree or disagree with it."

Cognitive interviews. In addition, the items and instructions were pretested with cognitive interviewing, following the guidelines provided in Caspar, Lessler, and Willis (1999). Interviews were conducted with four adults via the think-aloud method. Table 3.2 presents the demographic characteristics for each cognitive interviewing participant. Each participant was given the option to perform the think-aloud method either as he or she was responding to the item (concurrently) or after responding to the item (retrospectively). The interviewer probed for additional details, such as suggested wording changes, as needed. Based on the information obtained in the interviews, some items were revised and some items were moved around within the scales so that the order made more sense. Based on feedback from the expert panel and

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cognitive interviews, Version 2 of the MHBMA, consisting of 106 items, was utilized for the

initial validation study (see Appendix C).

Table 3.2

Cognitive Interviewee Demographics

Interviewee	Age	Gender	Race/Ethnicity	Self-Reported Mental Health Problem
1	36	Male	Caucasian	Yes, In the Past
2	55	Female	Caucasian	Yes, In the Past and Currently
3	50	Female	Caucasian	No
4	28	Female	Caucasian	No

Phase 2: Initial Validation Study

Participants. Approval for this study was obtained from the University of South Florida

(USF) Institutional Review Board (IRB; see Appendix D). Participants were recruited via emails

to USF listservs, social media postings, and flyers in the Tampa Bay area. Participants were also

recruited via Mechanical Turk (MTurk), an online service through Amazon that allows users to

request individuals to complete tasks, such as taking an online survey. A study by Buhrmester,

Kwang, and Gosling (2011) evaluated MTurk for its utility in social science research and found

it to produce data at least as reliable as data obtained by traditional methods, while providing

access to a diverse participant pool. Recruitment method results are reported in Table 3.3.

Inclusion criteria included being 18 years or older in age and living in the community. All

participants were entered in a drawing held at the end of the study for a $25 Amazon gift card.

Sample size. The number of participants sought was based on consideration of the

analysis of interest, namely, an exploratory factor analysis (EFA). The amount of error in factor

loadings of EFA is impacted by the sampling method, the communality between variables, and

variable to factor ratios, therefore, these were the aspects assessed. Given the moderate

communality expected between variables, the convenience sampling method used in this study,

Table 3.3

Participant Response Results by Method

Method	<u>*n*</u>	<u>%</u>
Facebook	7	3.6
Word of Mouth	12	6.3
Email	48	25.0
Mechanical Turk	122	63.5
No Response	3	1.6

N = 192.

and the high overdetermination expected for the final pool of items (5 or 6 factors indicated by a total of 50 to 60 items), a sample size that results in an *N* (sample size) to p (number of variables) ratio of between 3 and 6 was recommended (MacCallum, Widaman, Zhang, & Hong, 1999). Thus, the goal was to recruit at least three times the number of participants as the number of items included in the scale, approximately 150. Data collection occurred for approximately one month.

   Participant demographics. Table 3.4 presents the demographic characteristics of the sample (*N* = 192). Most participants were female (65.6%), with a mean age of 36 years (*SD* = 13.09). The sample was racially and ethnically diverse as well as was well-educated, with 27.6% currently pursuing a college or graduate degree. Of non-students, most participants (73.0%) had completed a college or graduate degree.

   Measures. Five measures were used during the validation phase of this study. The following section includes a description of each measure**.**

   Demographics and service use questionnaire. Participants completed questions about their demographic information, general mental health attitudes, and mental health history and service use (see Appendix E).

   Mental Health Belief Model Assessment (MHBMA). Phase I of this study developed the

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MHBMA utilized in Phase 2 of this study (Version 2, $k = 106$; see Appendix C). The MHBMA assesses the six constructs of the HBM: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy and fears. Participants indicate how much they agree or disagree with each statement on a scale of 0 to 4 (0 = Strongly Disagree, 1 = Disagree, 2 = Neither Agree Nor Disagree, 3 = Agree, 4 = Strongly Agree). Evidence of reliability and validity of the MHBMA was gathered during Phase 2 of this study.

World Health Organization Well-Being Index (WHO-5). General mental health status was assessed by the 5-item World Health Organization Well-Being Index (WHO-5; Staehr Johansen, 1998; Topp, Ostergaard, Sondergaard, & Bech, 2015), a global rating scale measuring subjective well-being (refer to Topp, Ostergaard, Sondergaard, & Bech, 2015 for the items). Each item is rated on a scale of 0 to 5 (0 = *At no time*, 5 = *All of the time*) to indicate how often the participant has felt that way over the past two weeks. The raw score (ranging from 0 to 25) is multiplied by four to product the final score, ranging from 0 to 100, with 0 representing the worst imaginable well-being and 100 representing the best imaginable. The reliability and validity of the WHO-5 has been established in a variety of populations and in hundreds of studies worldwide (Topp, Ostergaard, Sondergaard, & Bech, 2015). The internal consistency in this study was .92.

Attitudes Toward Seeking Professional Psychological Help Scale-Short Form (ATSPPH-SF). Convergent validity was assessed via Attitudes Toward Seeking Professional Psychological Help Scale-Short Form (ATSPPH-SF; Fischer & Farina, 1995), a measure of mental health treatment attitudes originally developed by Fischer and Turner (1970). The ATSPPH-SF is a 10-item scale designed to measure positive attitudes toward treatment. See Fischer and Farina (1995) for the ATSPPH-SF items.

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Table 3.4

Demographic Characteristics of the Mental Health Belief Model Assessment (MHBMA)
Validation Sample

Characteristic	n	%
N	192	
Age (years)		
M	35.64	
SD	13.09	
Range	19-72	
No Response	2	
Gender (%)		
Male	64	33.3
Female	126	65.6
No Response	2	1.0
Race/Ethnicity (%)		
Caucasian	100	52.1
African American	25	13.0
Hispanic	21	10.9
Other[a]	44	22.9
No Response	2	1.0
Current Student		
Yes	53	27.6
No	137	71.4
No response	2	1.0
Year in School[b]		
Freshman in College	2	3.8
Sophomore in College	4	7.5
Junior in College	8	15.1
Senior in College	12	22.6
1st Year of Graduate School	9	17.0
2nd Year of Graduate School	7	13.2
3rd Year of Graduate School	3	5.7
4th Year of Graduate School	3	5.7
5th Year of Graduate School	2	3.8
6th Year of Graduate School	0	0.0
7th Year or Higher of Graduate School	2	3.8
No Response	1	1.9
Highest Level of Education Completed[c]		
GED	1	0.7
High School Diploma	21	15.3
Technical or Vocational Program	13	9.5
College Degree (e.g., 4-year B.A. or B.S.)	62	45.3
Graduate Degree (e.g., M.A., M.S., M.D., or Ph.D.)	38	27.7

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Table 3.4 (Continued)

No Response	2	1.5

[a] Consists of American Indian/Alaskan Native, Asian, and multi-racial participants.
[b]$n = 53$; [c]$n = 137$.

Each item is rated on a scale of 0 (*Disagree*) to 3 (*Agree*) and items are summed to create a total score that ranges from 0 to 30, with higher scores indicating more favorable attitudes. EFA results indicate that the items tap two attitude factors: Openness to Seeking Treatment for Emotional Problems and Value and Need in Seeking Treatment. Internal consistency was high across several studies, ranging from .82 to .84 (Elhai, Schweinle, & Anderson, 2008). The internal consistency in this study was similar, .80 for the Total Score, .75 Openness to Seeking Treatment for Emotional Problems and .84 for Value and Need in Seeking Treatment. Test-retest reliability was .80 and the scale correlates .87 with the full scale (Fischer & Farina, 1995).

Barriers to Help Seeking Scale (BHSS). Convergent validity was also assessed via the Barriers to Help Seeking Scale (BHSS; Mansfield, Addis, & Courtenay, 2005), a measure of barriers to seeking professional help for mental and physical problems in men. The BHSS is a 31-item scale designed to measure five clusters of barriers to seeking professional help for mental and physical problems in men. See Mansfield, Addis, and Courtenay (2005) for the BHSS items. Each item is rated on a scale of 0 to 4 (0 = *not at all*, 4 = *very much*) to indicate how much of a reason each item would be to not seek help for the problem. The BHSS includes a total score, as well as five scales: Need for Control and Self-Reliance, Minimizing Problem and Resignation, Concrete Barriers and Distrust of Caregivers, Privacy, and Emotional Control. In a validation sample of 537 male undergraduates, internal consistency was high, ranging from .79 to .93 for the five scales. The internal consistency in this study was similar, .91 for the Total Score, and ranging from .72 to .81 for the five scales. Test-retest reliability was assessed in a

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small sample ($N = 9$), with test-retest reliabilities ranging from .35 to .94 (Mansfield, Addis, & Courtenay, 2005).

Procedures. Emails were sent to various USF classes and professional listservs known to the principal investigator during June and July of 2017. Participants were also recruited from MTurk. The email included a link to an online survey that contained the informed consent form and the five measures described previously. At the end of the survey, participants were directed to various services (e.g., 911, 211, Crisis Center, USF Psychological Services Center, USF Counseling Center) if they were feeling distressed.

Data were monitored during data collection to assure the quality of the data. First, cases were removed if they were incomplete (i.e., the participant opened the survey link but did not complete any of the items). Cases were also removed if they were missing more than 20 items from the MHBMA (resulting in completing less than 80% of the 106 items). In addition, several indicators of validity were used. First, cases were removed if they were completed in less than five minutes. In addition, several items (which are not a part of the MHBMA) were included throughout the survey to assess for invalid responding. These items were intended to be infrequently endorsed and indicate that the participant was not giving adequate attention to the survey. An example of an infrequency item would be "I don't know my own name," in that most participants, if they are thoughtfully reading and answering every question, would never endorse that item. See Table 3.5 for the list of infrequency items used. Cases were removed if more than one infrequency item was endorsed as Agree or Strongly Agree. The demographic breakdown of the participants was also monitored frequently throughout data collection in order to ensure individuals of various ages, gender, race/ethnicity and education levels were participating.

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Table 3.5

Infrequency Items

Item
I don't know my own name
I have never seen a car.
I can't remember when my birthday is.
The sky is green.
I have never slept before.
I come from another planet.

Test-retest study. Twenty percent of respondents were asked to complete a second MHBMA for the test-retest reliability analyses. Systematic random sampling was used by sending an emailed link with a participant ID (assigned by the principal investigator) to each 5th respondent that would be used to link the participant's first and second tests. This link was sent to participants approximately 2-4 weeks after the initial response was received. If one of the retest participants did not respond, then the next participant who completed the survey (e.g., 6th respondent) was contacted to participate in the test-retest study using the same procedures. All participants who completed the second MHBMA were entered in a drawing for another $25 Amazon gift card.

Data Analysis.

Data cleaning. A total of 254 cases were collected. Twenty cases were removed due to being incomplete (i.e., the participant opened the survey link but did not complete any of the items). Twenty four cases were removed due to having more than 20 items missing from the MHBMA. Eighteen cases were removed due to validity concerns, either completing the survey in less than five minutes or endorsing infrequency items. Nineteen cases had small amounts of missing data, ranging from 1 to 7 missing items, which were filled in with the mean response of the scale for that individual in order to create total scores for each scale. Of the 106 MHBMA

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Version 2 items, 77 items had no missing data, 26 items had 0.5% missing data (missing for 1 participant), and 3 items had 1.6% missing data (missing for 2 participants). Missing data for the BHSS was filled in similarly, while missing data for the ATSPPH-SF was filled in via series mean replacement (i.e., missing data is filled in with the mean of the scale, rather than the mean response of the scale) as specified in Elhai, Schweinle, and Anderson (2008). The data cleaning resulted in a sample of 192 participants which was used for all subsequent analyses.

Statistical analysis. Statistical Package for the Social Sciences 23.0 (SPSS) was used for all statistical analyses unless otherwise stated. Basic assumptions of statistical analysis include that scores are normally distributed and independent. Evidence of normality was obtained by examining the skewness and kurtosis of the scores. Values for both would be 0 if the scores are perfectly normally distributed. For real-world applications, values between -3 and 3 are usually considered acceptable. Evidence of independence is obtained by examining the study design. Since participants were recruited from the community and completed the instrument online at their convenience, it is unlikely that the participants' responses influenced each other.

The first research question "What items best assess the construct of readiness to seek mental health services, as evidenced by item-total correlations, communality, and expert panel review?" was assessed by conducting initial item analyses to identify poorly performing items. Initial item analyses explored various aspects of the items and scales, including the means, standard deviations, skew, and kurtosis for each item, item-total correlations, and Cronbach's alpha if item deleted.

An exploratory factor analysis (EFA) using principal axis factoring with a promax rotation was also conducted to identify poorly performing items. The communality – the proportion of the variance for the observed variable that is associated with the common factors

variance – of each item was examined. Items with low communality are considered poor items that do not fit well with any factor and were removed from the final set of items. In addition, a six factor confirmatory factor analysis (CFA) was conducted to gauge how well the items mapped onto each scale. The analysis was conducted in IBM SPSS Amos 22 (Arbuckle, 2013). Specifically, modification indices were examined to see if items had correlated errors. This information was used to guide decisions about removing redundant items. After these analyses, Dr. Amber Gum, a member of the expert panel who is a clinical psychologist, reviewed the items selected to ensure content coverage.

Short forms of psychological tests (for example, the ATSPPH-SF) are commonly used in both research and clinical practice to increase testing efficiency and reduce respondent burden. Therefore, both a full length version of the MHBMA and a short form version were developed. Items were selected for the MHBMA Short Form version, composed of items from the Perceived Benefits and Perceived Barriers scales, to measure general positive and negative attitudes toward mental health services. First, in order to ensure adequate content coverage, each Perceived Benefits item and Perceived Barriers item was coded into a broad category. Next, items from each category with high item-total correlations were selected for inclusion. It is important to note that the loss of measurement precision and reliability associated with short forms may result in decision errors, so use of the short form should be used in certain circumstances only (e.g., as an initial screener to determine the need for further assessment, rather than representative of a comprehensive assessment).

The second research question "What factor measurement model is supported as the most appropriate model for interpreting the MHBMA?" was assessed by conducting an EFA on the final set of items. Several criteria, such as the scree plot, Kaiser's (1960) criterion, and parallel

analysis, were used to assess the number of factors to extract. Factor loadings for each item were examined, with the .4 cutoff used as a guideline for what items to keep on a scale. At this time, the data were also scored to create scale scores based on the factors from the EFA: Perceived Susceptibility and Fears, Perceived Severity, Perceived Benefits, Perceived Barriers, and Self-Efficacy. For each scale, the score was calculated as the mean of the items on the scale.

The third research question "To what extent are the scores from the MHBMA reliable?" was assessed by examining the reliability of the measure. Reliability refers to an instrument's ability to measure an individual's performance over repeated administrations and to obtain consistent results over time. Several types of reliability, internal consistency and test-retest reliability, were assessed. Internal consistency was assessed with Cronbach's alpha and item-total correlations for the final set of items. Test-retest reliability was also assessed using a sample of 27 participants. Means, standard deviations and absolute mean change and correlations between testing sessions for each scale were analyzed. Paired samples *t*-tests were conducted to ensure that the mean differences between testing sessions were small and not statistically significant.

The fourth research question "To what extent is the interpretation of scores on the MHBMA a valid assessment of readiness to seek mental health services, as evidenced by test content, internal structure, and relations to other variables?" was assessed by examining several types of validity of the MHBMA. Validity generally refers to the extent to which a test measures what it purports to measure. Evidence for validity includes evidence based on test content, evidence based on response processes, evidence based on internal structure, evidence based on relations to other variables, and consequences of testing. Evidence based on test content, evidence based on internal structure, and evidence based on relations to other variables were

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examined in this study. Evidence for test validity involved an expert review of the developed items, discussed in more detail previous section of this chapter about initial item development and revision. Evidence of internal structure can be measured in several ways, via factor analysis and examining the intercorrelations between scales.

Evidence based on relations to other variables was obtained by evaluating patterns of correlations between the MHBMA and similar measures, the ATSPPH-SF and BHSS. Similarly, to examine the relationship between MHBMA scales and readiness to seek services, participants were asked the following question: If you had a mental health problem, how likely would you be to go to therapy? The response scale ranged from 1 to 4, with 1 indicating "Definitely go," 2 indicating "Probably go," 3 indicating "Probably not go," and 4 indicating "Definitely not go."

The fifth research question "To what extent do adults exhibit readiness to seek mental health services?" was addressed by examining the mean endorsement rates of each scale for the overall sample. In addition, differences in mean endorsement rates were examined by gender, age, race/ethnicity, participant type, subjective well-being (as assessed by the WHO-5, using a cut-score of ≤ 50 as indicative of depression; Topp, Ostergaard, Sondergaard, & Bech, 2015), current and past mental health service use. Service use was defined as endorsement of either seeing a professional or taking medication for a mental health problem, or both. These differences were assessed via independent samples *t*-test or ANOVA, depending on the number of groups in the analysis. Cohen's *d* effect size (Cohen, 1988) was also calculated for each difference. Cohen's *d* was calculated using the following formula, where M_1 is the mean of group 1, M_2 is the mean of group 2, and S_p is the pooled standard deviation.

$$M_1 - M_2 / S_p$$

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According to guidelines set forth in Cohen (1988), an effect size of 0.20 is considered small, an effect size of 0.50 is considered medium, and an effect size of 0.80 is considered large.

Chapter 4: Results

The purpose of this study was to develop a measure of readiness to seek formal mental health services, the Mental Health Belief Model Assessment (MHBMA). Chapter 3 provided detailed information regarding the development of the MHBMA, from conceptualization through item development and revision. This study also aimed to provide preliminary data to support the reliability and validity of score interpretation of the MHBMA. This chapter describes the data gathered to provide this evidence and reports the results of statistical analyses related to each research question, beginning with item characteristics and followed by evidence of factor structure via principal axis factoring, evidence of reliability and validity, and scale level endorsement on the MHBMA in the validation sample.

