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The Role of Mental Health Literacy

in Mental Health Care

in Public Housing Settings

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The Role of Mental Health Literacy in Mental Health Care in Public Housing Settings

by

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Dissertation

Presented to the Faculty of the Graduate School

of the University of Texas at Austin

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Dedication

I dedicate this dissertation to my lifelong supporters—my loving family. Without their encouragement and commitment, I would have not had the opportunities that helped me grow as a person and scholar in the U.S. I particularly appreciate my grandmother, Jaesoo Cho, for her unfailing love and prayer. I am very grateful to have such great parents, Jongtak Jung and Jeongsook Kang, who have inspired me to pursue a career in social work and encouraged me to persist through and complete an arduous doctoral education. Finally, I thank my sister and best friend, Jihye Jung. Her unconditional trust in me helped me to maintain faith in my work and finish my dissertation.

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The Role of Mental Health Literacy

in Mental Health Care

in Public Housing Settings

by

Hyejin Jung, PhD

The University of Texas at Austin, 2015

Supervisors: Elizabeth Pomeroy, King Davis

Mental health literacy is a critical factor associated with mental health care. It may facilitate people to seek professional mental health care or help others with mental illness in accessing mental health care. Many people are unlikely to seek professional mental health care at an early stage of mental illness. In public housing settings that are staffed by non-mental health professionals, mental health literacy is important to promote mental health care. Yet, few studies in the U.S. examine the role of mental health literacy in seeking mental health care or helping others with mental illness to receive care, particularly in public housing settings that serve people at greater risk for mental illness. Moreover, there is a need for a comprehensive mental health literacy measure to build rigorous mental health literacy research. This three article dissertation aims to advance current knowledge in mental health literacy research in the U.S. by focusing on three

areas. The first article described the process of developing a mental health literacy measure that represents multiple components of mental health literacy and assessing its' psychometric properties. The second and third articles examined the way in which mental health literacy influences attitudes toward mental health help-seeking and confidence of helping others with mental illness among public housing employees. Findings suggest that a newly developed multidimensional measure of mental health literacy is reliable and valid. People with a high level of mental health literacy are likely to have favorable attitudes toward mental health help-seeking. They are also likely to feel familiar with mental illness, which in turn increases confidence in helping others with mental illness. This dissertation introduces a reliable and valid tool for future mental health literacy research and highlights the need for mental health education in community settings.

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Chapter 1: Introduction

Statement of the Problem

Many adults in the U.S. suffer from a mental illness throughout their lifetimes (Breslau, Kendler, Su, Gaxiola-Aguilar, & Kessler, 2005; Kessler et al., 2005). Despite the high prevalence of mental illness, there are gaps between those who are in need of mental health services and those who indeed use them (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014; Wang et al., 2005b). In 2013, less than 15% of U.S. adults sought mental health services (SAMHSA, 2014). People do not readily seek mental health services and tend to wait until symptoms of mental illness are severe to the point where they have serious impairments or are intervened by emergency or crisis intervention services (Chow, Jaffee, & Snowden, 2003; Snowden & Holschuh, 1992; Snowden, Hastings, & Alvidrez, 2009; Sue, Cheng, Saad, & Chu, 2012). Some individuals and groups may wait from nine to 23 years to seek mental health services for anxiety disorders and six to eight years for mood disorders after initial onset (Wang et al., 2005a). Underutilization of mental health services and delayed help seeking are likely to be greater for people with lower education and/or income, communities of color, and older adults (Alegria et al., 2012; Cabassa & Zayas, 2007; Dobalian & Rivers, 2008; Mojtabai et al., 2011; Wang et al., 2005b).

Without timely mental health care, a person with mental illness or mental health problems is more likely to face challenges in living a productive life because of, but not limited to, disability, unemployment, homelessness, incarceration, or early mortality

(Folsom et al., 2005; James & Glaze, 2006; Parks, Svendsen, Singer, Foti, & Mauer, 2006). These problems cause a heavy burden to individuals, families, and the U.S. society (Kessler et al., 2008; McGuire et al., 2002). The burden of untreated mental illness might have greater impact on particular populations who have limited resources or already experience other life stressors, such as public housing residents.

Mental health practitioners and scholars make efforts to understand underutilization of mental health services or delayed help-seeking. They conclude that mental health care involves interaction among multiple factors (e.g., language, stigma, mental health literacy, social support) (U.S. Department of Health and Human Services, 2001). In addition, mental health care involves not only mental health professionals but also informal resources or other non-mental health professionals who potentially interact with mental health consumers in daily life such as family members, friends, or community members (Cabassa & Zayas, 2007; Chu & Sue, 2011; Kim, Sherman, Ko, & Taylor, 2006; Woodward et al., 2008). Most importantly, there is a great need for research to identify ways to facilitate mental health care.

Purpose and Significance of the Dissertation

This dissertation endeavors to add useful information to current mental health literature while bringing attention to mental health literacy and mental health care in public housing settings. Mental health literacy is one of multiple factors associated with mental health care. Mental health literacy–knowledge and beliefs about mental health–might be a major factor in that it is associated with help-seeking, stigma, perceived need,

and helping others with mental illness (Jorm & Kitchener, 2011; Kitchener & Jorm, 2002, 2004, 2006; Morawska, Fletcher, Pope, Heathwood, Anderson, & McAuliffe, 2013). Despite the importance of mental health literacy, there are several gaps in the current mental health literacy research. First, there is a need for a mental health literacy measure that can be useful to assess multiple components of mental health knowledge and beliefs together. Second, fewer empirical research studies examine mental health literacy and its roles in mental health care within the U.S. Further, even fewer studies include community members or potential first responders (e.g., public housing staff) who are likely to be in frequent contact with someone with mental health problems.

In order to bridge lacunae in current knowledge, this dissertation focuses on mental health literacy and mental health care in public housing settings. Public housing employees are not mental health professionals. However, public housing serves people who are vulnerable for mental illness and may potentially face heavy cost from untreated mental illness, such as homelessness (Crane & Warnes, 2000; Simning, van Wijngaarden, & Conwell, 2011). Public housing employees' capacity to recognize public housing residents with mental illness and refer those residents to adequate mental health services in a timely manner is critical for both people with mental health problems and their neighbors. Moreover, public housing employees might experience mental health problems of their own. Mental health literacy of public housing employees can influence their own mental health care.