Research Question 1: What items best assess the construct of readiness to seek mental health services, as evidenced by item-total correlations, communality, and expert panel review?

Descriptive statistics, including mean, standard deviation, skewness, and kurtosis, were calculated for each of the 106 MHBMA-Version 2 items (see Table 4.1). Most items demonstrated relatively symmetrical and normal distribution of scores around the mean with skewness and kurtosis values between -1.00 and +1.00, with several items displaying slight skewness or kurtosis, with values -2.00 and -1.00 or +1.00 and +2.00. No items showed considerable positive or negative skew (values less than -2.00 or greater than +2.00). No items showed considerable negative kurtosis (values less than -2.00). Only items on the Perceived Benefits scale (BEN3, BEN9, BEN13, BEN14, BEN15, BEN17, BEN18, BEN20, and BEN22)

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Table 4.1

MHBMA-Version 2 Item Pool Characteristics

| | % Endorsed | | | | | | | | |
Scale/Item	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	M	SD	Skew	Kurtosis
Perceived Susceptibility									
SUS1	7.3	22.9	18.8	40.1	10.9	2.24	1.14	-0.34	-0.88
SUS2	12.0	30.2	20.3	27.1	10.4	1.94	1.21	0.07	-1.06
SUS3	4.7	18.2	18.2	43.2	15.6	2.47	1.10	-0.51	-0.59
SUS4	16.7	32.8	15.6	25.0	9.9	1.79	1.27	0.21	-1.14
SUS5	8.3	21.4	20.3	34.9	15.1	2.27	1.20	-0.30	-0.92
SUS6	13.0	20.8	19.8	27.6	18.8	2.18	1.32	-0.19	-1.13
SUS7	9.9	19.8	18.8	38.0	13.5	2.26	1.21	-0.38	-0.89
Fears									
FEAR1	3.6	25.0	17.2	40.6	13.5	2.35	1.11	-0.29	-0.95
FEAR2	8.3	29.7	19.3	30.2	12.5	2.09	1.20	-0.02	-1.09
FEAR3	10.4	33.9	19.8	25.0	10.9	1.92	1.20	0.17	-1.04
FEAR4	11.5	30.7	23.4	24.5	9.9	1.91	1.19	0.13	-0.96
FEAR5	16.7	35.9	19.8	17.7	9.9	1.68	1.23	0.41	-0.85
FEAR6	10.4	30.2	18.2	31.8	9.4	1.99	1.19	-0.03	-1.10
FEAR7	11.5	33.3	15.1	26.0	14.1	1.98	1.27	0.12	-1.20
FEAR8	20.8	34.4	19.3	15.6	9.9	1.59	1.25	0.47	-0.82
FEAR9	19.3	36.5	17.7	19.3	7.3	1.59	1.21	0.42	-0.85
FEAR10	12.0	32.3	26.6	22.4	6.8	1.80	1.12	0.19	-0.81
FEAR11	27.6	39.6	16.1	14.1	2.6	1.24	1.09	0.66	-0.40
FEAR12	26.0	34.4	14.6	16.7	8.3	1.47	1.27	0.55	-0.82
Perceived Severity									
SEV1	2.1	11.5	24.5	44.8	17.2	2.64	0.97	-0.55	-0.12
SEV2	2.6	19.3	21.4	41.7	15.1	2.47	1.05	-0.39	-0.69
SEV3	1.6	5.2	17.2	56.8	19.3	2.87	0.84	-0.94	1.42
SEV4	1.0	12.5	23.4	45.8	17.2	2.66	0.94	-0.48	-0.32
SEV5	1.6	5.7	20.8	54.2	17.7	2.81	0.85	-0.81	0.99
SEV6	1.6	5.2	18.8	47.9	26.6	2.93	0.90	-0.83	0.76
SEV7	1.6	13.0	21.9	42.7	20.8	2.68	1.00	-0.51	-0.38
SEV8	0.5	7.3	20.8	47.9	23.4	2.86	0.88	-0.58	0.02
SEV9	1.6	10.4	32.8	38.0	17.2	2.59	0.95	-0.30	-0.32
SEV10	4.2	14.6	24.0	39.6	17.7	2.52	1.07	-0.49	-0.43
SEV11	3.1	14.6	21.9	42.2	18.2	2.58	1.05	-0.53	-0.39
SEV12	1.0	9.9	17.7	48.4	22.9	2.82	0.93	-0.70	0.08
Perceived Benefits									

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Table 4.1 (Continued)

BEN1	3.1	6.8	16.7	51.0	22.4	2.83	0.96	-0.98	0.96
BEN2	2.1	4.7	10.9	53.1	29.2	3.03	0.88	-1.20	1.94
BEN3	1.6	4.2	9.9	51.6	32.8	3.10	0.85	-1.21	2.06
BEN4	1.6	5.7	17.7	46.9	28.1	2.94	0.91	-0.85	0.69
BEN5	2.6	5.2	12.5	55.7	24.0	2.93	0.90	-1.18	1.82
BEN6	1.6	6.3	18.2	50.5	23.4	2.88	0.89	-0.83	0.76
BEN7	1.6	4.7	16.1	52.6	25.0	2.95	0.86	-0.95	1.29
BEN8	1.6	2.6	15.1	53.1	27.6	3.03	0.82	-1.02	1.89
BEN9	2.1	3.1	12.0	52.6	30.2	3.06	0.86	-1.22	2.27
BEN10	1.6	3.1	17.2	55.7	22.4	2.94	0.81	-0.96	1.77
BEN11	2.1	4.2	14.1	55.2	24.5	2.96	0.86	-1.11	1.88
BEN12	2.1	5.7	15.6	54.2	22.4	2.89	0.89	-1.01	1.33
BEN13	2.1	4.2	9.9	62.0	21.9	2.97	0.82	-1.33	2.86
BEN14	1.6	1.6	12.0	50.0	34.9	3.15	0.81	-1.19	2.48
BEN15	2.1	3.1	10.9	58.9	25.0	3.02	0.82	-1.29	2.85
BEN16	2.6	6.3	27.1	45.8	18.2	2.71	0.93	-0.67	0.50
BEN17	1.0	3.6	9.9	59.9	25.5	3.05	0.77	-1.13	2.47
BEN18	2.1	4.2	13.0	55.7	25.0	2.97	0.86	-1.15	2.02
BEN19	3.6	4.2	12.5	43.2	36.5	3.05	0.99	-1.26	1.55
BEN20	2.1	4.7	6.8	58.9	27.6	3.05	0.85	-1.40	2.85
BEN21	2.1	3.1	14.6	50.0	30.2	3.03	0.87	-1.11	1.80
BEN22	2.6	2.1	9.9	50.0	35.4	3.14	0.87	-1.43	2.96
Perceived									
Barriers									
BAR1	4.7	23.4	22.9	39.1	9.9	2.26	1.07	-0.28	-0.81
BAR2	8.9	25.5	22.9	30.2	12.5	2.12	1.19	-0.10	-0.98
BAR3	8.3	24.5	29.7	24.0	13.5	2.10	1.17	0.01	-0.85
BAR4	19.3	46.9	20.8	7.8	5.2	1.33	1.04	0.86	0.43
BAR5	3.1	5.2	26.0	51.6	14.1	2.68	0.89	-0.86	1.10
BAR6	12.5	38.0	17.7	25.0	6.8	1.76	1.16	0.27	-0.98
BAR7	15.1	37.5	25.5	13.5	8.3	1.63	1.15	0.50	-0.49
BAR8	9.9	28.1	23.4	28.6	9.9	2.01	1.17	-0.01	-0.97
BAR9	14.1	28.6	17.2	29.2	10.9	1.94	1.26	0.01	-1.16
BAR10	19.8	42.2	12.5	17.7	7.8	1.52	1.22	0.59	-0.71
BAR11	12.5	43.2	19.3	19.3	5.7	1.63	1.10	0.48	-0.64
BAR12	5.2	22.9	29.7	31.8	10.4	2.19	1.07	-0.13	-0.72
BAR13	3.6	13.5	22.4	49.0	11.5	2.51	0.99	-0.67	-0.03
BAR14	16.7	39.1	17.7	18.2	8.3	1.63	1.20	0.46	-0.78
BAR15	20.3	26.0	22.9	22.9	7.8	1.72	1.24	0.15	-1.06
BAR16	21.4	38.5	21.9	13.5	4.7	1.42	1.11	0.56	-0.41
BAR17	14.6	29.7	32.3	14.1	9.4	1.74	1.16	0.32	-0.59
BAR18	15.6	37.0	20.3	17.7	9.4	1.68	1.21	0.42	-0.80
BAR19	26.6	35.4	14.1	17.2	6.8	1.42	1.24	0.57	-0.77
BAR20	39.6	35.9	10.9	10.4	3.1	1.02	1.10	1.02	0.23
BAR21	29.2	33.9	17.7	15.1	4.2	1.31	1.17	0.59	-0.62

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Table 4.1 (Continued)

BAR22	26.6	37.0	17.7	14.1	4.7	1.33	1.15	0.63	-0.48
BAR23	19.8	35.4	24.5	14.1	6.3	1.52	1.14	0.48	-0.54
BAR24	26.0	25.0	17.2	21.4	10.4	1.65	1.35	0.27	-1.19
BAR25	21.9	31.3	20.8	19.8	6.3	1.57	1.21	0.33	-0.92
BAR26	20.3	41.1	19.8	10.4	8.3	1.45	1.17	0.72	-0.26
BAR27	32.8	33.3	12.5	17.2	4.2	1.27	1.21	0.65	-0.71
BAR28	22.9	33.9	18.2	18.2	6.8	1.52	1.22	0.44	-0.85
BAR29	19.3	41.1	21.4	12.5	5.7	1.44	1.11	0.63	-0.28
BAR30	18.8	39.6	18.8	16.7	6.3	1.52	1.16	0.52	-0.62
BAR31	31.3	40.6	13.5	7.3	7.3	1.19	1.17	1.02	0.30
BAR32	13.5	27.1	18.2	32.8	8.3	1.95	1.22	-0.09	-1.13
BAR33	21.4	36.5	28.6	9.4	4.2	1.39	1.05	0.54	-0.15
BAR34	15.6	38.0	15.6	24.0	6.8	1.68	1.19	0.32	-0.99
BAR35	24.5	34.9	20.3	16.1	4.2	1.41	1.15	0.49	-0.68
BAR36	20.8	42.7	18.8	13.5	4.2	1.38	1.09	0.65	-0.28
BAR37	46.9	32.8	12.5	5.7	2.1	0.83	0.99	1.21	1.01
BAR38	3.1	10.9	25.5	37.5	22.9	2.66	1.05	-0.53	-0.28
BAR39	11.5	27.6	22.4	25.0	13.5	2.02	1.24	0.04	-1.06
BAR40	19.3	41.7	25.0	8.3	5.7	1.40	1.07	0.72	0.11
BAR41	21.4	47.4	20.3	8.3	2.6	1.23	0.97	0.78	0.40
BAR42	20.3	43.2	21.4	9.4	5.7	1.37	1.09	0.76	0.07
Self-efficacy									
SELF1	4.2	8.9	21.9	49.5	15.6	2.64	0.99	-0.83	0.47
SELF2	1.6	17.2	27.6	39.6	14.1	2.47	0.99	-0.27	-0.63
SELF3	0.5	5.2	15.6	63.0	15.6	2.88	0.75	-0.87	1.48
SELF4	0.0	3.1	18.8	57.3	20.8	2.96	0.72	-0.44	0.24
SELF5	0.0	4.2	16.1	64.1	15.6	2.91	0.69	-0.65	0.96
SELF6	1.6	10.4	26.0	49.5	12.5	2.61	0.89	-0.58	0.14
SELF7	0.5	4.7	19.8	57.3	17.7	2.87	0.77	-0.67	0.84
SELF8	1.6	9.9	21.9	50.0	16.7	2.70	0.92	-0.66	0.20
SELF9	0.5	3.6	19.3	58.9	17.7	2.90	0.75	-0.68	1.08
SELF10	1.0	2.6	22.9	57.8	15.6	2.84	0.75	-0.72	1.48
SELF11	5.2	21.9	34.9	29.7	8.3	2.14	1.02	-0.11	-0.55

Note. *N* = 192. Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*).

demonstrated considerable positive kurtosis, indicating a peaked distribution. This makes sense given the likely range restriction, as most people had similar endorsement rates, and these items had lower standard deviations. No items were removed based on the analysis of descriptive statistics.

Next, item-total correlations and Cronbach's alpha if item deleted were examined for each

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Table 4.2

MHBMA-Version 2 Item Pool Cronbach's Alphas and Item-Total Correlations

Scale/Item	Item-Total Correlation	Cronbach's Alpha If Item Deleted	Scale Alpha
Perceived Susceptibility			.93
SUS1	.71	.93	
SUS2	.79	.92	
SUS3	.80	.92	
SUS4	.71	.93	
SUS5	.84	.91	
SUS6	.73	.93	
SUS7	.88	.91	
Fears			.95
FEAR1	.69	.95	
FEAR2	.77	.95	
FEAR3	.84	.95	
FEAR4	.86	.94	
FEAR5	.83	.95	
FEAR6	.82	.95	
FEAR7	.82	.95	
FEAR8	.82	.95	
FEAR9	.77	.95	
FEAR10	.44	.96	
FEAR11	.76	.95	
FEAR12	.77	.95	
Perceived Severity			.92
SEV1	.67	.91	
SEV2	.64	.91	
SEV3	.74	.91	
SEV4	.68	.91	
SEV5	.70	.91	
SEV6	.75	.91	
SEV7	.70	.91	
SEV8	.75	.91	
SEV9	.66	.91	
SEV10	.66	.91	
SEV11	.76	.91	
SEV12	.28	.93	
Perceived Benefits			.97
BEN1	.74	.97	
BEN2	.75	.97	
BEN3	.81	.97	
BEN4	.75	.97	
BEN5	.80	.97	
BEN6	.73	.97	

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Table 4.2 (Continued)

BEN7	.81	.97
BEN8	.81	.97
BEN9	.84	.97
BEN10	.81	.97
BEN11	.78	.97
BEN12	.76	.97
BEN13	.79	.97
BEN14	.80	.97
BEN15	.86	.97
BEN16	.63	.97
BEN17	.86	.97
BEN18	.77	.97
BEN19	.80	.97
BEN20	.78	.97
BEN21	.80	.97
BEN22	.78	.97
Perceived Barriers			.97
BAR1	.54	.97
BAR2	.63	.97
BAR3	.61	.97
BAR4	.58	.97
BAR5	.29	.97
BAR6	.71	.97
BAR7	.66	.97
BAR8	.69	.97
BAR9	.59	.97
BAR10	.54	.97
BAR11	.68	.97
BAR12	.47	.97
BAR13	.45	.97
BAR14	.57	.97
BAR15	.65	.97
BAR16	.72	.97
BAR17	.62	.97
BAR18	.78	.97
BAR19	.68	.97
BAR20	.55	.97
BAR21	.57	.97
BAR22	.65	.97
BAR23	.67	.97
BAR24	.57	.97
BAR25	.74	.97
BAR26	.76	.97
BAR27	.69	.97
BAR28	.68	.97
BAR29	.79	.97

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Table 4.2 (Continued)

BAR30	.64	.97	
BAR31	.70	.97	
BAR32	.43	.97	
BAR33	.74	.97	
BAR34	.76	.97	
BAR35	.66	.97	
BAR36	.69	.97	
BAR37	.55	.97	
BAR38	.42	.97	
BAR39	.51	.97	
BAR40	.73	.97	
BAR41	.72	.97	
BAR42	.74	.97	
Self-efficacy			.90
SELF1	.63	.90	
SELF2	.57	.90	
SELF3	.59	.90	
SELF4	.66	.90	
SELF5	.68	.89	
SELF6	.60	.90	
SELF7	.71	.89	
SELF8	.67	.89	
SELF9	.71	.89	
SELF10	.71	.89	
SELF11	.65	.90	
Total MHBMA			.95

Note. $N = 192$.

item and scale (see Table 4.2). Five items (FEAR1, FEAR10, SEV12, BAR5, SELF2) were removed due to low item-total correlation with their parent scale. Examination of the item-total correlations also revealed that items on the Perceived Barriers scale designed to measure logistical or practical barriers had some of the lowest item-total correlations (see Table 4.3). That, along with the focus of the other MHBMA scales on attitudes toward mental health services, led to the removal of the logistical/practical barriers items (12 total) from the Perceived Barriers scale. See Table 4.4 for each removed MHBMA item.

Principal axis factoring with promax rotation was also conducted to identify poorly performing items among the 106 items on the MHBMA-Version 2. Table 4.5 presents the

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Table 4.3

Perceived Barriers Items by Barrier Type

Item		Barrier Type	Item-Total Correlation
BAR5	Being in therapy is a lot of work.	Attitude	.29
BAR38	Going to therapy is expensive.	Logistical/ practical	.42
BAR32	My schedule would make it hard to go to therapy.	Logistical/ practical	.43
BAR13	Going to therapy is time consuming.	Logistical/ practical	.45
BAR12	Going to therapy is inconvenient.	Logistical/ practical	.47
BAR39	I can't afford to go to therapy.	Logistical/ practical	.51
BAR1	Going to therapy would interfere with other activities in my life.	Logistical/ practical	.54
BAR10	I would prefer to get help from a family member or friend rather than a therapist.	Attitude	.54
BAR37	People who go to therapy are crazy.	Attitude	.55
BAR20	I don't have ready access to transportation to go to therapy.	Logistical/ practical	.55
BAR14	I don't have easy access to therapists in my area.	Logistical/ practical	.57
BAR24	I don't have health insurance, or it does not cover therapy.	Logistical/ practical	.57
BAR21	I would have to travel too far to go to therapy.	Logistical/ practical	.57
BAR4	A therapist wouldn't understand my mental health problem.	Attitude	.58
BAR9	I would be concerned about what others might think if they found out I was going to therapy.	Attitude	.59
BAR3	I wouldn't want anyone to know if I was going to therapy.	Attitude	.61
BAR17	I prefer to handle a mental health problem on my own.	Attitude	.62
BAR2	I worry about having a bad experience with a therapist.	Attitude	.63
BAR30	Going to therapy could negatively affect my work.	Attitude	.64
BAR15	If I went to therapy, other people would think I am weak.	Attitude	.65
BAR22	If I had a mental health problem, I wouldn't know how to get help.	Logistical/ practical	.65
BAR35	My family would think less of me if I went to therapy for a mental health problem.	Attitude	.66

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Table 4.3 (Continued)

BAR7	I wouldn't want to talk to a therapist because I value my privacy.	Attitude	.66
BAR23	It would be hard to get an appointment for therapy.	Logistical/ practical	.67
BAR28	I worry about being treated badly by a therapist.	Attitude	.68
BAR19	Going to therapy means I'm not strong enough to deal with a mental health problem myself.	Attitude	.68
BAR11	I would rather not talk about my feelings with a therapist.	Attitude	.68
BAR8	I worry about how stressful it would be to go to therapy.	Attitude	.69
BAR36	My friends would think less of me if I went to therapy for a mental health problem.	Attitude	.69
BAR27	I am afraid a therapist would pass on information about me to other people.	Attitude	.69
BAR31	I wouldn't want to burden a therapist by talking about a mental health problem.	Attitude	.70
BAR6	I am afraid I would not be able to talk to a therapist about a mental health problem.	Attitude	.71
BAR16	I don't want help for a mental health problem from a therapist.	Attitude	.72
BAR41	Therapy isn't effective in treating mental health problems.	Attitude	.72
BAR40	Even if I went to therapy, it would not help with a mental health problem.	Attitude	.73
BAR25	I am afraid to go to therapy.	Attitude	.74
BAR42	I don't think getting therapy would help me with a mental health problem.	Attitude	.74
BAR33	A mental health problem wouldn't bother me enough to get therapy.	Attitude	.74
BAR34	I'm embarrassed to talk about a mental health problem with a therapist.	Attitude	.76
BAR26	Mental health problems are too personal to tell a therapist about.	Attitude	.76
BAR18	I wouldn't feel comfortable talking with a therapist because I don't know him or her.	Attitude	.78
BAR29	I have never felt like therapy would be helpful for me.	Attitude	.79

Note. *N* = 192.

communalities. Two items that had been previously identified as having low item-total

correlations (FEAR10 and SEV12) also had low communalities. No additional items were

Table 4.4

Items Removed by Reason

Item		Reason
FEAR1	The thought of mental health problems scares me.	Low Item-Total Correlation
FEAR10	I avoid thinking about mental health problems.	Low Item-Total Correlation
SEV12	Mental health problems do not tend to go away on their own.	Low Item-Total Correlation
BAR5	Being in therapy is a lot of work.	Low Item-Total Correlation
SELF2	It would be easy for me to schedule a therapy appointment.	Low Item-Total Correlation
BAR1	Going to therapy would interfere with other activities in my life.	Logistical Barrier
BAR12	Going to therapy is inconvenient.	Logistical Barrier
BAR13	Going to therapy is time consuming.	Logistical Barrier
BAR14	I don't have easy access to therapists in my area.	Logistical Barrier
BAR20	I don't have ready access to transportation to go to therapy.	Logistical Barrier
BAR21	I would have to travel too far to go to therapy.	Logistical Barrier
BAR22	If I had a mental health problem, I wouldn't know how to get help.	Logistical Barrier
BAR23	It would be hard to get an appointment for therapy.	Logistical Barrier
BAR24	I don't have health insurance, or it does not cover therapy.	Logistical Barrier
BAR32	My schedule would make it hard to go to therapy.	Logistical Barrier
BAR38	Going to therapy is expensive.	Logistical Barrier
BAR39	I can't afford to go to therapy.	Logistical Barrier
SUS4	I worry a lot about experiencing a mental health problem.	CFA Correlated Error
BAR2	I worry about having a bad experience with a therapist.	CFA Correlated Error
BAR9	I would be concerned about what others might think if they found out I was going to therapy.	CFA Correlated Error
BAR15	If I went to therapy, other people would think I am weak.	CFA Correlated Error
BAR29	I have never felt like therapy would be helpful for me.	CFA Correlated Error

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Table 4.4 (Continued)

BAR40	Even if I went to therapy, it would not help with a mental health problem.	CFA Correlated Error
BAR41	Therapy isn't effective in treating mental health problems.	CFA Correlated Error
SELF6	I am able to regularly attend therapy appointments.	CFA Correlated Error
FEAR2	When I think about mental health problems, I feel nervous.	Expert Panel Feedback
FEAR6	When I think about mental health problems, I feel uneasy.	Expert Panel Feedback
FEAR8	When I think about mental health problems, I have trouble focusing on anything else.	Expert Panel Feedback
FEAR12	I am afraid to even think about mental health problems.	Expert Panel Feedback
BAR37	People who go to therapy are crazy.	Expert Panel Feedback

removed based on low communalities. In addition, a six factor confirmatory factor analysis (CFA) utilizing maximum likelihood estimation of the MHBMA-Version 2 items identified the items already removed based on the previous analyses and also revealed additional items to remove. As a result, eight items were removed (SUS4, BAR2, BAR9, BAR15, BAR29, BAR40, BAR41, SELF6; see Table 4.4). See Table 4.6 for the modification indices for these items. In addition, five items were removed based on Dr. Gum's feedback (see Table 4.4). Based on the above described item analyses and feedback from the expert panel, 30 items were removed and the MHBMA-Version 3 was produced consisting of 76 items (see Appendix F). This version was used to conduct remaining reliability and validity studies.

Short Form Creation. In order to ensure adequate content coverage, each Perceived Benefits item and Perceived Barriers item was coded into a broad category. This resulted in five categories for Perceived Benefits (increase life functioning, reduce symptoms, feel better, therapy is effective, and therapy is a safe space) and five categories for Perceived Barriers (privacy, fear/stress about the act of help-seeking, therapy is ineffective, prefer help from another

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Table 4.5

*Principal Axis Factor Analysis of the MHBMA-Version 2
Items Using Promax Rotation*

Item/scale	Communality
Perceived Susceptibility	
SUS1	.623
SUS2	.686
SUS3	.763
SUS4	.761
SUS5	.868
SUS6	.615
SUS7	.897
Fears	
FEAR1	.654
FEAR2	.741
FEAR3	.768
FEAR4	.807
FEAR5	.785
FEAR6	.789
FEAR7	.782
FEAR8	.764
FEAR9	.728
FEAR10	.389
FEAR11	.718
FEAR12	.732
Perceived Severity	
SEV1	.623
SEV2	.629
SEV3	.700
SEV4	.676
SEV5	.622
SEV6	.722
SEV7	.618
SEV8	.694
SEV9	.656
SEV10	.646
SEV11	.679
SEV12	.194
Perceived Benefits	
BEN1	.743
BEN2	.751
BEN3	.760
BEN4	.679
BEN5	.768
BEN6	.662
BEN7	.795
BEN8	.786
BEN9	.811
BEN10	.843

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Table 4.5 (Continued)

BEN11	.837
BEN12	.693
BEN13	.768
BEN14	.697
BEN15	.811
BEN16	.572
BEN17	.822
BEN18	.743
BEN19	.699
BEN20	.722
BEN21	.732
BEN22	.732
Perceived Barriers	
BAR1	.697
BAR2	.709
BAR3	.657
BAR4	.663
BAR5	.450
BAR6	.700
BAR7	.619
BAR8	.750
BAR9	.596
BAR10	.505
BAR11	.732
BAR12	.642
BAR13	.774
BAR14	.666
BAR15	.651
BAR16	.739
BAR17	.643
BAR18	.752
BAR19	.686
BAR20	.657
BAR21	.731
BAR22	.685
BAR23	.672
BAR24	.624
BAR25	.711
BAR26	.759
BAR27	.642
BAR28	.734
BAR29	.787
BAR30	.587
BAR31	.640
BAR32	.531
BAR33	.747
BAR34	.674
BAR35	.602
BAR36	.708

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Table 4.5 (Continued)

BAR37	.501
BAR38	.605
BAR39	.707
BAR40	.814
BAR41	.812
BAR42	.830
Self-efficacy	
SELF1	.697
SELF2	.627
SELF3	.681
SELF4	.742
SELF5	.674
SELF6	.671
SELF7	.581
SELF8	.777
SELF9	.755
SELF10	.731
SELF11	.688

Note. $N = 192$.

Table 4.6

Modification Indices for Items Removed from the MHBMA-Version 2

Item Removed	Correlated Error With	Modification Index	Parameter Change
SELF6	SELF8	75.684	0.349
BAR41	BAR40	69.902	0.283
BAR9	BAR3	60.743	0.527
BAR40	BAR42	56.805	0.276
BAR2	BAR28	45.107	0.401
BAR29	BAR42	39.529	0.208
SUS4	SUS1	32.817	0.305
BAR15	BAR19	30.602	0.335

source, stigma). Two items on the Perceived Barriers scale did not fall into one of these

categories and were related to perceived lack of need and concern about having a bad experience

while seeking services. Next, items from each category with high item-total correlations were

selected for inclusion. As presented in Table 4.7, this resulted in a 5-item Perceived Benefits –

Short Form scale with a Cronbach's alpha of .93 and a 5-item Perceived Barriers – Short Form

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scale with a Cronbach's alpha of .87. Both scales were highly correlated with their parent scales (.96 for Perceived Benefits, .92 for Perceived Barriers).

Research Question 2: What factor measurement model is supported as the most appropriate model for interpreting the Mental Health Belief Model Assessment (MHBMA)?

Principal axis factoring with promax rotation was utilized to examine factor loadings and provide evidence of the internal structure of the 76 item MHBMA-Version 3. Several criteria, such as the scree plot, Kaiser's criterion (Kaiser, 1960), and parallel analysis, were used to assess the number of factors to extract. Kaiser's criterion considers eigenvalues greater than 1.0 to provide a meaningful contribution to the overall variance of the scale (Fabrigar et al., 1999) and suggests that components with eigenvalues greater than 1.0 be retained as factors. Eigenvalues, percent of variance explained, and cumulative variance for the first 20 components are provided in Table 4.8, as well as displayed in a scree plot in Figure 4.1. Based on these results, twelve components met Kaiser's criterion, explaining 73.26% of the total variance. However, examination of the scree plot in Figure 4.1 indicated that six factors should be extracted.

Parallel analysis was also employed as further evidence to decide how many factors to extract. Eigenvalues generated from the study sample were compared to the distribution of eigenvalues created from 1,000 random datasets for 76 variables and 192 cases. Five components from the EFA of the study data had larger eigenvalues than those from this distribution, therefore supporting a five factor model.

In sum, the results from examination of the scree plot suggested a six factor measurement model, parallel analysis suggested a five factor measurement model, while Kaiser's (1960) criterion suggested a 12 factor model. Given Kaiser's criterion's tendency to overestimate the

number of factors to extract and the theoretical model of six factors, both five and six factor

models were tested. First, an EFA (using principal axis factoring with promax rotation) forcing a

Table 4.7

MHBMA Short Form Scales Cronbach's Alphas and Item-Total Correlations

Item/scale		Benefit/ Barrier Category	Item-Total Correlation	Cronbach's Alpha if Item Deleted	Scale Alpha
Perceived Benefits - Short Form					.93
BEN3	Going to therapy can provide me with an outlet to talk about issues that are bothering me.	Therapy is a safe space	.80	.92	
BEN7	I have a lot to gain by going to therapy when I need it.	Therapy is effective	.83	.92	
BEN9	Going to therapy can help me feel better emotionally.	Feel better	.82	.92	
BEN15	Going to therapy can help me change things in my life for the better.	Increase life functioning	.82	.92	
BEN17	Going to therapy can help me cope with a mental health problem.	Reduce symptoms	.84	.91	
Perceived Barriers - Short Form					.87
BAR8	I don't want help for a mental health problem from a therapist.	Prefer help from another source	.73	.83	
BAR11	Going to therapy means I'm not strong enough to deal with a mental health problem myself.	Stigma	.66	.85	
BAR13	Mental health problems are too personal to tell a therapist about.	Privacy	.76	.82	
BAR19	I'm embarrassed to talk about a mental health problem with a therapist.	Fear/stress about the act of help-seeking	.69	.84	
BAR22	I don't think getting therapy would help me with a mental health problem.	Therapy is ineffective	.63	.85	

Note. $N = 192$.

five factor model was conducted. The results of this analysis, presented in Table 4.9,

demonstrated alignment with the theoretical conceptualization of the MHBMA, with all items

Table 4.8

Components Indicated by Eigenvalues and Variance Explained for the MHBMA-Version 3

Component	Eigenvalue	% of Variance	Cumulative Variance
1	20.52	27.00	27.00
2	13.00	17.11	44.11
3	5.61	7.38	51.48
4	4.91	6.46	57.94
5	2.74	3.61	61.55
6	1.73	2.28	63.83
7	1.49	1.96	65.79
8	1.25	1.64	67.43
9	1.18	1.55	68.98
10	1.14	1.50	70.48
11	1.08	1.42	71.90
12	1.03	1.36	73.26
13	0.96	1.26	74.52
14	0.92	1.20	75.72
15	0.88	1.15	76.87
16	0.79	1.04	77.91
17	0.77	1.01	78.92
18	0.72	0.95	79.87
19	0.67	0.88	80.75
20	0.66	0.86	81.61

from the Perceived Benefits scale loading on Factor 1, all items from Perceived Barriers loading

on Factor 2, all items from the Perceived Susceptibility and the Fears scales loading on Factor 3,

all items from the Perceived Severity scale loading on Factor 4, and all items from the Self-

efficacy scale loading on Factor 5. The Perceived Susceptibility and Fears scales were

conceptualized as separate scales, so the six factor model was tested next to see if it would tease

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these two scales apart. The results of the six factor model (see Table 4.10) are similar to the

results of the five factor model, with several notable differences. Factor 1 still corresponds to
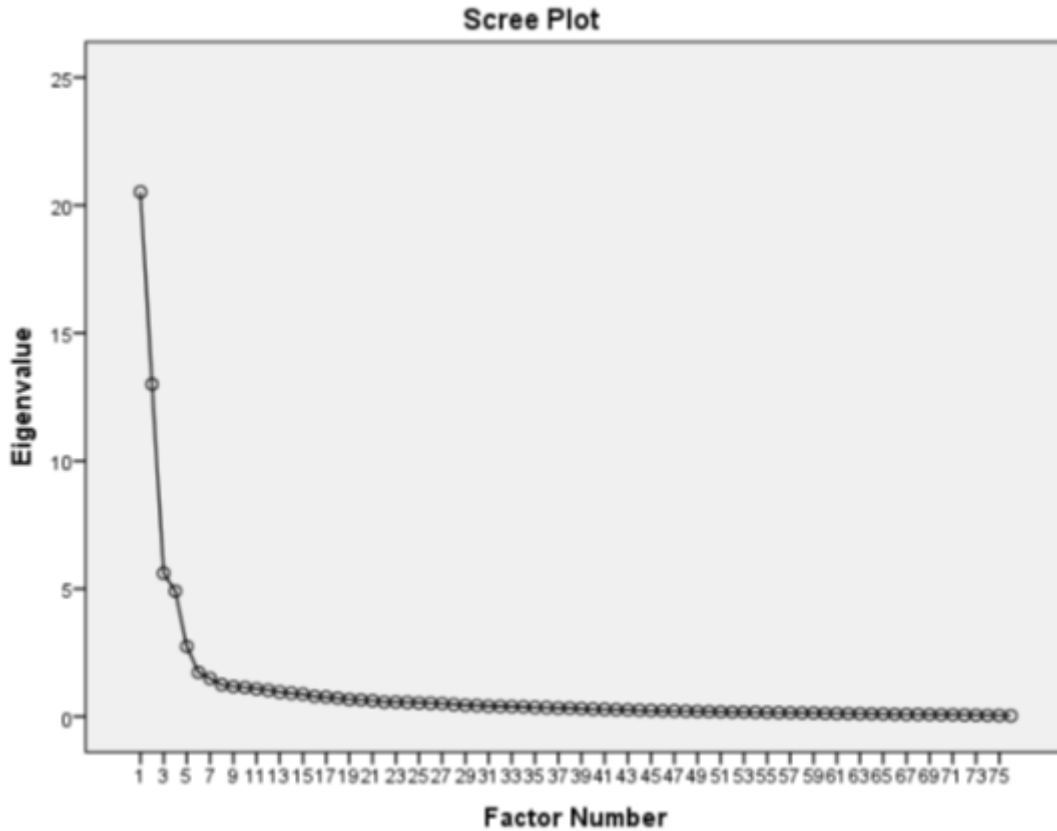
Figure 4.1. Scree plot for EFA

Perceived Benefits, Factor 3 still corresponds to Perceived Barriers, Factor 4 still corresponds to

Perceived Severity, and Factor 5 still corresponds to Self-efficacy. However, Factor 3

corresponds to all the Perceived Susceptibility items and Item 7 of the Fears scale, with the rest

of the items on the Fears scale cross-loaded between Factor 3 and Factor 6. Therefore, it seems

that the six factor model does not tease apart the Perceived Susceptibility and Fears scales.