In conclusion, this dissertation is to contribute to mental health literacy research in the United States. This dissertation adds a new tool to measure multiple aspects of mental health literacy that can be used with non-mental health professionals or community members. Additionally, this dissertation produces information about the way in which mental health literacy potentially influences seeking mental health care and assisting others with mental illness in public housing settings.

Potential outcomes can contribute to establishing the need for mental health education in community settings as one way to promote mental health care. Given that social workers frequently work with current and potential mental health consumers and collaborate with non-mental health professionals, this dissertation promotes active involvement of the social work profession in providing mental health education and advocating policy change for more emphasis on early intervention and mental health education in community settings.

Theories and Theoretical Frameworks

This proposed dissertation study is guided by Social Determinants of Health (SDH), Theory of Reasoned Action (TRA), and Gateway Provider Model (GPM). SDH is a guiding framework for understanding the complexity of mental health care and the need to address mental health issues from the community where people live. TRA is applied to explain the role of mental health literacy in mental health help-seeking. GPM guides this dissertation to examine the influence of public housing employees' knowledge and beliefs about mental health on their confidence in helping others with mental illness.

Social Determinants of Health (SDH).

The Social Determinants of Health framework (SDH) is increasingly used to explain health and health disparities. The primary hypothesis from SDH is that the causes of health and health disparities are attributed to social and environmental conditions, including where a person is “born, grow, live, work, and age” (Marmot, Friel, Bell, Houweling, & Taylor, 2008, p. 1661). SDH identifies three primary concepts to explain health and health inequities: 1) socioeconomic and political context; 2) structural determinants; and 3) intermediary determinants (see Figure 1.1; WHO Commission on Social Determinants of Health, 2008). Socioeconomic and political contexts include governance, policies (i.e., macroeconomic policy, social policies, and health policy), and cultural and societal values (WHO Commission on Social Determinants of Health, 2008). These contexts decide the distribution of structural and social resources (e.g., funding to health care, income, education, power, prestige) (Ashcroft, 2010; Marmot et al., 2008; Raphael, 2006). Structural determinants refer to structural social stratification mechanisms that interact with socioeconomic and political contexts and shape people’s socioeconomic position. Socioeconomic position is an indication of power, prestige, and access to resources represented by education, occupation, income, gender, and ethnicity/race (Solar & Irwin, 2010). These structural determinants along with socioeconomic and political contexts are identified as the root of health inequity and together they are called social determinants of health inequities (Ashcroft, 2010; Link & Phelan, 1995). Lupton (2006) illustrates this relationship as follows:

> Marginalized groups, such as women, people from non-English-speaking backgrounds, non-whites, the aged, the unemployed and members of the working class, tend to endure greater social and economic disadvantage than those from privileged groups, have restricted access to health care services, and suffer poor health as a results (p. 9)

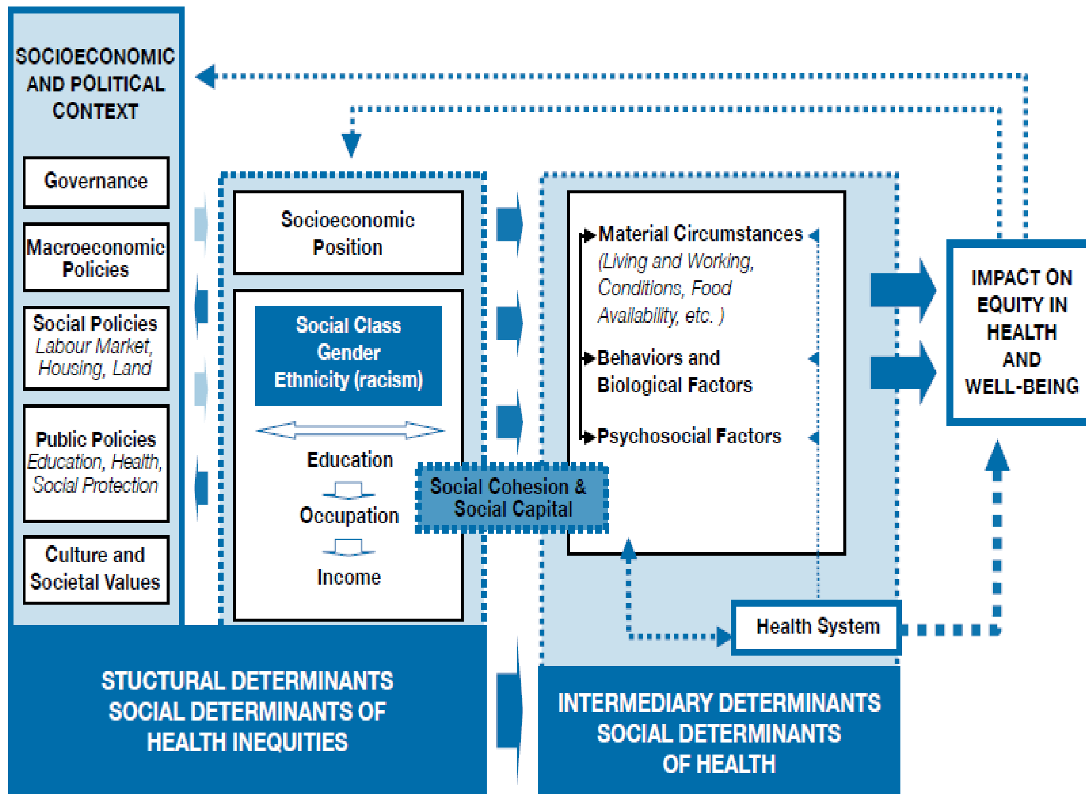
Additionally, SDH posits that social determinants of health inequities influence health through intermediary determinants of health or social determinants of health. Intermediary determinants of health refers to individual-level influences that directly relate to health including material circumstances or physical environments where people live and work, psychosocial factors (e.g., distress associated with work, stressful living conditions, social support, coping style), health related behaviors, and biological factors (Solar & Irwin, 2010). SDH hypothesizes that a person's socioeconomic position influences intermediary determinants of health and these determinants decide a person's health.

SDH demonstrates that health and health disparities are associated with various factors within a complex of social, environmental, political and economic contexts. It also explains the greater barriers people with lower socioeconomic status may face to maintain health and the need for multiple approaches to improve their health. SDH promotes collective action by multiple constituencies (e.g., local communities, business, education, housing) beyond the health sector to address various factors associated with health (Braveman, Egerter, & Mockenhaupt, 2011; Marmot et al., 2008; Solar & Irwin,

2010; Syme, 2004). Additionally, SDH pays attention to community-based interventions that involve real participation of those who are affected by health (Ashcroft, 2010; Baker, Metzler, & Galea, 2005; Irwin & Scali, 2007; WHO Commission on Social Determinants of Health, 2008).

While SDH is often applied to physical health, it is as beneficial in understanding non-communicable diseases like mental illness (Carson, Cook, & Alegria, 2010; Marmot, 2005; Zimmerman, 2005). Mental health promotion literature frequently uses SDH as theoretical guidelines to articulate the importance of community-based interventions for improving mental health (World Health Organization, 2004). This dissertation finds the SDH framework helpful to understand the complexity of mental health care, particularly for those who have lower socioeconomic position like public housing residents. It also substantiates the need to bring non-mental health service sectors into mental health care as one promising way to facilitate mental health and well-being.

Figure 1.1. The Conceptual Framework by the Commission on Social Determinants of Health



Source: Solar & Irwin, 2010, p. 48

Theory of Reasoned Action Approach (TRA).

The Theory of Reasoned Action Approach has been used to explain a person's behavior based on the assumption that intention predicts behavior (Ajzen, 2012; Cabassa, Lester, & Zayas, 2007; Cooper et al., 2003; Givens, Katz, Bellamy, & Holmes, 2007; Van Voorhees et al., 2006; Yang & Wonpat-Borja, 2012). The latest TRA model defines *attitudes toward the behavior, perceived norms, and perceived behavior control* as three

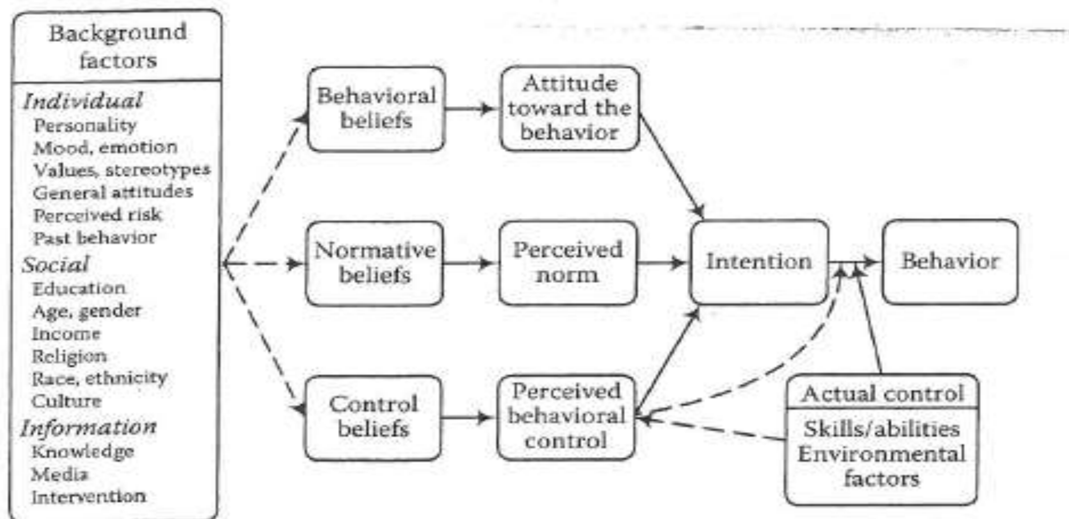
major intention determinants; these intention determinants are constituted by behavioral beliefs, normative beliefs, and control beliefs, respectively. The basic hypothesis in TRA indicates that beliefs are fundamental components to predict behavior. TRA hypothesizes the proposed causal relationships of these primary constructs as follows: a person's beliefs determine attitude, perceived norms, and perceived behavior control; these three constructs impact a person's intention; and consequently the intention directs his or her behaviors (Fishbein, 2008; Fishbein & Ajzen, 2010).

Additionally, the latest TRA model takes background influences (e.g., past behavior, demographics, culture, education, income, knowledge/information) into account to explain a person's behavior (Fishbein, 2008; Fishbein & Ajzen, 2010). Fishbein and Ajzen (2010) indicate that these background factors do not directly influence intention or behavior, rather they may influence beliefs that lead to influence on attitude, perceived norms, and perceived behavioral control. Moreover, the latest model identifies actual controls (i.e., skills, abilities, environmental factors) as a variable to predict behavior; however, because of difficulties in measuring actual control, the model suggests the use of perceived behavioral control as a proxy when actual control cannot be measured (Fishbein & Ajzen, 2010).

The theory of reasoned action has been found to be useful in the health field to predict intention or behaviors such as engaging in health screenings, smoking, or sexual risk behaviors and to develop interventions to change behaviors (Ajzen, 2012). In mental health care, theory of reasoned action is used to predict help-seeking intention or

behavior (Cabassa et al., 2007; Cooper et al., 2003; Givens et al., 2007a; Compton & Esterberg, 2005; Schomerus, Matschinger, & Angermeyer, 2009; Van Voorhees et al., 2006). The studies demonstrate the impact of beliefs, attitudes, social support, and stigma on mental health service use when they are tested individually. This dissertation finds TRA useful to build a model to explain the way in which mental health literacy potentially influences mental health help-seeking.