Although these scales were originally conceptualized as separate scales, there is significant

content overlap which, along with the results from the five and six factor model EFAs, supports

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Table 4.9

MHBMA-Version 3 Pattern Coefficients for Principal Axis Factoring Forcing Five Factors

	Factor					
	1	2	3	4	5	Communality
Item/scale						
BEN1	**.78**	-.09	.10	.00	-.11	.580
BEN2	**.68**	-.01	.01	.01	.15	.594
BEN3	**.75**	-.10	-.02	.08	.07	.689
BEN4	**.76**	-.07	-.01	-.01	-.04	.581
BEN5	**.89**	-.12	-.03	-.07	-.20	.703
BEN6	**.78**	.00	-.03	-.02	-.08	.547
BEN7	**.75**	-.10	.00	-.01	.08	.690
BEN8	**.80**	-.09	-.03	-.04	.02	.700
BEN9	**.78**	.03	.00	-.03	.13	.724
BEN10	**.87**	.07	.03	.00	-.05	.680
BEN11	**.86**	.11	.07	-.03	-.06	.649
BEN12	**.78**	.02	.07	.01	.00	.604
BEN13	**.88**	.10	.05	-.01	-.07	.676
BEN14	**.86**	.09	-.06	-.04	-.02	.667
BEN15	**.88**	.05	.03	.01	-.02	.745
BEN16	**.63**	.15	-.04	-.05	.13	.436
BEN17	**.82**	-.02	.02	.01	.08	.755
BEN18	**.79**	.16	-.11	.07	.06	.631
BEN19	**.77**	.00	.00	-.01	.06	.652
BEN20	**.72**	.07	-.04	-.01	.19	.654
BEN21	**.79**	.08	.01	.05	.09	.676
BEN22	**.78**	.06	-.04	-.01	.06	.636
BAR1	.07	**.70**	-.17	.09	-.01	.451
BAR2	-.30	**.53**	.10	-.08	.17	.401
BAR3	.10	**.72**	.04	.00	-.15	.596
BAR4	-.10	**.68**	-.02	.04	.01	.508
BAR5	.05	**.60**	.13	.12	-.12	.534
BAR6	-.02	**.65**	-.06	-.06	.16	.337
BAR7	-.29	**.65**	.00	-.01	.02	.600
BAR8	-.33	**.70**	-.09	-.08	.02	.678
BAR9	-.16	**.67**	-.06	-.06	.03	.473
BAR10	.05	**.80**	-.03	-.01	-.12	.673
BAR11	.09	**.71**	.05	.00	-.08	.534
BAR12	.21	**.80**	-.04	.06	-.07	.614
BAR13	-.06	**.82**	-.06	.06	.06	.669
BAR14	.03	**.68**	.11	.03	.02	.526
BAR15	.01	**.58**	.14	.07	-.06	.474

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Table 4.9 (Continued)

BAR16	.12	**.64**	-.06	.01	-.09	.402
BAR17	.14	**.76**	.15	-.08	.08	.567
BAR18	-.01	**.87**	-.03	-.13	.16	.622
BAR19	.10	**.83**	-.10	.04	-.05	.633
BAR20	.09	**.71**	.05	-.07	-.03	.489
BAR21	.22	**.79**	.04	-.12	-.03	.548
BAR22	-.38	**.61**	.06	.01	.11	.619
SF1	.11	.04	**.74**	-.04	-.09	.578
SF2	-.12	-.04	**.86**	-.10	.07	.659
SF3	.03	-.11	**.83**	-.13	-.01	.589
SF4	.03	-.10	**.86**	-.11	-.05	.644
SF5	-.09	-.07	**.80**	-.11	.09	.551
SF6	.04	-.03	**.91**	-.21	-.01	.727
SF7	.07	.08	**.61**	.23	-.15	.621
SF8	.00	.12	**.65**	.21	-.02	.654
SF9	-.01	.16	**.67**	.15	.07	.639
SF10	-.02	-.02	**.74**	.19	.06	.658
SF11	.06	.05	**.71**	.11	-.10	.629
SF12	-.06	.24	**.56**	.13	.02	.549
SEV1	.09	.09	.01	**.65**	.02	.487
SEV2	-.20	.11	-.03	**.69**	.16	.507
SEV3	-.04	-.04	-.13	**.82**	-.02	.606
SEV4	.22	.06	-.17	**.74**	-.07	.569
SEV5	.08	-.09	-.05	**.78**	-.05	.570
SEV6	.00	.02	-.05	**.78**	.02	.596
SEV7	-.05	.03	.00	**.72**	.04	.527
SEV8	-.02	-.14	-.01	**.82**	-.03	.623
SEV9	-.16	-.05	.19	**.65**	.12	.507
SEV10	.03	-.08	.10	**.69**	-.04	.509
SEV11	-.05	-.05	-.01	**.82**	-.06	.645
SELF1	.20	-.20	.15	-.12	**.51**	.551
SELF2	.12	.13	-.15	.03	**.67**	.520
SELF3	.21	-.14	.06	.13	**.57**	.587
SELF4	.25	-.02	-.04	.08	**.58**	.582
SELF5	-.01	.03	-.07	-.04	**.74**	.552
SELF6	.04	.02	-.05	-.03	**.59**	.374
SELF7	.21	.04	.01	.03	**.68**	.639
SELF8	.25	-.03	.05	.09	**.61**	.623
SELF9	.03	-.08	.14	-.07	**.61**	.435
Variance (%)	27.00	17.11	7.38	6.46	3.61	∑ 61.55

Note. *N* = 192. Loadings in bold indicate the highest loading for an item. BEN = Perceived Benefits; BAR = Perceived Barriers; SF = Perceived Susceptibility and Fears; SEV = Perceived Severity; SELF = Self-efficacy.

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the decision to combine the scales. The combined Perceived Susceptibility and Fears scale, along with the other scales supported by the five factor model are used for the remainder of the analyses.

Research Question 3: To what extent are the scores from the Mental Health Belief Model Assessment (MHBMA) reliable?

       Scale internal consistency. Internal consistency was assessed with Cronbach's alpha and item-total correlations for the MHBMA-Version 3. Internal consistency reliability was high for each scale, with Cronbach's alphas ranging from .90 to .97. See Table 4.11 for the scale alphas and item-total correlations. All of the item-total correlation coefficients greatly exceeded the generally accepted level of .30. Coefficients ranged from .68 and .78 for the Perceived Susceptibility and Fears scale, .65 to .75 for the Perceived Severity scale, .63 to .84 for the Perceived Benefits scale, .56 to .80 for the Perceived Barriers scale, and .60 to .76 for the Self-efficacy scale. These results support that all of the items relate to their corresponding scale, while also providing unique measurement to the scale. For the MHBMA Short Form, scale alphas (presented in Table 4.12) were similarly high for both the Perceived Benefits (.93) and Perceived Barriers (.87) scales, with coefficients ranging from .81 to .86 and from .68 to .72, respectively.

       Test-retest analyses. A second survey link was sent to each 5th respondent 2-4 weeks after the initial response was received, resulting in 38 participants being contacted. Of those 38, 16 participated in the survey (42.1%). When one of the retest participants did not respond, the next participant who completed the survey (e.g., 6th respondent) was contacted, resulting in 25 additional participants being contacted. Of those 25, 15 participated in the survey (60%). This resulted in a total of 63 participants contacted, with 33 surveys completed. During outlier analysis, six cases were removed with an absolute mean change of more than 1 point on one or

Table 4.10

MHBMA-Version 3 Pattern Coefficients for Principal Axis Factoring Forcing Six Factors

	Factor						Communality
	1	2	3	4	5	6	
Item/Scale							
BEN1	**.79**	-.10	.01	-.04	-.11	.15	.596
BEN2	**.67**	.01	.05	.02	.15	-.05	.598
BEN3	**.74**	-.09	.02	.10	.07	-.06	.693
BEN4	**.77**	-.08	-.05	-.03	-.04	.08	.588
BEN5	**.90**	-.13	-.08	-.10	-.20	.07	.715
BEN6	**.79**	-.03	-.11	-.06	-.08	.14	.572
BEN7	**.75**	-.10	.01	-.01	.08	-.01	.690
BEN8	**.79**	-.07	.03	-.01	.01	-.12	.709
BEN9	**.78**	.03	.01	-.03	.14	-.02	.724
BEN10	**.87**	.06	-.02	-.02	-.05	.08	.684
BEN11	**.85**	.12	.08	-.02	-.06	-.03	.652
BEN12	**.78**	.01	.00	-.02	.00	.13	.614
BEN13	**.88**	.10	.02	-.02	-.07	.05	.675
BEN14	**.85**	.10	-.03	-.03	-.02	-.08	.670
BEN15	**.88**	.06	.04	.02	-.02	-.01	.745
BEN16	**.64**	.11	-.14	-.11	.14	.21	.480
BEN17	**.81**	-.01	.05	.02	.08	-.06	.759
BEN18	**.79**	.14	-.13	.04	.06	.06	.637
BEN19	**.77**	.00	.00	-.01	.07	.01	.652
BEN20	**.71**	.09	.05	.04	.19	-.17	.679
BEN21	**.78**	.09	.04	.07	.09	-.06	.681
BEN22	**.77**	.09	.05	.03	.06	-.17	.662
BAR1	.06	**.71**	-.09	.11	-.02	-.13	.463
BAR2	-.30	**.50**	.03	-.10	.17	.15	.407
BAR3	.10	**.71**	.01	-.01	-.15	.07	.597
BAR4	-.09	**.65**	-.09	.00	.01	.15	.522
BAR5	.05	**.61**	.14	.13	-.12	-.01	.542
BAR6	-.02	**.64**	-.05	-.06	.16	.01	.337
BAR7	-.28	**.64**	-.02	-.02	.02	.05	.600
BAR8	-.34	**.71**	-.02	-.05	.02	-.12	.691
BAR9	-.17	**.68**	.01	-.02	.03	-.12	.488
BAR10	.04	**.81**	.02	.01	-.12	-.08	.683
BAR11	.08	**.70**	.04	.00	-.07	.04	.534
BAR12	.20	**.79**	-.01	.08	-.07	-.03	.617
BAR13	-.06	**.79**	-.12	.03	.07	.13	.680
BAR14	.03	**.66**	.04	.00	.02	.17	.534
BAR15	.00	**.58**	.14	.09	-.07	.00	.480
BAR16	.11	**.66**	.02	.05	-.09	-.13	.421

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Table 4.10 (Continued)

BAR17	.14	**.74**	.07	-.09	.09	.17	.573
BAR18	-.01	**.85**	-.03	-.13	.16	.03	.622
BAR19	.09	**.84**	-.03	.07	-.05	-.13	.650
BAR20	.09	**.69**	-.01	-.09	-.03	.13	.494
BAR21	.22	**.78**	.04	-.11	-.03	.01	.548
BAR22	-.38	**.60**	.02	.00	.11	.09	.620
SF1	.12	.05	**.60**	-.04	-.10	.28	.571
SF2	-.12	-.02	**.75**	-.07	.06	.22	.659
SF3	.00	-.05	**.91**	-.03	-.02	-.09	.753
SF4	.01	-.03	**.95**	-.01	-.07	-.11	.841
SF5	-.11	-.03	**.76**	-.05	.08	.09	.587
SF6	.02	.03	**.93**	-.12	-.02	-.01	.847
SF10	-.01	-.04	**.51**	.15	.06	*.46*	.677
SEV1	.09	.09	.01	**.64**	.02	.04	.488
SEV2	-.20	.11	-.04	**.67**	.16	.07	.507
SEV3	-.05	-.02	-.07	**.83**	-.02	-.08	.622
SEV4	.22	.06	-.15	**.72**	-.07	.00	.568
SEV5	.08	-.08	-.02	**.77**	-.05	-.03	.577
SEV6	-.01	.05	.04	**.81**	.02	-.12	.635
SEV7	-.04	.02	-.05	**.68**	.05	.14	.529
SEV8	-.03	-.12	.01	**.81**	-.03	.00	.630
SEV9	-.17	-.04	.17	**.64**	.12	.10	.509
SEV10	.04	-.09	.02	**.65**	-.04	.17	.513
SEV11	-.05	-.05	-.04	**.79**	-.06	.09	.644
SELF1	.21	-.20	.12	-.12	**.51**	.09	.551
SELF2	.11	.15	-.04	.07	**.68**	-.15	.542
SELF3	.21	-.14	.04	.12	**.57**	.09	.584
SELF4	.25	.00	.03	.11	**.59**	-.09	.594
SELF5	.00	.03	-.05	-.04	**.75**	.01	.548
SELF6	.05	.01	-.05	-.03	**.59**	.06	.374
SELF7	.21	.05	.05	.05	**.69**	-.03	.642
SELF8	.26	-.03	.02	.08	**.61**	.10	.621
SELF9	.04	-.13	-.05	-.16	**.64**	*.42*	.560
SF7	.09	.03	*.34*	.15	-.16	**.55**	.704
SF8	.02	.07	*.38*	.14	-.02	**.57**	.734
SF9	.01	.10	*.37*	.06	.07	**.61**	.745
SF11	.08	.01	*.44*	.05	-.10	**.54**	.691
SF12	-.04	.19	*.30*	.05	.03	**.53**	.627
Variance (%)	27.00	17.11	7.38	6.46	3.61	2.28	∑ 63.83

Note. *N* = 192. Loadings in bold indicate the highest loading for an item. Loadings in italics indicate the second highest loading for an item when crossloaded. BEN = Perceived Benefits; BAR = Perceived Barriers; SUS = Perceived Susceptibility; FEAR = Fears; SEV = Perceived Severity; SELF = Self-efficacy.

Table 4.11

Cronbach's Alphas and Item-Total Correlations of the MHBMA-Version 3

Item/Scale	Scale Alpha/Item-Total Correlation
Perceived Susceptibility and Fears	**.94**
SF1	.74
SF2	.76
SF3	.70
SF4	.75
SF5	.68
SF6	.78
SF7	.73
SF8	.76
SF9	.76
SF10	.78
SF11	.77
SF12	.68
Perceived Severity	**.93**
SEV1	.68
SEV2	.65
SEV3	.74
SEV4	.68
SEV5	.71
SEV6	.75
SEV7	.70
SEV8	.75
SEV9	.66
SEV10	.68
SEV11	.78
Perceived Benefits	**.97**
BEN1	.74
BEN2	.75
BEN3	.81
BEN4	.75
BEN5	.80
BEN6	.73
BEN7	.81
BEN8	.81
BEN9	.84
BEN10	.81
BEN11	.78
BEN12	.76

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Table 4.11 (Continued)

BEN13	.79
BEN14	.80
BEN15	.86
BEN16	.63
BEN17	.86
BEN18	.77
BEN19	.80
BEN20	.78
BEN21	.80
BEN22	.78
Perceived Barriers	**.96**
BAR1	.63
BAR2	.56
BAR3	.74
BAR4	.70
BAR5	.69
BAR6	.54
BAR7	.72
BAR8	.73
BAR9	.66
BAR10	.80
BAR11	.70
BAR12	.73
BAR13	.79
BAR14	.70
BAR15	.65
BAR16	.61
BAR17	.69
BAR18	.75
BAR19	.76
BAR20	.67
BAR21	.69
BAR22	.71
Self-efficacy	**.90**
SELF1	.65
SELF2	.65
SELF3	.69
SELF4	.72
SELF5	.68
SELF6	.57
SELF7	.76
SELF8	.74
SELF9	.60

Note. *N* = 192.

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Table 4.12

Cronbach's Alphas and Item-Total Correlations of the MHBMA Short Form

Item/Scale	Scale Alpha/Item-Total Correlation
Perceived Benefits - Short Form	.93
BEN3	.81
BEN7	.81
BEN9	.84
BEN15	.86
BEN17	.86
Perceived Barriers – Short Form	.87
BAR16	.72
BAR19	.68
BAR26	.76
BAR34	.76
BAR42	.74

Note. $N = 192$.

more scales, for a total test-retest sample of 27. See Table 4.13 for the demographic characteristics of the test-retest sample. The mean number of days between time 1 and time 2 testing sessions was 17 days, ranging from 13 to 33 days. Table 4.14 presents the means, standard deviations, absolute mean change, and correlations between testing sessions for each scale. The Pearson correlation coefficients for each scale were strong, ranging from .82 to .92. The MHBMA Short Form scale correlations were also high (.83 and .87). Based on paired samples *t*-tests, there were no significant differences between testing sessions for the most scales and the MHBMA Short Form scales. There were significant differences on the Perceived Severity scale ($p < .05$) and the Self-efficacy scale ($p < .05$), but the absolute mean changes were small (0.15 and 0.11, respectively). The test-retest analyses were also replicated with the full test-retest sample, including outliers ($n = 33$). The results were similar for most scales, with the exception of the Perceived Severity scale ($r = .52$), the Perceived Benefits scale ($r = .71$) and the

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Perceived Benefits – Short Form scale (r = .69), which had much lower Pearson correlation coefficients when the outlier cases were retained.

Research Question 4: To what extent is the interpretation of scores on the MHBMA a valid assessment of readiness to seek mental health services, as evidenced by test content, internal structure, and relations to other variables?"

Evidence for test validity involved an expert review of the developed items. As discussed in more detail in Chapter 3, a panel of experts examined each MHBMA item based on the following criteria: (a) the quality of the item; (b) the degree to which the item represented the associated construct; (c) the face validity of the item; and (d) potential bias or other problems. Based on these ratings, revisions were made to existing items and new items were generated. On the basis of this expert review, it can be concluded that the items on the MHBMA have reasonable content validity.

Evidence of internal structure can be measured in several ways, via factor analysis and examining the intercorrelations between scales. Results of factor analysis is discussed in more detail in a previous section of this chapter as they relate to Research Question 2: What factor measurement model is supported as the most appropriate model for interpreting the Mental Health Belief Model Assessment (MHBMA)? In terms of intercorrelations (see Table 4.15), as expected, the strongest positive correlations were found between similar scales such as Perceived Benefits and Self-efficacy (r = .64) and Perceived Susceptibility and Fears and Perceived Severity (r = .38). The strongest negative correlations were between the most dissimilar scales, such as Perceived Benefits and Perceived Barriers (r = -.30) and Perceived Barriers and Self-efficacy (r = -.39). When examining the MHBMA Short Form, it is important to note that each Short Form scale is highly correlated with its parent scale (r = .96 for the Perceived Benefits

Table 4.13

Demographic Characteristics of the MHBMA Test-Retest Sample

Characteristic	$\underline{n}$	$\underline{\%}$
N	27	
Age (years)		
M	37.85	
SD	13.35	
Range	19-64	
Gender (%)		
Male	4	14.8
Female	23	85.2
Race/Ethnicity (%)		
Caucasian	17	63
African American	3	11.1
Hispanic	4	14.8
Other[a]	3	11.1
Current Student		
Yes	11	40.7
No	16	59.3
Year in School[b]		
Freshman in College	0	0.0
Sophomore in College	0	0.0
Junior in College	2	18.2
Senior in College	1	9.1
1st Year of Graduate School	2	18.2
2nd Year of Graduate School	1	9.1
3rd Year of Graduate School	1	9.1
4th Year of Graduate School	2	18.2
5th Year of Graduate School	0	0.0
6th Year of Graduate School	0	0.0
7th Year or Higher of Graduate School	2	18.2
Highest Level of Education Completed[c]		
GED	0	0.0
High School Diploma	2	12.5
Technical or Vocational Program	1	6.3
College Degree (e.g., 4-year B.A. or B.S.)	7	43.8
Graduate Degree (e.g., M.A., M.S., M.D., or Ph.D.)	6	37.5

[a] Consists of American Indian/Alaskan Native, Asian, and multi-racial participants.
[b]$n = 15$; [c]$n = 18$.