Figure 1.2. Schematic Presentation of the Reasoned Action Model



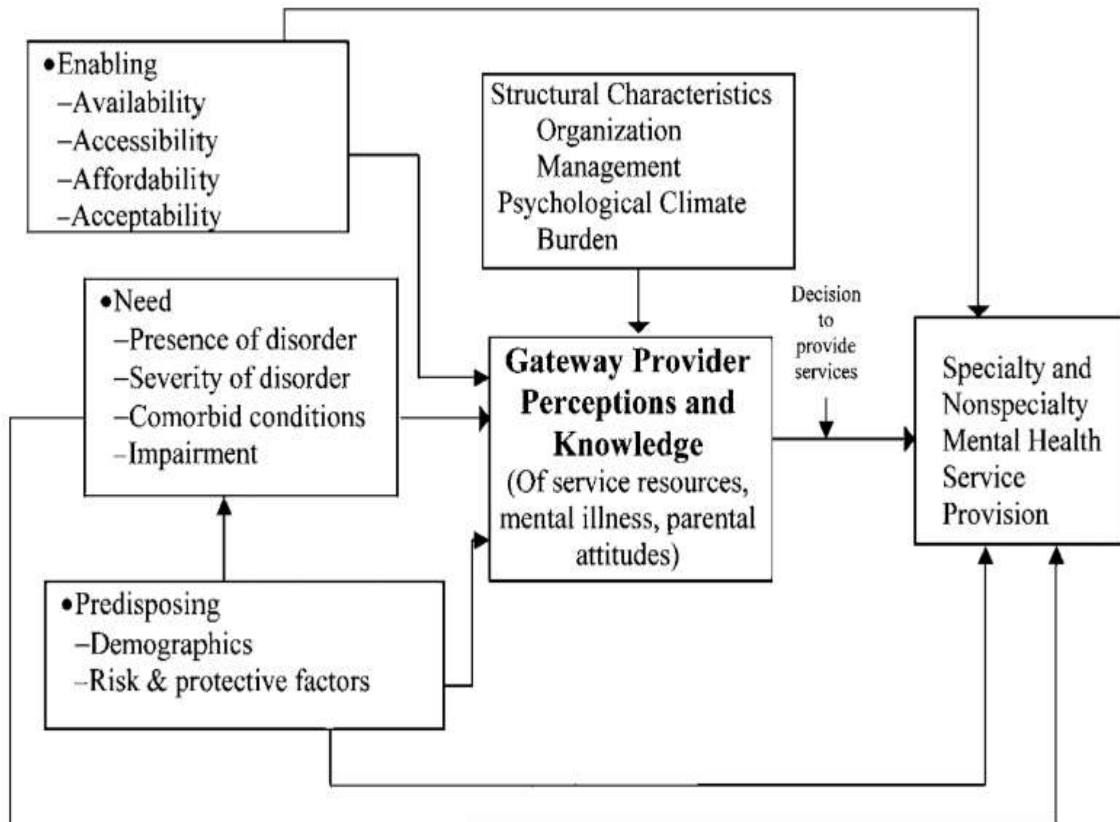
Source: Fishbein & Ajzen, 2010, p. 22

Gateway Provider Model (GPM).

Gateway provider model originated to explain mental health service use of children and youths and incorporates key assumptions from the Network-Episode Model and Decision Theory (Stiffman, Pescosolido, & Cabassa, 2004). *Gateway providers* refer to “the individual who first identifies a problem and sends a youth to treatment”

(Stiffman et al., 2004, p. 189). Gateway providers include informal resources such as parents or friends and formal resources that could be mental health professionals or other service providers (e.g., teachers, social service employees) (Mechanic, Angel, & Davies, 1991; Stiffman et al., 2004). Given that many people are not likely to seek mental health professionals after initial onset of mental illness, gateway providers may be more likely to be informal resources or non-mental health professionals, rather than mental health professionals (Stiffman et al., 2004). GPM explains mental health service use by focusing on two main aspects: 1) mental health service use often involves gateway providers who may have greater impact on help-seeking of people with mental illness (Ellis et al., 2010; Stiffman, Pescosolido, & Cabassa, 2004); and 2) gateway providers' knowledge and perceptions of mental health needs and resources influence their decision to refer individuals with mental health problems to appropriate mental health resources (Stiffman et al., 2004). Empirical studies applying GPM found that gateway providers' perceived need and knowledge of mental health resources and treatment are related to connecting youths to mental health services (Carise & Gûrel, 2003; Stiffman et al., 2000). Yet, limited literature incorporates GPM to explain mental health service utilization in other settings or with other populations. This dissertation proposes that public housing employees are gateway providers who serve clients with high risk for mental illness and apply GPM to explain how their mental health literacy is likely to influence confidence in helping others with mental illness. Their confidence could be an indicator for referring public housing residents with mental health problems to mental health care.

Figure 1.3. Gateway Provider Service Framework



Source: Stiffman, Pescosolido, & Cabassa, 2004, p. 13

Overview of the Literature

Mental health service use & help-seeking.

Despite the high prevalence of mental illness, people in the U.S. are less likely to seek mental health services (SAMHSA, 2014; Wang et al., 2005b). Wang et al., (2005b) reported that less than half of those with any disorders (i.e., anxiety disorders, mood disorders, impulse control disorder, and substance use disorders) used mental health services (i.e., psychiatrist, non-psychiatrist, general medical, human services, CAM) in

the last 12 months: 42.2% of those with anxiety disorders and 56.4% with mood disorders used mental health services. Unfortunately, current literature hardly differentiates voluntary from involuntary mental health service use (e.g., inpatient psychiatric services, emergency service use, or criminal justice system) and little is known about mental health help-seeking pathways.

Current literature suggests various approaches that people might take to deal with mental health problems or mental illness before they seek mental health services. Some people might ignore the need for mental health services and try to avoid acknowledging mental health problems (Kim, Sherman, & Taylor, 2006; Lam & Zane, 2004). Others might deal with mental health problems or mental illness on their own, such as self-medicating with substances or using religious coping skills (Chatters, Taylor, Jackson, & Lincoln, 2008; Kane & Green, 2009; Matthews, Corrigan, Smith, & Aranda, 2006). Moreover, current scholars hypothesize that people are more likely to seek informal resources or non-mental health professionals such as family, neighbors, religious leaders, friends, primary physicians, and people in the community first before they get help from mental health professionals (Cabassa & Zayas, 2007; Kane & Green, 2009; Kim, Sherman, Ko, & Taylor, 2006; Lee et al., 2009; Neighbors et al., 2007; Woodward et al., 2008). As hypothesized in SDH and GPM, the role of informal resources or non-mental health professionals in mental health care seems critical to facilitate mental health care; however, fewer studies involve non-mental health professionals in examining mental health care.

Public housing & mental health.

Public housing aims to provide safe and supportive housing to people with lower incomes, disabilities, and the elderly—all of whom are vulnerable for mental health problems or mental illness (U.S. Department of Housing and Urban Development, 2015). Moreover, emphasis on mental health treatment and recovery in community settings has increased the number of people with mental illness seeking to find affordable housing options in community settings (Koyanagi, 2007). Consequently, it seems inevitable that public housing serves many people with mental health problems or mental illness. Current literature indicates that, compared to non-public housing residents, public housing residents have poorer mental health status (Digenis-Bury, Brooks, Chen, Ostrem, & Horsburgh, 2008; Simning et al., 2011). Yet, many of those with mental health problems or mental illness do not receive mental health services (Simning et al., 2011). Untreated mental health problems or mental illness in public housing might result in eviction, homelessness, or more dangerous situations like suicide or homicide (Crane & Warnes, 2000). Therefore, there is increasing need to identify and understand mental health problems in public housing and public housing authorities' ability in helping public housing residents to receive mental health care in a timely manner. However, the literature about mental health in public housing is limited. Little is known about factors associated with underutilization of mental health services among public housing residents. Additionally, there is limited literature that reports the ways in which public housing staffs are involved in helping public housing residents with mental health

problems or mental illness.

Mental health literacy.

Mental health literacy was coined by Jorm and his colleagues, Australian scholars (Jorm et al., 1997). They define mental health literacy as follows,

> …knowledge and beliefs about mental disorders which aid their recognition, management or prevention. Mental health literacy consists of several components, including: the ability to recognize specific disorders or different types of psychological distress; knowledge and beliefs about risk factors and causes; knowledge and beliefs about self-help interventions; knowledge and beliefs about professional help available; attitudes which facilitate recognition and appropriate help-seeking; and knowledge of how to seek mental health information (Jorm, 2000, p. 396)

Jorm (2000) asserts that each component contributes to mental health care through recognizing the need to receive mental health treatment for either self or others with mental health problems, making decision of what types of help to seek, and correcting stigmatized beliefs or attitude toward mental illness and mental health treatment. Jorm and his colleagues do not limit the application of mental health literacy to only mental health professionals or those with mental illness. Instead, they advocate mental health literacy at societal or community levels and acknowledge the need to raise mental health literacy in public in order to promote mental health care (Jorm, 2000). Additionally, knowing what public knowledge or beliefs is like about mental health can guide how

mental health professionals or care systems should shape their practice to meet the needs of a person with mental illness (Jorm, 2000).

Multiple studies conducted outside of the U.S. indicate the important role of mental health literacy in mental health care including early recognition of mental illness, decreased stigma, positive attitudes toward help-seeking, and actual help-seeking as well as helping others with mental illness (Gabriel & Violato, 2010; Jorm, 2012; Kitchener & Jorm, 2006; Wright, Jorm, Harris, & McGorry, 2007). There are fewer studies in the U.S. that apply mental health literacy and examine its role in mental health care. However, some studies yield similar findings that knowledge and beliefs are associated with mental health service use (Mojtabai et al., 2011). For example, people who believe mental illness is a provisional problem not a chronic illness are likely to have negative view about professional help seeking (Wong, Tran, Kim, Van Horn Kerne, & Calfa, 2010). People believing benefits or effectiveness of mental health treatment (e.g., antidepressants, counseling) are likely to be favorable or acceptable to seek mental health services (Givens, Katz, Bellamy, & Holmes, 2007; Gonzalez, Alegria, Prihoda, Copeland, & Zeber, 2011). Moreover, studies consistently imply that a lack of knowledge about mental illness and treatment resources as well as not knowing how to access available services in the community deters people from using mental health services (Cabassa & Zayas, 2007; Lee et al., 2009; Matthews et al., 2006; Roberts et al., 2008). Yet, many of these studies used a couple of items to measure certain aspects of mental health knowledge and beliefs. A dearth of research examines the relationship between mental

health care and mental health literacy by measuring multiple components of mental health literacy together.

Summary and Outlines for Three Articles

An overview of the current literature suggests that people are least likely to seek mental health professionals when they face mental health problems; instead, they might rely on others that they are familiar with or trust (Cabassa & Zayas, 2007; Kim, Sherman, Ko, & Taylor, 2006; Gabriel & Violato, 2010; Woodward et al., 2008). This help-seeking pattern raises questions about efficient ways of promoting mental health care at the early stage. Mental health literacy is a factor associated with mental health care whether it is a form of help-seeking for self or helping others with mental illness (Jorm, 2012). Low levels of mental health literacy might discourage people from utilizing mental health services or from helping someone with mental illness to seek mental health care (Jorm & Kitchener, 2011; King, Vidourek, & Strader, 2008; Kitchener & Jorm, 2002, 2004; O'Reilly, Bell, Kelly, & Chen, 2011). Yet, limited mental health literacy research is conducted in the U.S. There is a lack of empirical research studies to understand the way in which mental health literacy influences mental health help-seeking as well as helping others. Moreover, it is important to know how much non-mental health professionals in community settings who often interact with people with mental health problems, such as public housing settings, understand mental illness and resources. However, a lack of research is available to assess mental health literacy of these populations. Finally, despite

the fact that mental health literacy consists of multiple components, few measures are available to examine these components together.

This dissertation consists of three articles that explore mental health literacy and its roles in mental health care in public housing settings. Data used in the three articles are collected from a survey in a local public housing authority, Texas. The first article addresses the measurement issue by describing the development of a multicomponent mental health literacy measure and evaluation of its reliability and validity. The second article examines the impact of mental health literacy on attitudes toward mental health help-seeking. The third article explores the way in which mental health literacy influences public housing employees' confidence in helping someone with mental illness. Primary data analyses method include exploratory and confirmatory factor analyses for the first article and structural equation modeling for the second and third articles. Mplus 7 (Muthén & Muthén, 1998-2012) and Stata 12 (Stata Corp, College Station, TX, 2011) are used in data analyses.