Table 4.14

Test-Retest Reliability Coefficients for the MHBMA Scale Scores

		Time 1		Time 2		
Scale	*r*	*M*	*SD*	*M*	*SD*	Absolute Mean Change
Perceived Susceptibility and Fears	.91	1.60	0.89	1.60	0.85	0.00
Perceived Severity	.82	2.55	0.51	2.40	0.49	0.15*
Perceived Benefits	.84	2.99	0.44	2.92	0.50	0.07
Perceived Barriers	.92	1.21	0.69	1.32	0.71	0.11
Self-efficacy	.87	2.94	0.39	2.83	0.45	0.11*
Perceived Benefits - Short Form	.83	3.07	0.49	3.01	0.53	0.06
Perceived Barriers - Short Form	.87	1.09	0.87	1.18	0.79	0.09

Note. *N* = 27. Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*).

* Paired samples *t*-test significant at *p* < .05.

Table 4.15

Intercorrelations of the MHBMA-Version 3 Scales

	Scale						
Scale	SF	SEV	BEN	BAR	SELF	BEN-S	BAR-S
SF	1						
SEV	.34**	1					
BEN	.01	.09	1				
BAR	.38**	.24**	-.30**	1			
SELF	-.07	-.01	.64**	-.39**	1		
BEN-S	.00	.09	.96**	-.34**	.65**	1	
BAR-S	.31**	.22**	-.39**	.95**	-.43**	-.41**	1

Note. *N* = 192. SF = Perceived Susceptibility and Fears, SEV = Perceived Severity, BEN = Perceived Benefits, BAR = Perceived Barriers, SELF = Self-Efficacy, BEN-S = Perceived Benefits - Short Form; BAR-S = Perceived Barriers - Short Form.
*p < .05
**p < .01

scale and *r* = .95 for the Perceived Barriers scale) and that the Short Form scale correlations with

the other MHBMA scales are similar to its parent scale correlations with the other MHBMA

scales.

To examine the relations between MHBMA and other variables, all participants took the ATSPPH-SF and BHSS. The ATSPPH-SF (Fischer & Farina, 1995) is a 10-item scale designed to measure positive attitudes toward treatment, where higher scores indicate more favorable treatment attitudes. Table 4.16 presents the correlations between each of the MHBMA scales and the ATSPPH-SF factors and Total Score. As expected, the Perceived Benefits scale was significantly positively correlated with each ATSPPH-SF factor and Total Score ($r = .22, .47,$ and .56), with similar correlations between the Perceived Benefits – Short Form scale ($r = .25,$ .48, and .55). The Self-efficacy scale was similarly significantly positively correlated with each ATSPPH-SF factor and Total Score ($r = .21, .44,$ and .53). As anticipated, the Perceived Barriers scale was significantly negatively correlated ($r = -.37, -.68,$ and -.71), with similar correlations between the Perceived Barriers – Short Form scale ($r = -.41, -.71, -.72$).

The BHSS (Mansfield, Addis, & Courtenay, 2005), is a 31-item measure of barriers to seeking professional help for mental and physical problems, where higher scores indicate more barriers. Table 4.17 presents the correlations between each of the MHBMA scales and the BHSS scales and Total Score. As expected, the strongest correlations were between the Perceived Barriers scale and each BHSS scale and Total Score (ranging from $r = .37$ to $r = .63$), with similar correlations between the Perceived Barriers – Short Form scale (ranging from $r = .35$ to $r = .59$).

To examine the relationship between MHBMA scales and readiness to seek services, participants were asked the following question: If you had a mental health problem, how likely would you be to go to therapy? The response scale ranged from 1 to 4, with 1 indicating "Definitely not go," 2 indicating "Probably not go," 3 indicating "Probably go," and 4 indicating "Definitely go." As expected, the scales representing positive attitudes about mental health

Table 4.16

Correlations of the MHBMA-Version 3 and the ATSPPH-SF Factors and Total Score

MHBMA Scale	ATSPPH-SF Factor/Total Score		
	Openness to Seeking Treatment for Emotional Problems	Value and Need in Seeking Treatment	ATSPPH-SF Total Score
SF	.15*	-.14	-.01
SEV	.03	-.19**	-.11
BEN	.56**	.22**	.47**
BAR	-.37**	-.71**	-.68**
SELF	.53**	.21**	.44**
BEN-S	.55**	.25**	.48**
BAR-S	-.41**	-.72**	-.71**

Note. ATSPPH-SF = Attitudes Toward Seeking Professional Psychological Help Scale-Short Form; Fischer & Farina, 1995. SF = Perceived Susceptibility and Fears, SEV = Perceived Severity, BEN = Perceived Benefits, BAR = Perceived Barriers, SELF = Self-Efficacy, BEN-S = Perceived Benefits - Short Form; BAR-S = Perceived Barriers - Short Form.
N = 192.
*p < .05
**p < .01

services had large positive correlations with likelihood of using therapy, ranging from .45 for the Self-efficacy scale to .46 for the Perceived Benefits scale and .48 for its short form scale. Medium negative correlations were found for the Perceived Barriers scale (*r* = -.30) and it short form scale (*r* = -.34).

Research Question 5: To what extent do adults exhibit readiness to seek mental health services?

The observed scores for each MHBMA scale were examined for the overall sample, as well as across gender, age, race/ethnicity, participant type, subjective well-being, and current and past mental health service use. Given the sample size and nature of this study, observed scores were used rather than latent variables and measurement invariance testing was not conducted. The mean item endorsements of each scale for the overall sample are presented in Table 4.18. On

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Table 4.17

Correlations of the MHBMA-Version 3 Scales and the BHSS Factors and Total Score

MHBMA Scale	BHSS Scale/Total Score					
	Need for Control and Self-Reliance	Minimizing Problem and Resignation	Concrete Barriers and Distrust of Caregivers	Privacy	Emotional Control	BHSS Total Score
SF	.32**	.11	0.30**	.37**	.31**	.37**
SEV	.18*	.21**	.26**	.29**	.20**	.29**
BEN	-.13	.00	-.03	-.01	.02	-.05
BAR	.56**	.37**	.52**	.47**	.48**	.63**
SELF	-.16*	-.02	-.11	-.06	-.11	-.12
BEN-S	-.15*	-.01	-.05	-.02	.01	-.08
BAR-S	.52**	.35**	.48**	.44**	.43**	.59**

Note. BHSS = Barriers to Help Seeking Scale; Mansfield, Addis, & Courtenay, 2005. SF = Perceived Susceptibility and Fears, SEV = Perceived Severity, BEN = Perceived Benefits, BAR = Perceived Barriers, SELF = Self-Efficacy, BEN-S = Perceived Benefits - Short Form; BAR-S = Perceived Barriers - Short Form.
$N = 191$.
*$p < .05$
**$p < .01$

average, the sample most endorsed the positive scales, Perceived Benefits and Self-efficacy.

With mean endorsement rates near 3.00, this indicates that the average participant agreed with

these items. The Perceived Barriers scale was least endorsed, indicating that the average

participant disagreed or was neutral about the items on this scale.

Table 4.19 presents the mean item endorsement for each scale by gender. The results

revealed no significant differences by gender for most scales: Perceived Susceptibility and Fears

$t(188) = 1.23$, $p = .221$; Perceived Severity $t(188) = .13$, $p = .900$; Perceived Benefits $t(188) = -1.35$, $p = .179$; Perceived Benefits – Short Form $t(188) = -1.92$, $p = .057$; and Self-efficacy $t(188) = -1.69$, $p = .092$. However, significant differences were found on the Perceived Barriers scale

$t(188) = 3.94$, $p = .000$ and the Perceived Barriers – Short Form scale $t(188) = 3.44$, $p = .001$,

Table 4.18

Mean Item Endorsement for the MHBMA-Version 3 Validation Sample

Scale	Range	*M*	*SD*	Skewness	Kurtosis
Perceived Susceptibility and Fears	0.00-4.00	1.97	0.94	-0.01	-0.64
Perceived Severity	0.00-4.00	2.69	0.72	-0.40	0.60
Perceived Benefits	0.00-4.00	2.99	0.70	-1.40	3.62
Perceived Barriers	0.00-3.77	1.54	0.84	0.44	-0.26
Self-Efficacy	0.89-4.00	2.76	0.61	-0.37	0.68
Perceived Benefits - Short Form	0.00-4.00	3.03	0.74	-1.41	3.42
Perceived Barriers - Short Form	0.00-4.00	1.47	0.94	0.50	-0.22

Note. N = 192. Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*).

with males endorsing significantly more barriers than females, with a medium effect sizes (.59 and .53, respectively) for both scales.

Table 4.20 presents the mean item endorsement for each scale by age group (ages 18-24 years, ages 25-39 year, ages 40-70 years). These age groups were selected to coincide with the general developmental periods of young adulthood, adulthood, and older adulthood while providing adequate samples sizes in each group. The results revealed no significant differences by age for most scales: Perceived Susceptibility and Fears $F(2, 187) = 2.73$, $p = .068$; Perceived Severity $F(2, 187) = 1.59$, $p = .207$; Perceived Benefits $F(2, 187) = 0.14$, $p = .87$; Self-efficacy $F(2, 187) = .94$, $p = .394$; Perceived Benefits - Short Form $F(2, 187) = 0.51$, $p = .601$; Perceived Barriers - Short Form $F(2, 187) = 2.39$, $p = .095$. However, significant differences were found on the Perceived Barriers scale $F(2, 187) = 3.98$, $p = .002$, with participants ages 25 to 39 years ($M = 1.69$, $SD = 0.89$) endorsing significantly more barriers than participants ages 40 to 70 years ($M = 1.29$, $SD = 0.73$), with a medium effect size (0.49). These results are consistent with the results obtained from examining the correlations between age and each scale. Only the Perceived Susceptibility and Fears scale and the Perceived Barriers scale were significantly correlated with

Table 4.19

Mean Item Endorsement by Gender

	Male (*n* = 64)		Female (*n* = 126)		Mean Difference	*d*
Scale	*M*	*SD*	*M*	*SD*		
Perceived Susceptibility and Fears	2.08	0.96	1.91	0.94	0.17	0.18
Perceived Severity	2.71	0.77	2.69	0.70	0.01	0.02
Perceived Benefits	2.89	0.69	3.03	0.70	-0.14	0.21
Perceived Barriers**	1.86	0.87	1.38	0.78	0.48	0.59
Self-Efficacy	2.66	0.70	2.81	0.56	-0.16	0.26
Perceived Benefits - Short Form	2.89	0.74	3.10	0.74	-0.22	0.30
Perceived Barriers - Short Form**	1.79	0.94	1.31	0.91	0.48	0.53

Note. Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). *d* = Cohen's *d*.

**$p < .01$

age. Both scales were negatively correlated with age (r = -.22, -.17, respectively).

Table 4.21 presents the mean item endorsement for each scale by race/ethnicity. The results revealed no significant differences by race/ethnicity for most scales: Perceived Susceptibility and Fears $F(3, 186)$ = 1.77, p = .115; Perceived Benefits $F(3, 186)$ = 1.33, p = .265; Self-efficacy $F(3, 186)$ = .25, p = .862; Perceived Benefits - Short Form $F(3, 186)$ = 1.23, p = .299. The Perceived Severity scale means differed significantly overall $F(3, 186)$ = 3.04, p = .003, but the group means were not significant different using post-hoc testing. Significant differences were found on the Perceived Barriers scale $F(3, 186)$ = 8.21, p = .000, with Hispanic and Other participants (M = 2.00, SD = 1.03; M = 1.91, SD = 0.86, respectively) endorsing significantly more barriers than Caucasian and African American participants (M = 1.34, SD = 0.72; M = 1.32, SD = 0.75, respectively), with a large effect sizes (0.75 to 0.85). Similar results were obtained on the Perceived Barriers - Short Form scale $F(3, 186)$ = 6.28, p = .000.

Table 4.22 presents the mean item endorsement for each scale by recruitment type (MTurk, Other Source). The results revealed no significant differences on the Perceived Benefits scale $t(190) = 1.46$, $p = .145$ and the Perceived Barriers – Short Form scale $t(190) = 1.75$, $p = .082$. Significant differences were found on the Perceived Susceptibility and Fears scale $t(190) = -2.84$, $p = .005$; Perceived Severity $t(190) = .-2.43$, $p = .016$; Perceived Barriers scale $t(190) = -5.38$, $p = .000$ and the Perceived Barriers – Short Form scale $t(190) = -5.83$, $p = .000$, with MTurk participants endorsing significantly more problems on these scales than participants from other sources with medium to large effect sizes (0.36 to 0.89). Significant differences were also found on the Self-efficacy scale $t(190) = 2.51$, $p = .013$, with participants from other sources ($M = 2.91$, $SD = 0.49$) endorsing higher self-efficacy than MTurk participants ($M = 2.68$, $SD = 0.65$), with a medium (0.39) effect size.

Table 4.23 presents the mean item endorsement for each scale by WHO-5 score. Scores of ≤ 50 (low scores) are indicative of depression, while scores greater than 50 (high scores) indicate subjective well-being (Topp, Ostergaard, Sondergaard, & Bech, 2015). Significant differences were found on the Perceived Susceptibility and Fears scale $t(189) = 6.85$, $p = .000$; Perceived Severity $t(189) = 2.71$, $p = .007$; Perceived Barriers scale $t(189) = 4.55$, $p = .000$ and the Perceived Barriers – Short Form scale $t(189) = 4.41$, $p = .007$, with participants with low scores endorsing significantly more problems on these scales than participants with high scores, with medium to large effect sizes (0.41 to 1.02). These results are consistent with the results obtained from examining the correlations between WHO-5 score and each scale. These scales also exhibited small to medium correlations with WHO-5 score, ranging from -.19 for the Perceived Severity scale to -.45 for the Perceived Susceptibility and Fears scale. Significant differences were also found on the Self-efficacy scale $t(189) = -2.72$, $p = .007$ and the Perceived

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Table 4.20

Mean Item Endorsement by Age

Scale	18-24 Year Olds[a]		25-39 Year Olds[b]		40-70 Year Olds[c]		18-24 Year Olds vs. 25-39 Year Olds		18-24 Year Olds vs. 40-70 Year Olds		25-39 Year Olds vs. 40-70 Year Olds	
	M	*SD*	*M*	*SD*	*M*	*SD*	Mean Difference	*d*	Mean Difference	*d*	Mean Difference	*d*
SF	2.16[d]	0.85	2.02	0.99	1.75[d]	0.92	0.14	0.15	0.41	0.47	0.27	0.28
SEV	2.81	0.73	2.73	0.69	2.56	0.77	0.08	0.11	0.25	0.34	0.17	0.24
BEN	2.96	0.8	2.97	0.68	3.02	0.66	-0.01	0.01	-0.06	0.08	-0.05	0.07
BAR*	1.60	0.81	1.69[e]	0.89	1.29[e]	0.73	-0.09	0.11	0.31	0.41	0.40	0.49
SELF	2.77	0.65	2.7	0.62	2.84	0.57	0.07	0.11	-0.07	0.12	-0.14	0.23
BEN-S	3.00	0.83	2.99	0.74	3.11	0.68	0.01	0.01	-0.11	0.15	-0.12	0.17
BAR-S	1.51	0.93	1.60	0.97	1.26	0.89	-0.09	0.09	0.25	0.28	0.34	0.36

[a]*n* = 47; [b]*n* = 85 [c]*n* = 58.

Note. Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). *d* = Cohen's *d*. Means with the same superscript were significantly different upon post-hoc testing at *p* < .05. SF = Perceived Susceptibility and Fears, SEV = Perceived Severity, BEN = Perceived Benefits, BAR = Perceived Barriers, SELF = Self-Efficacy, BEN-S = Perceived Benefits - Short Form; BAR-S = Perceived Barriers - Short Form.

p < .05

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Table 4.21

Mean Item Endorsement by Race/Ethnicity

Scale	Caucasian[a]		African American[b]		Hispanic[c]		Other[d]		Caucasian vs. African American		Caucasian vs. Hispanic		Caucasian vs. Other		African American vs. Hispanic		Hispanic vs. Other	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	Diff	*d*	Diff	*d*	Diff	*d*	Diff	*d*	Diff	*d*
SF	1.87	0.92	1.85	0.83	2.33	1.12	2.09	0.95	0.02	0.02	-0.46	0.48	-0.22	0.24	-0.48	0.50	0.24	0.24
SEV*	2.58	0.74	2.6	0.71	2.92	0.75	2.91	0.64	-0.02	0.03	-0.34	0.46	-0.33	0.47	-0.32	0.45	0.01	0.02
BEN	2.96	0.75	2.89	0.65	2.83	0.77	3.15	0.56	0.07	0.10	0.13	0.17	-0.19	0.27	0.06	0.09	-0.32	0.51
BAR**	1.34	0.72	1.32	0.75	2.00	1.03	1.91	0.86	0.02	0.03	-0.66	0.85	-0.57	0.75	-0.68	0.78	0.09	0.1
SELF	2.74	0.61	2.86	0.67	2.76	0.77	2.76	0.51	-0.12	0.19	-0.02	0.03	-0.02	0.03	0.10	0.14	0.00	0.00
BEN-S	3.03	0.77	2.90	0.74	2.87	0.86	3.19	0.59	.13	0.17	0.16	0.21	-0.16	0.22	0.04	0.05	-0.32	0.47
BAR-S**	1.29	0.87	1.18	0.81	1.89	1.13	1.85	0.91	.12	0.14	-0.59	0.65	-0.56	0.64	-0.71	0.75	0.03	0.03

[a]*n* = 100; [b]*n* = 25; [c]*n* = 21; [d]*n* = 44.