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Chapter 2: Expanding a Measure of Mental Health Literacy: Development and Validation of a Multidimensional Measure of Mental Health Literacy

Introduction

Mental health literacy (MHL) is "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (Jorm, 2000, p. 396). Current literature indicates that mental health literacy is an important factor associated with multiple aspects of mental health care, such as help-seeking, helping others with mental illness, and stigma (Corrigan, 2004; Gabriel & Violato, 2010a; Kitchener & Jorm, 2002, 2004; Morawska et al., 2013; Wood & Wahl, 2005; Wright, Jorm, Harris, & McGorry, 2007). For example, individuals with higher level of mental health literacy are more likely to recognize mental illness and identify appropriate treatment resources, whereas lower mental health literacy is associated with early termination of mental health treatment and use of inappropriate coping strategies such as use of alcohol and other drugs (Jorm, 2012; Rusch, Evans-Lacko, Henderson, Flach, & Thornicroft, 2011; Wright et al., 2007). Additionally, the more knowledge people have about mental illness, the less they agree with stigmatizing beliefs or attitudes and the more they have positive attitudes toward seeking professional help (Gabriel & Violato, 2010b; Kitchener & Jorm, 2004; Jorm, 2012; Rusch et al., 2011; Wood & Wahl, 2005).

Mental health literacy is important to people with mental illness, mental health professionals, and even lay community members who may be non-mental health professionals or may not experience current mental illness (Compton, Hankerson-Dyson,

& Broussard, 2011; Kitchener & Jorm, 2002, 2004; Jorm, 2012). Given the high prevalence of mental illness in a lifetime, anyone is exposed to risk for potential mental illness (Kessler et al., 2005). Having a high level of mental health literacy could promote early intervention (Jorm, 2012; Wright et al., 2007). In addition, individuals who do not have a mental illness can help others with mental illness when they have adequate knowledge about symptoms of mental illness and treatment resources (Jorm, 2000, 2012; King, Vidourek, & Strader, 2008; Mendenhall, Jackson, & Hase, 2013; Wright et al., 2007). Current literature indicates that many people with mental illness delay seeking mental health care or remain untreated (SAMHSA, 2014; Wang et al., 2005a, 2005b). Family, friends, and religious leaders may be the first to be contacted by a person with mental illness (Cabassa & Zayas, 2007; Kim, Sherman, Ko, & Taylor, 2006; Gabriel & Violato, 2010a; Woodward et al., 2008). Other people with mental illness may enter mental health services through crisis intervention or the criminal justice system (Chow, Jaffee, & Snowden, 2003; Snowden & Holschuh, 1992; Snowden, Hastings, & Alvidrez, 2009; Sue, Cheung, Saad, & Chu, 2012). Hence, the mental health literacy of people who do not suffer from current mental illness has the potential to promote early intervention for people with mental illness before untreated mental health problems lead to serious circumstances, such as suicide or homicide (Jorm & Kitchener, 2011; Kelly, Jorm, & Wright, 2007).

Mental health literacy research has received increased attention by scholars in many countries. Studies of mental health literacy include multiple approaches: 1)

measuring mental health literacy of diverse populations (e.g., Deen & Bridges, 2011; Morawska et al., 2013; Reavley, McCann, & Jorm, 2012; Wong & Xuesong, 2011); 2) evaluating effectiveness of training programs that target to improve mental health literacy (e.g., Compton et al., 2011; Kitchener & Jorm, 2002, 2004; O'Reilly, Bell, Kelly, & Chen, 2011; Pinto-Foltz, Logsdon, & Myers, 2011; Wahl, Susin, Lax, Kaplan, & Zatina, 2012; Wood & Wahl, 2006); and 3) examining factors (e.g., demographic characteristics) related to mental health literacy (e.g., Burns & Rapee, 2006; Farrer, Leach, Griffiths, Christensen, & Jorm, 2008; Morawska et al., 2013; Reavley, McCann, & Jorm, 2012; Wong, Lam, Poon, & Chow, 2012). Various methods were used in these studies to measure mental health literacy. A case vignette is the most frequently used measure of mental health literacy. This method examines whether a study participant correctly identifies mental health problems in the case, believes that the person needs professional help, and rates the potential helpfulness of various treatment options (e.g., Jorm et al., 1997; Deen & Bridges, 2011; O'Reilly, Bell, Kelly, & Chen, 2011; Wang & Lai, 2008; Wright et al., 2007). The case vignette method, despite its advantages, limits understanding of the breadth of mental health literacy (Gabriel & Violato, 2010a). For instance, while more cases describing diverse mental disorders are developed, current studies have frequently used one or two case scenarios (e.g., schizophrenia, depression) to measure mental health literacy (e.g., Jorm et al., 1997). This restricts understanding of people's mental health literacy about other diagnoses. Additionally, current studies using

a case vignette hardly assess other aspects of mental health literacy together, as specified in the definition by Jorm and colleagues (Jorm, 2000).

There are other approaches to measuring mental health literacy including multiple choice tests, survey questionnaires, and scales (e.g., Cabassa, Lagomasino, Dwight-Johnson, Hansen, & Xie, 2008; Compton et al., 2011; Hirai & Clum, 2000). However, there is no one consistent measure to assess mental health literacy. Some of the measures have not been tested for psychometric properties (e.g., Hess et al., 2004; Hickie et al., 2007; Wood & Wahl, 2006). The lack of a standardized measure limits comparison of levels of mental health literacy across populations, cultures, or geographic regions.

Available mental health literacy measures were often developed for and/or tested with health/mental health professionals, those with mental illness, or student populations (e.g., Cabassa et al., 2008; Gabriel & Violato, 2009; Pinto-Foltz, Logsdon, & Myers, 2011; Wood & Wahl, 2006). Little is reported about mental health literacy measures for lay community people including non-mental health professionals. A study by Compton, Hankerson-Dyson, and Broussard (2011) was the only one that specified the development of a mental health literacy measure for lay community people. Some mental health literacy measures investigate specialized knowledge of mental disorders (e.g., Which of the following is one of the new “atypical” medicines for schizophrenia?; Compton et al., 2007 or What is the risk of death by suicide among depressed patients?; Gabriel & Violato, 2009); others target mental health literacy of a specific disorder (e.g.,

Compton, Quintero, & Esterberg, 2007; Gabriel & Violato, 2009). There is a lack of a general mental health literacy measure useful for studies of lay community people.

Moreover, few studies examine the multiple components of mental health literacy together. For example, available mental health literacy measures may be useful to assess symptoms of mental illness, treatment methods, or beliefs, often stigmatized beliefs, about mental illness (e.g., Ascher-Svanum, 1999; Compton et al., 2011; Evans-Lacko et al., 2010; Gabriel & Violato, 2009; Hess et al., 2004; Hirai & Clum, 2000). Yet, few research studies measure knowledge about mental health resources.

This study found that current literature measuring mental health literacy at a community level is critical to promote mental health care; however, there are several gaps in measurement. A reliable, valid, and comprehensive measure that goes beyond a case vignette and is easy to implement with diverse and larger community populations is necessary to adequately identify the need for mental health education. In order to fill this gap, this study developed a multicomponent mental health literacy measure and tested it with public housing staff who are non-mental health professionals but likely to work with residents at greater risk for mental illness (Simning, van Wijngaarden, & Conwell, 2011). This study presents the processes involved in developing a multicomponent mental health literacy measure and assessing its reliability and validity.

Methods

Development of mental health literacy measure.

The development of the multicomponent mental health literacy measure tested in this study involved the following steps: identifying previous research measuring mental health literacy from 2000 to June, 2012 (see Table 2.1); reviewing literature about knowledge of and beliefs about mental illness, treatment, and resources from 2000 to June, 2012; and searching for any survey instruments measuring mental health literacy available on the Google web (DeVellis, 2012). Based on the literature review, the author generated a pool of items that reflect Jorm and his colleagues' definition of mental health literacy (1997). The review of the literature generated 27 initial items. Some items were specific to depression, schizophrenia, and anxiety that are known to be the most prevalent types of mental disorders and the type of persistent and chronic disorders with heavy burden (World Health Organization, 2008). While items reflecting knowledge of and beliefs about mental illness symptoms, treatment, and cause/risk factors were available in the literature, it was rare to find an instrument that measures knowledge about mental health resources. Hence, the author developed five items measuring knowledge of mental health resources. After confirming content validity with four experts in mental health and mental health literacy research, the initial questionnaire consisted of 32 items. Small focus groups (n=25) from a local public housing authority participated in pilot tests to examine clarity of items and instructions, level of difficulty, and feasibility of the survey (DeVellis, 2012). Based on feedback from focus groups and experts, the items were

refined and the final measure included 30 items. Given that the first 25 items were a mixture of knowledge and beliefs, response format was a five-point Likert scale (i.e., strongly disagree, disagree, neutral, agree, and strongly agree) with the option of "I don't know." For the analysis, each response was grouped into two categories—those who answered "strongly agree" and "agree" were considered having mental health literacy that potentially facilitates mental health service use (coded 1) and those who answered "strongly disagree," "disagree," "neutral," and "I don't know" as having no adequate mental health literacy (coded 0). The response format for the last five items measuring specific knowledge about mental health resources was "yes (coded 1)" or "no (coded 0)."

Table 2.1. Measures Used to Assess Mental Health Literacy

Measures	Study
Beliefs Toward Mental Illness Scale	Hirai & Clum, 2000
Knowledge of depression Multiple Choice Question Instrument	Gabriel & Violato, 2009
"In Our Own Voice" Knowledge Measure	Wood & Wahl, 2006
Mental Health Knowledge Schedule	Evans-Lacko et al., 2010
Knowledge about Depression and Mania Inventory	Kronmuller et al., 2008
Knowledge about Schizophrenia Questionnaire	Ascher-Svanum, 1999
Knowledge about Schizophrenia Test	Compton, Quintero, & Esterberg, 2007
Multiple-Choice Knowledge of Mental Illnesses Test	Compton, Hankerson-Dyson, & Broussard, 2011
Questionnaire	Dogra et al., 2012
Questionnaire	Kitchener & Jorm, 2004
International Depression Literacy Survey	Hickie et al., 2007
Mental Health Test Your Knowledge	Canadian Mental Health Association (www.cmha.ca/english/info-centre/mhw/popquiz.htm)
Adolescent Depression Awareness Program Depression Knolwedge Questionnaire	Hess et al., 2004
Illness Perception Questionnaire-Revised	Moss-Morris et al., 2002; Cabassa, Lagomasino, Dwight-Johnson, Hansen, & Xie, 2008

Data source & sample.

Sample.

Data used for this research came from a survey of current employees of a public housing authority in Texas. A total of 230 people (about 51% response rate) participated

in the survey; however, 19 cases were excluded after a data quality check revealed that 17 cases had missing data and two cases showed a pattern of repeated endorsement of the same response option throughout the measure. A comparison between missing cases and non-missing cases found no significant differences in demographic characteristics. For the purpose of the current study, data analyses included 211 survey participants who completed the multicomponent mental health literacy measure. The characteristics of the sample are presented in Table 2.2.

Table 2.2. Demographic Characteristics of the Sample

	Mean (M)	Standard deviation (SD)	Range
Age	44.56	10.60	22-64
Total	209		
	Frequency (n)	**%**	
Gender			
Male	68	32.38	
Female	142	67.62	
Total	210	100	
Race			
African Americans/Black	28	13.27	
Hispanics/Latino	139	65.88	
White	27	12.8	
Others	17	8.06	
Total	211	100	
Education			
Under 12th grade	2	0.95	
High School/GED	35	16.67	
Trade or technical school	7	3.33	
Some college	69	32.86	
Associate's Degree	23	10.95	
Bachelor's Degree	52	24.76	
Master's or higher degree	22	10.48	
Total	210	100	
Income			
Less than $15,000	6	2.90	
$15,000 to $29,999	54	26.09	
$30,000 to $49,999	72	34.78	
$50,000 or more	75	36.23	
Total	207	100	
Mental Health Treatment Exposure			
Yes	111	55.22	
No	90	44.78	
Total	201	100	

Procedure.

Survey participants were recruited via e-mail advertisement and on-site announcement within the housing agency. Participants had options to complete the survey on-line (Qualtrics) or on paper. The survey questionnaire included measures of multicomponent mental health literacy, social distance from a person with mental illness (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999), confidence in helping someone with mental illness, help-seeking, and demographics including age, race/ethnicity, gender, education, and previous experiences with mental health treatment. The survey questionnaire was available in English and Spanish. Survey instructions and a copy of the informed consent form were sent out to their e-mail and also included in a paper survey packet. Those who chose to fill out a paper copy of a questionnaire picked up the packet on site and used a pre-paid envelop to return the questionnaire to the author. The data were collected from September to October, 2013. The research was approved by the Institutional Review Board (IRB) at The University of Texas at Austin.

Data analysis.