Note. Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). *d* = Cohen's *d*. SF = Perceived Susceptibility and Fears, SEV = Perceived Severity, BEN = Perceived Benefits, BAR = Perceived Barriers, SELF = Self-Efficacy, BEN-S = Perceived Benefits - Short Form; BAR-S = Perceived Barriers - Short Form, Diff = Mean Difference.

*p < .05

Benefits scale $t(189) = 4.55$, $p = .000$, with participants with high scores endorsing higher self-efficacy and more benefits than participants with low scores, with a medium effect sizes (0.35, 0.36). Similar results were obtained on the Perceived Barriers - Short Form scale $t(189) = -2.42$, $p = .016$. As expected, these scales exhibited positive correlations with WHO-5 score, ranging from .21 for the Self-efficacy scale to .23 for the Perceived Benefits scale and its short form scale.

Table 4.24 presents the mean item endorsement for each scale by current mental health service use (any current service use, no current service use). The results revealed no significant differences for several scales: Perceived Severity $t(189) = -1.21$, $p = .225$; Perceived Barriers scale $t(189) = -0.59$, $p = .557$; and Perceived Benefits – Short Form $t(189) = 0.03$, $p = .978$. However, significant differences were found on the Perceived Susceptibility and Fears scale $t(189) = -7.84$, $p = .000$, Perceived Benefits scale $t(189) = -2.45$, $p = .015$, the Perceived Benefits – Short Form scale $t(189) = -2.76$, $p = .006$, and Self-efficacy scale $t(189) = -2.90$, $p = .004$, with those currently using services obtaining significantly higher means on these scales than those who were not currently using services, with medium to large effect sizes (0.41 to 1.29).

Table 4.25 presents the mean item endorsement for each scale by past mental health service use. The results revealed no significant differences for most scales: Perceived Severity $t(189) = 0.28$, $p = .779$; Perceived Benefits $t(189) = -1.67$, $p = .096$, Perceived Barriers $t(189) = 0.00$, $p = 1.000$, Self-efficacy $t(189) = -.90$, $p = .369$, Perceived Benefits – Short Form $t(189) = -1.74$, $p = .084$, and Perceived Barriers – Short Form $t(189) = 0.32$, $p = .748$. Similar to current service use results, significant differences were found on the Perceived Susceptibility and Fears scale $t(189) = -6.04$, $p = .000$, with those who had used services in the past ($M = 2.36$, $SD = 0.90$)

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Table 4.22

Mean Item Endorsement by Recruitment Type

Scale	MTurk (*n* = 125)		Other Source (*n* = 67)		Mean Difference	*d*
	M	*SD*	*M*	*SD*		
Perceived Susceptibility and Fears**	2.11	0.92	1.71	0.93	0.40	0.44
Perceived Severity*	2.78	0.76	2.52	0.63	0.26	0.36
Perceived Benefits	2.93	0.77	3.09	0.53	-0.16	0.23
Perceived Barriers**	1.77	0.85	1.13	0.63	0.64	0.82
Self-Efficacy*	2.68	0.65	2.91	0.49	-0.23	0.39
Perceived Benefits - Short Form	2.97	0.82	3.16	0.55	-0.19	0.26
Perceived Barriers - Short Form**	1.74	0.92	0.97	0.76	0.77	0.89

Note. Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). *d* = Cohen's *d*.
Other Source = participants recruited via Facebook, word of mouth or email.
*p < .05
**p < .01

Table 4.23

Mean Item Endorsement by WHO-5 Score

Scale	WHO-5 ≤ 50 (*n* = 76)		WHO-5 > 50 (*n* = 115)		Mean Difference	*d*
	M	*SD*	*M*	*SD*		
Perceived Susceptibility and Fears**	2.49	0.75	1.63	0.90	0.86	1.02
Perceived Severity**	2.87	0.63	2.58	0.76	0.29	0.41
Perceived Benefits*	2.84	0.82	3.08	0.59	-0.24	0.35
Perceived Barriers**	1.87	0.89	1.33	0.73	0.54	0.68
Self-Efficacy**	2.61	0.67	2.86	0.56	-0.25	0.41
Perceived Benefits - Short Form*	2.87	0.87	3.14	0.63	-0.26	0.36
Perceived Barriers - Short Form**	1.82	1.02	1.24	0.80	0.59	0.66

Note. Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). *d* = Cohen's
d. WHO-5 ≤50 (low score) indicates depression, WHO-5 > 50 (high score) indicates
subjective well-being.
*p < .05
**p < .01

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Table 4.24

Mean Item Endorsement by Current Service Use

Scale	Any Current Service Use (*n* = 50)		No Current Service Use (*n* = 141)		Mean Difference	*d*
	M	*SD*	*M*	*SD*		
Perceived Susceptibility and Fears**	2.76	0.81	1.70	0.83	1.06	1.29
Perceived Severity	2.80	0.85	2.66	0.67	0.14	0.20
Perceived Benefits*	3.19	0.61	2.91	0.72	0.28	0.41
Perceived Barriers	1.61	1.01	1.52	0.77	0.09	0.11
Self-Efficacy**	2.97	0.55	2.68	0.62	0.29	0.48
Perceived Benefits - Short Form**	3.28	0.68	2.94	0.75	0.33	0.46
Perceived Barriers - Short Form	1.47	1.04	1.47	0.91	0.00	0.00

Note. Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). *d* = Cohen's *d*.

*$p < .05$

**$p < .01$

Table 4.25

Mean Item Endorsement by Past Service Use

Scale	Any Past Service Use (*n* = 94)		No Past Service Use (*n* = 97)		Mean Difference	*d*
	M	*SD*	*M*	*SD*		
Perceived Susceptibility and Fears**	2.36	0.90	1.60	0.83	0.76	0.88
Perceived Severity	2.68	0.75	2.71	0.70	-0.03	0.04
Perceived Benefits	3.07	0.62	2.90	0.76	0.17	0.25
Perceived Barriers	1.55	0.87	1.55	0.81	0.00	0.00
Self-Efficacy	2.80	0.61	2.72	0.61	0.08	0.13
Perceived Benefits - Short Form	3.13	0.68	2.94	0.79	0.19	0.25
Perceived Barriers - Short Form	1.45	0.94	1.49	0.94	-0.04	0.05

Response scale ranged from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). *d* = Cohen's *d*.

**$p < .01$

endorsing higher levels of susceptibility and fear than those who had not (*M* = 1.60, *SD* = 0.83),

with a large (0.88) effect size.

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Table 4.26 presents a summary of the relationship between the MHBMA and various demographic factors discussed in the preceding section. Overall, the Perceived Barriers scale exhibited the most significant group differences across a range of demographic factors (gender, age, race/ethnicity). WHO-5 scores were also significantly different across all scales, indicating that those currently experiencing mental health problems may approach services in a vastly different way than those who are not experiencing mental health problems. Current service use was also associated with higher endorsement of the Perceived Susceptibility and Fears scale, but also higher endorsement of the Perceived Benefits and Self-efficacy scales.

Table 4.26

Summary of the Relationship Between the MHBMA-Version 3 and Other Variables

Relation to Other Variables	MHBMA Scales						
	SF	SEV	BEN	BAR	SELF	BEN-S	BAR-S
Gender	*ns*	*ns*	*ns*	**	*ns*	*ns*	**
Age	*ns*	*ns*	*ns*	*	*ns*	*ns*	**
Race/ethnicity	*ns*	*	*ns*	**	*ns*	*ns*	**
Recruitment Type (MTurk, Other)	**	*	*ns*	**	*	*ns*	**
WHO-5 Score (Low Score, High Score)	**	**	*	**	**	*	**
Current Service Use (Any, None)	**	*ns*	*	*ns*	**	**	*ns*
Past Service Use (Any, None)	**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

Note. *ns* = Not significant. SF = Perceived Susceptibility and Fears, SEV = Perceived Severity, BEN = Perceived Benefits, BAR = Perceived Barriers, SELF = Self-Efficacy, BEN-S = Perceived Benefits - Short Form; BAR-S = Perceived Barriers - Short Form.
*$p < .05$
**$p < .01$

Chapter 5: Discussion

The purpose of this study was to develop a measure of readiness to seek formal mental health services, the Mental Health Belief Model Assessment (MHBMA). This chapter includes interpretation of the results in the context of relevant literature, as well as guidelines for the use and interpretation of the MHBMA. Delimitations and limitations of the current study and implications for research and practice are discussed.

The MHBMA-Version 3 resulted from an iterative item development and review process described in detail in Chapter 3. The development began with an initial item pool of 112 items written to measure aspects of the HBM as they apply to readiness to seek mental health services. After item review and revision, the initial validation study ($N = 192$) collected data on 106 items. During item analysis of the data from the initial validation study, 30 items were removed for a total of 76 items composing the MHBMA-Version 3. Reasons for item removal included low item-total correlation with its parent scale, having a correlated error with another item (indicating redundancy), or expert panel feedback. Items tapping logistical barriers were also removed from the Perceived Barriers scale to bring the scale more in line with the rest of the scales, which are focused on attitudes toward mental health services. A 20-item version, the MHBMA Short Form, was also created. It contains only items from the Perceived Benefits and Perceived Barriers scales which performed well in the validation sample and which provided adequate content coverage by sampling the benefit and barriers categories included on these scales.

In terms of reliability, internal consistency reliability was high for each scale, with Cronbach's alphas ranging from .90 to .97. All of the item-total correlation coefficients greatly

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exceeded the generally accepted level of .30. In terms of test-retest reliability, Pearson correlation coefficients between Time 1 and Time 2 for each scale were strong, ranging from .82 to .92. Reliability for the MHBMA Short Form was similar to the full version, with high scale Cronbach's alphas and test-retest correlation coefficients.

In terms of validity, evidence of internal structure can be measured in several ways, via factor analysis and examining the intercorrelations between scales. In analyzing the EFA results, the results from examination of the scree plot suggested a five factor measurement model, parallel analysis suggested a six factor measurement model, while Kaiser's (1960) criterion suggested a 12 factor model. Ultimately, the five factor model was determined to be the best based on the results of the EFA and interpretability of the factors. The five factors mapped onto the five scales, with the Perceived Susceptibility scale combined with the Fears scale. Although these scales were originally conceptualized as separate scales, there is significant content overlap which, along with the results from the five and six factor model EFAs, supports the decision to combine the scales. In terms of intercorrelations, as expected, the strongest positive correlations were found between similar scales (e.g., Perceived Susceptibility and Fears and Perceived Severity) and the strongest negative correlations were between the most dissimilar scales, (e.g., Perceived Benefits and Perceived Barriers).

Validity was also explored by examining the relations between the MHBMA and other variables. As with the scale intercorrelations, moderate to high correlations in the expected directions were found between the MHBMA and Attitudes Toward Seeking Professional Psychological Help Scale-Short Form (ATSPPH-SF; Fischer & Farina, 1995). The ATSPPH-SF is a 10-item scale designed to measure positive attitudes toward treatment, where higher scores indicate more favorable treatment attitudes. Therefore, it is evidence in support of the

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MHBMA's validity that MHBMA's Perceived Benefits scale obtained medium to large correlations with the ATSPPH-SF's factors and total scores. Additional validity support is evident in the fact that the Perceived Barriers scale had a large negative correlation with the ATSPPH-SF's Value and Need in Seeking Treatment scale. This makes sense given that many items on the Perceived Barriers scale measure negative attitudes toward treatment, a lack of belief in its efficacy, as well as a perception of lack of need on the part of the participant. Similar correlations were found with the MHBMA Short Form.

In addition, medium to large correlations in the expected directions were found between the MHBMA and another similar measure, the Barriers to Help Seeking Scale (BHSS; Mansfield, Addis, & Courtenay, 2005). The BHSS is a 31-item measure of barriers to seeking professional help for mental and physical problems, where higher scores indicate more barriers. As expected, the strongest correlations were between the Perceived Barriers scale and each BHSS scale and Total Scores (ranging from $r = .37$ to $r = .63$). This provides evidence for the validity of the Perceived Barriers scale in particular. Similar correlations were found with the MHBMA Short Form.

One of the most important pieces of validity evidence comes from examining the correlations between the readiness question (If you had a mental health problem, how likely would you be to go to therapy?) and the MHBMA scales. As expected, the scales representing positive attitudes about mental health services had large positive correlations with likelihood of using services, ranging from .45 for the Self-efficacy scale to .46 for the Perceived Benefits scale and .48 for its short form scale. Medium negative correlations were found for the Perceived Barriers scale ($r = -.30$) and it short form scale ($r = -.34$). Therefore, there is evidence that the scale endorsement of the MHBMA is indicative of individual's perceptions of their readiness to

seek services. The evidence summarized in the preceding section provides support for the MHBMA as a valid and reliable measure of readiness to seek services.

The scale scores on the MHBMA were also examined in relation to a number of demographic and service use variables. Overall, the Perceived Barriers scale exhibited the most significant group differences across a range of demographic factors (gender, age, race/ethnicity). Males endorsed higher levels of perceived barriers, which is consistent with the research finding that males endorse more negative attitudes toward seeking services than females and are less likely to use services for mental and physical health problems (Mansfield, Addis, & Courtenay, 2005). Younger individuals also endorsed higher levels of perceived barriers. This makes sense given the hypothesized relationship between attitudinal and logistical barriers that can account for the low utilization rate seen in young individuals aged 18 to 34 years (Perlick, Hofstein, & Michael, 2010). In terms of race and ethnicity, Hispanic and Other participants (defined as American Indian/Alaskan Native, Asian, and multi-racial individuals) endorsed higher levels of perceived barriers, which is consistent with research that has found that, regardless of level of symptoms and distress, minority groups such as African Americans, Hispanics and Asians receive fewer mental health services than Caucasians, even when controlling for socioeconomic status (Neighbors et al., 2007).

Examining participants by subjective well-being (as measured by the WHO-5) and recruitment type (MTurk vs. other source) reveal similar patterns to each other. WHO-5 scores were significantly different across all scales, with lower scores (indicative of depression) associated with higher endorsement of the Perceived Susceptibility and Fears scale, Perceived Severity scale, and Perceived Barriers scale and lower endorsement of the Perceived Benefits and Self-efficacy scales. MTurk participants endorsed these scales similarly, consistent with

research suggesting that MTurk participants endorse clinical symptoms at levels similar to those with diagnosed mood and anxiety disorders (Arditte, Cek, Shaw, & Timpano, 2016). These results indicate that those currently experiencing mental health problems may approach services in a vastly different way than those who are not experiencing mental health problems. It seems plausible that individuals who need services are the ones least likely to seek them, by the very nature of their problems. However, it seems that service use may improve these attitudes. Similar to the WHO-5 and MTurk results, current and past service use was also associated with higher endorsement of the Perceived Susceptibility and Fears scale. However, current service use was also associated with higher endorsement of the Perceived Benefits and Self-efficacy scales. It seems these participants are rightly feeling susceptible and fearful, but they acknowledge the benefits of therapy and feel positively about their ability to use therapy to their advantage.

Use and Interpretation of the MHBMA

Both the full MHBMA and MHBMA Short Form have utility in various clinical settings, such as clinical psychology private practices, community mental health centers, college counseling centers, and anywhere else individuals may be engaging in mental health services. When interpreting the results of the MHBMA Short Form, it is important to note that it should be used in certain circumstances only (e.g., as an initial screener to determine the need for further assessment, rather than representative of a comprehensive assessment). Universal screening with the MHBMA Short Form can be used in settings where a quick assessment is needed. For example, it can be used in the waiting room of a clinical psychology practice as part of intake paperwork. The MHBMA can also be used for serial administration to allow for comparison of changes in ratings over time, such as during mental health services or following an engagement intervention, to monitor response to treatment and intervention.

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There are several ways to interpret the scores of psychological assessments. This could include individual item analysis, raw scores for scales, and normative scores for scales. When examining raw scores, sums or means of the items for each scale are traditionally reviewed. Cut scores based on raw scores can also be used a means to determine when further assessment is necessary. Normative scores, such as *T* scores, can also be used to compare an individual's performance on the scale to a normative group. To create normative scores, there needs to be a sample that is representative of the group to which one desires to make normative comparisons. In most cases, this is the U.S. population, therefore, large U.S. census-matched samples are generally required to facilitate the creation of normative scores. At this time, the MHBMA does not have a representative sample from which to create normative scores. Therefore, interpretation should be conducted by reviewing an individual's means on all scales, followed by item analysis, especially on the Perceived Barriers and Perceived Benefits scales. What follows are general interpretive guidelines for mean endorsement rates of each scale. These are meant to be tentative and would be refined as more research continues to be conducted on the MHBMA.

The Perceived Susceptibility and Fears scale measures how susceptible the individual feels to mental health problems and how much they fear them. Individuals who obtain a low score likely do not expect to experience a mental health problem and may not feel anxious when considering that possibility. Individuals who obtain a high score may feel anxious and worry about having a mental health problem and may feel particularly at risk of experiencing one. A high score may also reflect someone who has experienced a mental health problem in the past or is experiencing one currently. He or she may also feel uncomfortable talking about a mental health problem with a mental health professional, and may be embarrassed if their friends or family knew they were receiving services.

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The Perceived Severity scale measures how much the individual perceives mental health problems to have serious consequences (morbidity and mortality). Individuals who obtain a low score likely feel that having a mental health problem would not cause much disruption to his or her life. Individuals who obtain a high score likely feel a mental health problem would negatively impact his or her day-to-day life, including social and work functioning. He or she may also feel uncomfortable talking about a mental health problem with a mental health professional, and may be embarrassed if their friends or family knew they were receiving services.

The Perceived Benefits scale measures the individual's expectation that seeking mental health services reduces the risk of experiencing a mental health problem or the consequences of mental health problems. Unlike the Perceived Susceptibility and Fears scale and the Perceived Severity scale, higher scores on the Perceived Benefits scale indicate positive attitudes rather than negative attitudes. Individuals who obtain a high score may feel that mental health services are effective and have many benefits, such as improving life functioning, reducing symptoms, and feeling better. He or she would also likely feel comfortable talking about a mental health problem with a mental health professional. Individuals who obtain a low score may feel that mental health services are ineffective, or that they would not be helped by mental health services. They may only endorse a few benefits of mental health services. When reviewing the items endorsed on the Perceived Benefits scale, it is important to keep in mind that these are client strengths that can be used to overcome barriers. Using a strengths-based counseling approach may be particularly helpful when interpreting the Perceived Benefits scale with an individual.

The Perceived Barriers scale assesses the factors that affect an individual's decision to take action about a mental health problem by seeking services. Individuals who obtain a low

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score may feel that mental health services are effective, and may only endorse a few barriers to service use. Individuals who obtain a high score may feel that mental health services are ineffective, or that they would not be helped by mental health services. They may express a need for privacy, stigma imposed by themselves or others, fear or stress about the act of help-seeking, concern about having a bad experience, or may prefer help from another source. He or she would likely feel uncomfortable talking about a mental health problem with a mental health professional, and be embarrassed if their friends or family knew they were receiving services. Individual item responses may be particularly helpful when interpreting this scale. Depending on the individual, more time may be spent focusing on this scale than the others, as endorsement of these items may be associated with an individual not initiating or being retained in services.

The Self-efficacy scale measures the individual's belief that they can engage in, and change through, mental health services. Unlike the Perceived Susceptibility and Fears scale, the Perceived Severity scale and the Perceived Barriers scale, higher scores on the Self-efficacy scale indicate positive attitudes rather than negative attitudes. Individuals who obtain a high score may feel confident about and capable of participating in mental health services, as well as improving from them. He or she would likely feel comfortable talking about a mental health problem with a mental health professional. Individuals who obtain a low score may find it difficult to regularly attend mental health services or to engage with them enough to find them useful. These individuals may need services focused on improving both their general and mental health services self-efficacy, as self-efficacy is key to an individual being able to engage in behavioral change (Bandura, 1977).

It is important to note that clinicians may want to use the MHBMA, but feel it is too long and would be burdensome to their specific clients. In this case, the MHBMA Short Form can be

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used. As it is a short form, interpretation should be limited; rather, the results of the MHBMA Short Form should be used to determine if further assessment with the full MHBMA is warranted.

Next Steps after Interpretation

Following the use and interpretation of the MHBMA, next steps vary by the needs of the individual. Steps may include psychoeducation, assessment of an individual's readiness to change (e.g., via the Transtheoretical Model), motivational interviewing, or other evidence-based interventions aimed at increasing engagement and retention (for a review, see Greene, Bina, & Gum, 2016). Motivational interviewing may be particularly helpful with clients who are unmotivated to engage in services as it focuses on motivating individuals to change behaviors that are preventing them from engaging in a new behavior, in this case, seeking and engaging in services (Hettema, Steel, & Miller, 2005). The MHBMA can also be paired with measures of measures of specific symptomatology (if a niche practice) or broadband measures of psychopathology to simultaneously obtain information about level of severity and readiness to engage in therapy.

As discussed in Chapter 2, the Health Belief Model (HBM) includes other factors not included in the MHBMA that warrant further discussion with an individual. Discussion of logistical barriers, such as lack of child care or transportation, may elucidate areas that can be addressed with referral for services (e.g., babysitting, bus vouchers). Discussion of modifying factors (age, gender, ethnicity, personality, socioeconomic status, and knowledge about mental health and services) may clarify for the individual how these factors affect their behaviors. Discussion of cues to action (i.e., internal or external triggering mechanisms that activate an individual's help-seeking behavior) can be used as a place to start therapy. Many clinicians

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already do this by asking during an intake interview what brought the client in to services. Often the precipitating event can be illuminating about the origin of the individual's underlying problems.

Factors not included in the HBM include interpersonal, cultural and contextual issues that affect help seeking. Along with a discussion of these issues, a sensitivity to the culture of the individual should be maintained. Members of some cultures or racial/ethnic backgrounds may have a different level of comfort around mental health services and open discussion of mental health problems.

Delimitations and Limitations

Study delimitations included the decision to only include adults, ages 18 years and older, in the validation sample. Mental health services and research on such services are markedly different for children, as it involves the interplay of many factors outside the child, such as their family, school, and pediatric healthcare system. The research informing the current study has focused on mental health services in adults, and thus, the development of the MHBMA was limited to adults.

Study limitations included use of a small, convenience sample, which impedes the generalizability of the study results as well as impedes the interpretability of MHBMA scores. In order to make normative comparisons, the sample should be sufficiently large, and be representative of the population with which the instrument will be used (Standard 5.8 in AERA, APA, & NCME, 2014). In a similar vein, there was a lack of racial/ethnic diversity in the cognitive interview sample, which may have reduced the effectiveness of the procedure. The utility of the MHBMA Short Form is also limited in that the reliability and validity have not been

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investigated in an independent sample (Standard 2.9 in AERA, APA, & NCME, 2014; Smith, McCarthy, & Anderson, 2000).

The use of self-report survey data has inherent limitations. One such limitation is socially desirable responding, or the tendency for individuals to present a positive image of themselves or "fake-good" to conform to societal expectations. Certain survey topics are more susceptible to this phenomenon than others, such as when individuals are asked to self-report levels of anxiety and depression (Todaro, Sears, Rodrigues, & Musto, 2005) or a history of mental health problems (Black et al., 2005). Van de Mortel (2008) found that when such studies also included a measure of social desirability, it influenced their results almost half the time. Therefore, it seems likely socially desirable responding may have had an impact on the current study.

The HBM itself also has limitations, which were described in more detail in Chapter 2. Like the other theories focused on individual behavior, the HBM does not consider interpersonal, cultural, and contextual issues that affect help seeking and focuses on the intention of the individual, rather than actual behavior and maintenance of behavior.

Implications for Research and Practice

This study represents the completion of Steps 1 to 7 of the instrument construction process (Crocker & Algina, 1986). Step 8 requires the continuation of studies on how the instrument is functioning. Therefore, future research should be conducted with a larger, U.S. census-matched normative sample so that the administration and scoring can be standardized. Adequate sample sizes across demographic factors (e.g., age, gender, race/ethnicity) should be obtained in order for normative comparisons to be made. Creation of normative scores (e.g., percentiles, T scores) based on this sample would facilitate interpretation of individual scores. Both types of scores increase interpretability by providing information about an individual's

scores relative to the participants in the normative sample. *T* scores provide information about an individual's scores relative to the sample's mean scores, while percentiles specify the percentage of individuals in the sample with scores at or below that score. Base rates, or the frequency with which certain scores were seen in the normative sample, can also be used to supplement interpretation. During the normative score derivation process, a multivariate analyses of variance (MANOVA) or multiple regression (depending on the nature of independent variables) should be conducted to examine if demographic factors such as gender or age were significant factors in predicting scale scores. If so, separate norms by gender or age may be required in order to provide the most accurate normative information. In addition, before comparing mean scores across groups (e.g., gender, age, race/ethnicity), measurement invariance testing should be conducted.

The larger, U.S. census-matched normative sample should also be utilized to conduct a confirmatory factor analysis (CFA) to confirm the MHBMA's factor structure. Besides the correlated factor models explored in this study, alternative models should be explored. One such alternative model is a higher-order model in which the lower order scales load onto two higher order factors representing general positive and negative mental health attitudes. Similarly, a bi-factor model may be explored, wherein there is a general mental health attitude factor, as well as specific scale-level factors. This sample can also be used to provide independent validation of the MHBMA Short Form, a crucial step in developing a valid short form (Smith, McCarthy, & Anderson, 2000). In addition, as suggested by Van de Mortel (2008), further validation of the MHBMA should include a measure of socially desirable responding to evaluate the impact of this type of responding on MHBMA scores.

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Other statistical methods, such as the creation of reliable change scores, can increase interpretability of the MHBMA. Reliable change scores indicate the extent to which change in an individual's scores on repeat testing can be attributed to measurement error or practice effects, rather than meaningful changes on the underlying test construct. Thus, change in scores between assessments can be meaningfully interpreted.

Analysis of common clinical comparison groups such as those with depression and anxiety would add to evidence of relations to other variables, specifically, test-criterion relationships. Base rates of these clinical groups (as well as the representative U.S. normative samples) would allow clinicians to compare the endorsement rate of a particular individual to meaningful groups. Base rates, or the frequency with which certain scores are seen in individuals with and without known mental health problems, can also be used to supplement interpretation.

Qualitative methods can also be employed to explore the perceptions of both clinicians and individuals completing the measure. For example, interviews or focus groups could be used to explore clinicians' acceptance of the MHBMA and MHBMA Short Form, and feasibility of use in their practice. Qualitative interviews with individuals completing the MHBMA can be used to explore the potential effects of completing the measure, such as increased self-awareness about an individual's barriers to service use and greater awareness of the benefits of service use and increased acceptance of mental health services. In addition, the items themselves may need to be examined in future research, as the language around mental health continues to change, and new modes of therapy, such as teletherapy, emerge.

The information provided by the MHBMA can be helpful in both clinical and research (i.e., development and evaluation of interventions) contexts. In clinical practice, it may help increase an individual's self-awareness and perhaps help the individual change some of the

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factors preventing them from engaging in services. Moreover, it may serve as a starting point for treatment, in that a clinician can help address these factors to retain the individual in services.

In addition to use of the MHBMA to inform clinical practice with individual clients, it can also be integrated into engagement interventions. Often occurring before mental health services begin, engagement interventions aim to increase treatment initiation and retention by addressing various predictors and barriers related to mental health service use. These engagement interventions are often empirically tested via randomized controlled trials (RCTs). The MHBMA can be used in these RCTs to monitor change in readiness pre- and post-intervention. Changing a measurable outcome such as readiness to seek services is a core component of assessing the usefulness of these interventions.

Conclusions

The purpose of this study was to develop and begin accumulating evidence of the reliability and validity of the MHBMA. This process does not end with the conclusion of this study, but is a process that will continue with further research using the MHBMA. Future research should be conducted with larger, U.S. census-matched samples, as well as clinical comparison groups, to continue the validation process and standardize administration and scoring procedures. In addition to research applications, it is hoped that the MHBMA will help clinicians to engage and retain their clients so that these individuals receive the full benefits of mental health services.

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Appendix A: Mental Health Belief Model Assessment – Version 1

Perceived Susceptibility

No.	Item
1	A person's family history makes it more likely they will get a mental health problem.
2	I am concerned about my risk of getting a mental health problem
3	I am more likely to get a mental health problem than other people.
4	I feel I will get a mental health problem some time during my life.
5	I feel that my chances of getting a mental health problem in the future are good.
6	I worry a lot about getting a mental health problem.
7	It is likely I will get a mental health problem in the future.
8	My chances of getting a mental health problem are great.
9	My chances of getting a mental health problem are high.
10	My odds of developing a mental health problem are high.
11	There is a good possibility that I will get a mental health problem.
12	Within the next year, I will get a mental health problem.

Perceived Severity

No.	Item
1	A mental health problem is a hopeless disease.
2	A mental health problem would endanger my relationship with a significant other.
3	A mental health problem would threaten my relationship with a significant other.
4	Having a mental health problem would make daily activities more difficult.
5	Having a mental health problem would negatively affect my day to day life.
6	Having a mental health problem would negatively affect my family.
7	Having a mental health problem would negatively affect my social life.
8	Having a mental health problem would negatively affect my work.
9	I am afraid to even think about mental health problems.
10	If I get a mental health problem, it will be very serious.
11	If I get a mental health problem, it will result in serious consequences.
12	If I had a mental health problem my career would be endangered.
13	If I had a mental health problem, my whole life would change.
14	If I was diagnosed with a mental health problem, it would be more serious than other diseases.
15	My feelings about myself would change if I was diagnosed with a mental health problem.
16	My financial security would be endangered if I was diagnosed with a mental health problem.
17	Problems I would experience from a mental health problem would last a long time.

Perceived Benefits

No.	Item
1	Getting therapy can help me change things in my life for the better.
2	Getting therapy can help me feel better.
3	Getting therapy can help me interact better with my family.
4	Getting therapy can help me interact better with my friends.
5	Getting therapy can help me interact better with my significant other.
6	Getting therapy can help me interact better with people at work/school.
7	Getting therapy can improve my perspective on a mental health problem.
8	Getting therapy can improve my relationship with my significant other.
9	Getting therapy can improve the symptoms of a mental health problem.
10	Getting therapy can provide me with a "safe place" where I can open up emotionally.
11	Getting therapy can provide me with an outlet to talk about things that are bothering me.
12	Getting therapy can reduce the risk of a mental health problem getting worse.
13	Getting therapy for problems that are bothering me now can prevent future problems for me.
14	I have a lot to gain by getting therapy when I need it.
15	Getting therapy helps increase my chances of feeling better soon.
16	People can recover from mental health problems with diagnosis and therapy from a counselor.

Perceived Barriers

No.	Item
1	A mental health problem is too personal to tell anyone about.
2	A mental health problem wouldn't bother me enough to get therapy.
3	A therapist wouldn't understand my mental health problem.
4	Being in therapy is a lot of work.
5	Even if I went to therapy, it would not help with a mental health problem.
6	Getting therapy could affect my job.
7	Getting therapy means you aren't strong enough to deal with a mental health problem yourself.
8	I am afraid a therapist would pass on information about me to other people.
9	I am afraid I would not be able to talk to a counselor about a mental health problem.
10	I am afraid to get therapy.
11	I don't feel comfortable talking with a therapist I don't know.
12	I don't think getting therapy would help me with a mental health problem.
13	I don't want help for a mental health problem from anyone.
14	I don't want to talk to a therapist because I value my privacy.
15	I have never felt like I've needed therapy.
16	I have trouble recognizing symptoms of a mental health problem.
17	I prefer to handle a mental health problem on my own.
18	I think I should work out my own mental health problems.
19	I worry about being treated badly by a therapist.

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20   I worry about having a bad experience with a therapist.
21   I worry about how stressful it would be to get therapy.
22   I would be concerned about what others might think if they found out I was getting therapy.
23   I would prefer to get help from a family member or friend rather than a therapist.
24   I would rather not talk about my feelings with a therapist.
25   I wouldn't want anyone to know if I was going to therapy.
26   I wouldn't want to burden anyone with a mental health problem.
27   If I had a mental health problem, I would solve it by myself.
28   If I went to therapy, other people would think I am weak.
29   I'm embarrassed to talk about a mental health problem.
30   Mental health problems tend to get better on their own.
31   Mental health problems tend to work out by themselves.
32   My family would make fun of me if I got therapy for a mental health problem.
33   My friends would make fun of me if I got therapy for mental health problems.
34   People who go to therapy are crazy.
35   Therapy isn't effective in treating mental health problems.
36   Getting therapy is expensive.
37   Getting therapy is inconvenient.
38   Getting therapy is too time consuming.
39   Getting therapy would interfere with other activities in my life.
40   I can't afford to get therapy.
41   I don't have easy access to therapists in my area.
42   I don't have enough money to get therapy.
43   I don't have ready access to transportation to get therapy.
44   I would have to travel too far to get therapy.
45   If I had a mental health problem, I wouldn't know how to get help.
46   It would be hard to get an appointment for therapy.
47   My health insurance does not cover therapy.
48   Practical barriers (e.g., scheduling, cost, and location of services) make it hard to get therapy.

Self-Efficacy

No.	Item
1	Getting therapy is worth the effort.
2	Getting therapy will be easy for me.
3	Getting therapy will help me find relief from symptoms.
4	I am capable of making the necessary behavioral changes to improve from therapy.
5	I am capable of making the necessary psychological changes to improve from therapy.
6	I am capable of making the changes necessary to improve how I feel.
7	I am capable of using therapy to help with a mental health problem.
8	I am confident that I could make it to regular therapy appointments.
9	I am willing to put in the work to get the most out of therapy.
10	I believe therapy will help me cope with a mental health problem.

11   It is important to be an active participant in therapy.

Fears

No.	Item
1	The thought of mental health problems scares me.
2	When I think about mental health problems, I feel nervous.
3	When I think about mental health problems, I get upset.
4	When I think about mental health problems, I get depressed.
5	When I think about mental health problems, I get jittery.
6	When I think about mental health problems, my heart beats faster.
7	When I think about mental health problems, I feel uneasy.
8	When I think about mental health problems, I feel anxious.

Appendix B: Expert Panel Rating Form

	Item Ratings							
	Directions: Please review the following items and rate each one based on the following criteria: **Item Quality** **Quality of the item** (5-point Likert scale with 1 = Very Poor Quality, 2 = Poor Quality, 3 = Average Quality; 4 = Good Quality; 5 = Very Good Quality) **Representative of the corresponding scale** (5-point Likert scale with 1 = Not at all Representative; 2 = Somewhat Representative; 3 = Representative; 4 = Very Representative; 5 = Extremely Representative) **Face validity to the respondent** (5-point Likert scale with 1 = No face validity; 2 = Some face validity; 3 = Average; 4 = Good face validity; to 5 = Strong face validity) Then, please indicate Yes or No if the item **Problematic** and why. Finally, there is space for your suggestions on improving the item. **Item Bias** Please indicate Yes or No if the item has **Potential Bias/Offensiveness**. If Yes, discuss why the item is biased and toward whom. Finally, there is space for your suggestions on improving the item. Last, rate the entire scale in terms of its overall completeness, using a 5-point Likert scale with 1 = Not at all Complete; 2 = Somewhat complete; 3 = Complete, 4 = Very complete; 5 = Completely covers the given domain. There is a space for your comments about the completeness of the scale and to recommend any additional items to enhance completeness.							

Perceived Susceptibility								
Definition: How susceptible the individual feels to mental health problems (on a low to high continuum).								
		Item Quality				**Item Bias**		
Item No.	Item	Overall Quality	Representative	Face Validity	Reason Problematic (e.g., goes to different scale, duplicate content to another item, etc.)	Additional information (e.g., suggestion for rewording)	Potential Bias/Offensiveness?	Why is the item biased? Which is the group of concern?	What can be done to elimiate bias?
Instructions: Think about a mental health problem that you, or someone you know, are experiencing or may have experienced in the past. While thinking about this situation, read each statement carefully and indicate how much you agree with each statement.								
1	A person's family history makes it more likely they will get a mental health problem.								
12	Within the next year, I will get a mental health problem.								

Overall Completeness of the Perceived Susceptibility Scale	Rating	Comments/Additional Items Needed

Appendix C: Mental Health Belief Model Assessment – Version 2

Perceived Susceptibility
Instructions: Below are statements about mental health problems. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life. Please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

1. I am concerned about my risk of experiencing a mental health problem.
2. I am more likely to experience a mental health problem than other people.
3. I feel I will experience a mental health problem some time during my life.
4. I worry a lot about experiencing a mental health problem.
5. It is likely I will experience a mental health problem in the future.
6. My family history makes it more likely I will experience a mental health problem.
7. There is a good possibility that I will experience a mental health problem.

Fears
Instructions: Below are statements about mental health problems. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life. Please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

1. The thought of mental health problems scares me.
2. When I think about mental health problems, I feel nervous.
3. When I think about mental health problems, I get upset.
4. When I think about mental health problems, I am unable to relax.
5. When I think about mental health problems, my heart beats faster.
6. When I think about mental health problems, I feel uneasy.
7. When I think about mental health problems, it makes me feel anxious.
8. When I think about mental health problems, I have trouble focusing on anything else.
9. I worry a lot about mental health problems.
10. I avoid thinking about mental health problems.
11. When I think about mental health problems, I feel nauseated.
12. I am afraid to even think about mental health problems.

Perceived Severity
Instructions: Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life. While thinking about that situation, please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

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1. Having a mental health problem would result in serious consequences.
2. Having a mental health problem would negatively affect my day to day life.
3. Having a mental health problem would negatively affect my family.
4. Having a mental health problem would negatively affect my social life.
5. Having a mental health problem would negatively affect my work.
6. Having a mental health problem would change my whole life.
7. Having a mental health problem would make completing daily activities more difficult.
8. The consequences of experiencing a mental health problem would last a long time.
9. Having a mental health problem would hurt my relationship with a significant other.
10. Having a mental health problem would endanger my work or education.
11. Having a mental health problem would change my feelings about myself.
12. Mental health problems do not tend to go away on their own.

Perceived Benefits
Instructions: Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life.
Below are statements about going to therapy for a mental health problem. By *therapy*, we mean talking about a mental health problem with a mental health professional, such as a psychiatrist, psychologist, social worker, or counselor. Similarly, a *therapist* is a general term for any mental health professional.
Please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

Page 1

1. Therapy would provide me with an environment where I could open up emotionally.
2. Going to therapy can provide me with an outlet to talk about issues that are bothering me.
3. Going to therapy can keep a mental health problem from getting worse.
4. Going to therapy for problems that are bothering me now can prevent future problems for me.
5. Going to therapy can improve my relationship with my significant other.
6. Going to therapy can reduce the symptoms of a mental health problem.
7. I have a lot to gain by going to therapy when I need it.
8. Going to therapy helps increase my chances of feeling better.
9. Going to therapy can help me feel better emotionally.
10. Going to therapy can help me interact better with my family.
11. Going to therapy can help me interact better with my friends.
12. Going to therapy can help me interact better with my significant other.
13. Going to therapy can help me interact better with people at work or school.
14. Going to therapy can improve my perspective on a mental health problem.
15. Going to therapy can help me change things in my life for the better.
16. I can recover from mental health problems with therapy.
17. Going to therapy can help me cope with a mental health problem.
18. Going to therapy can help me find relief from symptoms.
19. Going to therapy is worth the effort.

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20. Going to therapy can help me address negative thoughts and feelings.
21. Going to therapy can give me hope that I will feel better.
22. Therapy can help me understand my mental health problem.

Perceived Barriers

Instructions: Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life.

Below are statements about going to therapy for a mental health problem. By *therapy*, we mean talking about a mental health problem with a mental health professional, such as a psychiatrist, psychologist, social worker, or counselor. Similarly, a *therapist* is a general term for any mental health professional.

Please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

Page 1

1. A therapist wouldn't understand my mental health problem.
2. Being in therapy is a lot of work.
3. I am afraid I would not be able to talk to a therapist about a mental health problem.
4. I wouldn't want to talk to a therapist because I value my privacy.
5. I worry about having a bad experience with a therapist.
6. I worry about how stressful it would be to go to therapy.
7. I would be concerned about what others might think if they found out I was going to therapy.
8. I would prefer to get help from a family member or friend rather than a therapist.
9. I would rather not talk about my feelings with a therapist.
10. I wouldn't want anyone to know if I was going to therapy.
11. Going to therapy is inconvenient.
12. Going to therapy is time consuming.
13. Going to therapy would interfere with other activities in my life.
14. I don't have easy access to therapists in my area.
15. I don't have ready access to transportation to go to therapy.
16. I would have to travel too far to go to therapy.
17. If I had a mental health problem, I wouldn't know how to get help.
18. It would be hard to get an appointment for therapy.
19. I don't have health insurance, or it does not cover therapy.
20. I am afraid to go to therapy.
21. Mental health problems are too personal to tell a therapist about.
22. I am afraid a therapist would pass on information about me to other people.
23. I worry about being treated badly by a therapist.
24. If I went to therapy, other people would think I am weak.
25. Going to therapy means I'm not strong enough to deal with a mental health problem myself.
26. I wouldn't feel comfortable talking with a therapist because I don't know him or her.
27. I don't want help for a mental health problem from a therapist.
28. I prefer to handle a mental health problem on my own.
29. I'm embarrassed to talk about a mental health problem with a therapist.

30. My family would think less of me if I went to therapy for a mental health problem.
31. My friends would think less of me if I went to therapy for a mental health problem.
32. People who go to therapy are crazy.
33. Going to therapy is expensive.
34. I can't afford to go to therapy.
35. Even if I went to therapy, it would not help with a mental health problem.
36. Therapy isn't effective in treating mental health problems.
37. I don't think getting therapy would help me with a mental health problem.
38. I have never felt like therapy would be helpful for me.
39. A mental health problem wouldn't bother me enough to get therapy.
40. My schedule would make it hard to go to therapy.
41. Going to therapy could negatively affect my work.
42. I wouldn't want to burden a therapist by talking about a mental health problem.

Self-Efficacy
Instructions: Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life.
Below are statements about going to therapy for a mental health problem. By *therapy*, we mean talking about a mental health problem with a mental health professional, such as a psychiatrist, psychologist, social worker, or counselor. Similarly, a *therapist* is a general term for any mental health professional.
Please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

1. I am capable of making the necessary behavioral changes to improve from therapy.
2. I am willing to put in the work to get the most out of therapy.
3. I am capable of using therapy to help with a mental health problem.
4. I am able to regularly attend therapy appointments.
5. I am capable of participating in therapy by completing assignments given to me by a therapist.
6. I am confident that I could make it to regular therapy appointments.
7. I am capable of making the necessary cognitive changes to improve from therapy.
8. With therapy, I am capable of making the changes necessary to improve how I feel.
9. I would find it easy to go to therapy.
10. I am willing to open up to a therapist about a mental health problem.
11. It would be easy for me to schedule a therapy appointment.

Appendix D: University of South Florida Institutional Review Board Approval Letter

USF

UNIVERSITY OF
SOUTH FLORIDA

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-7091

April 21, 2017

Jennifer Greene
Educational and Psychological Studies
Tampa, FL 33612

RE: **Expedited Approval for Initial Review**
IRB#: Pro00029821
Title: Assessing Readiness to Seek Mental Health Services: Development and Validation of the
        Mental Health Belief Model Assessment (MHBMA)

Study Approval Period: 4/20/2017 to 4/20/2018

Dear Ms. Greene:

On 4/20/2017, the Institutional Review Board (IRB) reviewed and **APPROVED** the above
application and all documents contained within, including those outlined below.

Approved Item(s):
Protocol Document(s):
Dissertation Study Protocol 04-17-2017 Version 1

Consent/Assent Document(s)*:
Dissertation Informed Consent 4-18-17

*Please use only the official IRB stamped informed consent/assent document(s) found under the
"Attachments" tab. Please note, these consent/assent documents are valid until the consent
document is amended and approved. The Online Consent form is not a stamped form.

It was the determination of the IRB that your study qualified for expedited review which
includes activities that (1) present no more than minimal risk to human subjects, and (2) involve
only procedures listed in one or more of the categories outlined below. The IRB may review
research through the expedited review procedure authorized by 45CFR46.110. The research
proposed in this study is categorized under the following expedited review category:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your study qualifies for a waiver of the requirements for the documentation of informed consent as outlined in the federal regulations at 45CFR46.117(c) which states that an IRB may waive the requirement for the investigator to obtain a signed consent form for some or all subjects if it finds either: (1) That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern; or (2) That the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context. (Online consent).

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval via an amendment. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) calendar days.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon, Ph.D., Vice Chairperson
USF Institutional Review Board

Question	Response Options
Demographic questions	
Age	
Gender	Male Female Other
Are you currently a student?	Yes No
If Yes: What year are you in?	Freshman in college Sophomore in college Junior in college Senior in college 1st year of graduate school 2nd year of graduate school 3rd year of graduate school 4th year of graduate school 5th year of graduate school 6th year of graduate school 7th year or higher of graduate school
If No: What is the highest level of education you have completed?	No degree GED High school diploma Technical or vocational program College degree (e.g., 4-year B.A. or B.S.) Graduate degree (e.g., M.A., M.S., M.D., Ph.D.)
Are you of Hispanic, Latino, or Spanish origin?	Yes No
Race	Caucasian African American American Indian/Alaskan Native Asian Native Hawaiian/Pacific Islander Two or more races Other
General attitudes towards mental health treatment seeking (derived from Mojtabai, 2001)	
If you had a mental health problem, how likely would you be to go to therapy?	Definitely go Probably go

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| | Probably not go |
	Definitely not go
How comfortable or uncomfortable would you feel talking about a mental health problem with a therapist?	Very comfortable Somewhat comfortable Not very comfortable Not at all comfortable
How embarrassed would you be if your friends knew you were going to therapy for a mental health problem?	Very embarrassed Moderately embarrassed Slightly embarrassed Not at all embarrassed
How embarrassed would you be if your family knew you were going to therapy for a mental health problem?	Very embarrassed Moderately embarrassed Slightly embarrassed Not at all embarrassed
Mental health history and service use (derived from Mojtabai, 2007)	
Have you ever experienced a mental health problem?	Yes No
Have you ever seen a professional for a mental health problem?	Yes No
If Yes: Please select the type(s) of professionals you have seen for mental health problems (check all that apply)	Psychiatrist Psychologist Social worker Counselor General practitioner/family physician Other physician Nurse Other If Other: Please specify
Have you taken medication for a mental health problem in the past?	Yes No
Are you currently seeing a professional for a mental health problem?	Yes No
If Yes: Please select the type(s) of professionals you are seeing for mental health problems (check all that apply)	Psychiatrist Psychologist Social worker Counselor General practitioner/family physician Other physician Nurse Other If Other: Please specify
Are you currently taking medication for a mental health problem?	Yes No

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Do you know someone who has experienced a mental health problem?	Yes No
Do you know someone who has seen a professional for a mental health problem?	Yes No
If Yes: Please select the type(s) of professionals that person(s) has seen for mental health problems (check all that apply)	Don't know Psychiatrist Psychologist Social worker Counselor General practitioner/family physician Other physician Nurse Other If Other: Please specify
Do you know someone who is currently seeing a professional for a mental health problem?	Yes No
If Yes: Please select the type(s) of professionals that person(s) is seeing for mental health problems (check all that apply)	Psychiatrist Psychologist Social worker Counselor General practitioner/family physician Other physician Nurse Other If Other: Please specify
Do you know someone who is taking medication for a mental health problem?	Yes No
Do you know someone who taken medication for a mental health problem in the past?	Yes No

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Appendix F: Mental Health Belief Model Assessment – Version 3

Perceived Susceptibility and Fears
Instructions: Below are statements about mental health problems. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life. Please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

1. I am concerned about my risk of experiencing a mental health problem.
2. I am more likely to experience a mental health problem than other people.
3. I feel I will experience a mental health problem some time during my life.
4. It is likely I will experience a mental health problem in the future.
5. My family history makes it more likely I will experience a mental health problem.
6. There is a good possibility that I will experience a mental health problem.
7. When I think about mental health problems, I get upset.
8. When I think about mental health problems, I am unable to relax.
9. When I think about mental health problems, my heart beats faster.
10. When I think about mental health problems, it makes me feel anxious.
11. I worry a lot about mental health problems.
12. When I think about mental health problems, I feel nauseated.

Perceived Severity
Instructions: Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life. While thinking about that situation, please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

1. Having a mental health problem would change my feelings about myself.
2. Having a mental health problem would result in serious consequences.
3. Having a mental health problem would negatively affect my day to day life.
4. Having a mental health problem would negatively affect my family.
5. Having a mental health problem would negatively affect my social life.
6. Having a mental health problem would negatively affect my work.
7. Having a mental health problem would change my whole life.
8. Having a mental health problem would make completing daily activities more difficult.
9. The consequences of experiencing a mental health problem would last a long time.
10. Having a mental health problem would hurt my relationship with a significant other.
11. Having a mental health problem would endanger my work or education.

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Perceived Benefits
Instructions: Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life.
Below are statements about going to therapy for a mental health problem. By *therapy*, we mean talking about a mental health problem with a mental health professional, such as a psychiatrist, psychologist, social worker, or counselor. Similarly, a *therapist* is a general term for any mental health professional.
Please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

1. Going to therapy can improve my relationship with my significant other.
2. Therapy would provide me with an environment where I could open up emotionally.
3. Going to therapy can provide me with an outlet to talk about issues that are bothering me.
4. Going to therapy can keep a mental health problem from getting worse.
5. Going to therapy for problems that are bothering me now can prevent future problems for me.
6. Going to therapy can reduce the symptoms of a mental health problem.
7. I have a lot to gain by going to therapy when I need it.
8. Going to therapy helps increase my chances of feeling better.
9. Going to therapy can help me feel better emotionally.
10. Going to therapy can help me interact better with my family.
11. Going to therapy can help me interact better with my friends.
12. Going to therapy can help me interact better with my significant other.
13. Going to therapy can help me interact better with people at work or school.
14. Going to therapy can improve my perspective on a mental health problem.
15. Going to therapy can help me change things in my life for the better.
16. I can recover from mental health problems with therapy.
17. Going to therapy can help me cope with a mental health problem.
18. Going to therapy can help me find relief from symptoms.
19. Going to therapy is worth the effort.
20. Going to therapy can help me address negative thoughts and feelings.
21. Going to therapy can give me hope that I will feel better.
22. Therapy can help me understand my mental health problem.

Perceived Barriers
Instructions: Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life.
Below are statements about going to therapy for a mental health problem. By *therapy*, we mean talking about a mental health problem with a mental health professional, such as a psychiatrist, psychologist, social worker, or counselor. Similarly, a *therapist* is a general term for any mental health professional.
Please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

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1. I wouldn't want anyone to know if I was going to therapy.
2. A therapist wouldn't understand my mental health problem.
3. I am afraid I would not be able to talk to a therapist about a mental health problem.
4. I wouldn't want to talk to a therapist because I value my privacy.
5. I worry about how stressful it would be to go to therapy.
6. I would prefer to get help from a family member or friend rather than a therapist.
7. I would rather not talk about my feelings with a therapist.
8. I don't want help for a mental health problem from a therapist.
9. I prefer to handle a mental health problem on my own.
10. I wouldn't feel comfortable talking with a therapist because I don't know him or her.
11. Going to therapy means I'm not strong enough to deal with a mental health problem myself.
12. I am afraid to go to therapy.
13. Mental health problems are too personal to tell a therapist about.
14. I am afraid a therapist would pass on information about me to other people.
15. I worry about being treated badly by a therapist.
16. Going to therapy could negatively affect my work.
17. I wouldn't want to burden a therapist by talking about a mental health problem.
18. A mental health problem wouldn't bother me enough to get therapy.
19. I'm embarrassed to talk about a mental health problem with a therapist.
20. My family would think less of me if I went to therapy for a mental health problem.
21. My friends would think less of me if I went to therapy for a mental health problem.
22. I don't think getting therapy would help me with a mental health problem.

Self-Efficacy
Instructions: Imagine you are currently having a mental health problem. By *mental health problem*, we mean any behavioral or emotional issue that may affect your life.
Below are statements about going to therapy for a mental health problem. By *therapy*, we mean talking about a mental health problem with a mental health professional, such as a psychiatrist, psychologist, social worker, or counselor. Similarly, a *therapist* is a general term for any mental health professional.
Please read each statement carefully and rate how much you agree or disagree with it.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

1. I am willing to open up to a therapist about a mental health problem.
2. I am capable of making the necessary behavioral changes to improve from therapy.
3. I am willing to put in the work to get the most out of therapy.
4. I am capable of using therapy to help with a mental health problem.
5. I am capable of participating in therapy by completing assignments given to me by a therapist.
6. I am confident that I could make it to regular therapy appointments.
7. I am capable of making the necessary cognitive changes to improve from therapy.
8. With therapy, I am capable of making the changes necessary to improve how I feel.
9. I would find it easy to go to therapy.

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