Data analyses for this study included: an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA) to test construct validity; Kuder–Richardson Formula 20 (KR20; Kuder & Richardson, 1937) to examine internal consistency reliability; an independent sample t-test to examine known groups validity; and a correlation analysis of relationships between mental health literacy and social distance to determine convergent

validity. Mplus 7 (Muthén & Muthén, 1998-2012) was used for factor analyses and Stata 12 (Stata Corp, College Station, TX, 2011) for all other analyses.

Construct validity & reliability.

Because the mental health literacy measure was newly developed, EFA was first conducted to examine dimensionality of the measure. EFA was run using weighted least squares means and variance adjusted (WLSMV) estimation and Mplus default Geomin rotation (oblique rotation). Based on EFA results, items with loadings less than 0.32 and cross-loading items were deleted (Tabachnick & Fidell, 2001). The final model was tested using CFA. Given all indicators were dichotomous, Kuder–Richardson Formula 20 (KR20; Kuder & Richardson, 1937) was used to determine internal consistency reliability. All models were evaluated based on conceptual fit and standard empirical fit indices including the absolute fit indices—chi square and root mean square error of approximation and the incremental fit indices—comparative fit index (CFI) and Tucker-Lewis Index (TLI).

Known groups validity.

Previous literature reports that people who are exposed to mental health treatment for self or close relatives have a higher level of mental health literacy than their counterparts with no exposure (Esterberg, Compton, McGee, Shim, & Hochman, 2008; Deen & Bridges, 2011; Jorm, 2012). Hence, known groups validity (Rubin & Babbie, 2013) was tested by comparing mental health literacy scores between people who had a history of mental health treatment for self or close family members and people who had

no such experiences. An independent sample t-test was used to examine known groups validity.

Convergent validity.

It is hypothesized that people with higher mental health literacy have lower stigma (Jorm, 2012). With this assumption, this study conducted a correlation analysis and tested convergent validity (Rubin & Babbie, 2013) by examining relationships between the mental health literacy measurement and revised four-item social distance scale (Link et al., 1999).

Results

Construct validity & reliability.

The exploratory factor analysis using WLSMV estimator and Geomin rotation suggested a three factor model: knowledge-oriented mental health literacy; beliefs-oriented mental health literacy; and resource-oriented mental health literacy. Initial EFA analysis reported empty cell warnings that imply correlations of one between two items, hence, two items (i.e., “Children do not develop mental illnesses” and “I know what the National Alliance on Mental Illness does”) were deleted (Muthen,2014) and the EFA of 28 items was conducted. The EFA result showed 8 factors with eigenvalue over 1; however, no significant differences between models after five factor models were found (see Table 2.3).

Table 2.3. Results of Initial Exploratory Factor Analysis Model Fit Statistics

Model fit statistics	**2-Factor model**	**3-Factor model**	**4-Factor model**	**5-Factor model**	**6-Factor model**	**7-Factor model**	**8-Factor model**
χ^2	457.68	349.24	301.48	259.88	227.47	199.96	170.86
Degrees of freedom	323	297	272	248	225	203	182
***p*-Value**	<.001	0.02	0.11	0.29	0.44	0.55	0.71
Comparative fit index (CFI)	.92	.97	.98	.99	1.00	1.00	1.00
Root mean squared error of approximation (RMSEA)	.04 (.04-.05)	.03 (.01-.04)	.02 (.00-.04)	.02 (.00-.03)	.01 (.00-.03)	.00 (.00-.03)	.00 (.00-.02)
Tucker-Lewis index (TLI)	.90	.96	.97	.99	1.00	1.00	1.02

Furthermore, visual examination of a scree plot indicated a three factor model. Examination of factor structure of two to five factor models suggested that a three factor model produced the most simple factor structure and was theoretically meaningful.

Twelve items clustered into the first factor addressing symptoms of mental illness and helpfulness of mental health treatment options; 10 items in the second factor were related to need for mental health treatment and cause and risk factors; and four items of the third factor were specific to knowledge about mental health resources. Two items were poorly functioning as they were cross-loaded in multiple factors and/or factor

loading less than .35. Further examination of the first and second factors suggest that the first factor required specific knowledge to respond to items and the second factor tapped into affective or evaluative belief system— beliefs that are often associated with stigma and deter people from seeking mental health treatment. Hence, the three factors represented knowledge-oriented mental health literacy, beliefs-oriented mental health literacy, and resource-oriented mental health literacy. The descriptive statistics of 26 items and their factor loadings are presented in Table 2.4.

Table 2.4. Descriptive Statistics and Factor Loadings of 26 Items

	Frequency* (N=211)	%	alpha	Factor 1	2	3
Knowledge-oriented Mental Health Literacy			.76			
1. Counseling is a helpful treatment for depression.	187	88.63		.45		
2. A person with schizophrenia may see things that are not really there.	152	72.04		.49		
3. Early diagnosis of a mental illness can improve chances of getting better.	157	74.41		.44		
4. Attending peer support groups helps recovery from mental illness.	111	52.61		.78		
5. Unexplained physical pain or fatigue can be a sign of depression.	133	63.03		.62		
6. Cognitive behavioral therapy can change the way a person thinks and reacts to stress.	117	55.45		.64		
7. A person with bipolar disorder may show a dramatic change in mood.	191	90.52		.82		
8. Taking prescribed medications for mental illness is effective.	135	63.98		.36		
9. When a person stops taking care of his or her appearance, it may be a sign of depression.	145	68.72		.60		
10. Drinking alcohol makes symptoms of mental illness worse.	155	73.46		.58		
11. A person with mental illness can receive treatment in a community setting.	101	47.87		.60		

Table 2.4., cont.

	Frequency* (N=211)	%	alpha	Factor 1	2	3
12. A person with anxiety disorders has excessive anxiousness or fear.	157	74.41		.56		
Beliefs-oriented Mental Health Literacy			.77			
13. A highly religious/spiritual person does not develop mental illnesses.	186	88.15			.60	
14. Depression is a sign of personal weakness.	169	80.09			.53	
15. Mental illness is a short-term disorder.	176	83.41			.66	
16. Recovery from mental illness is mostly dependent on chance or fate.	177	83.89			.71	
17. A person with depression should not be asked if he or she has thoughts of suicide.	149	70.62			.44	
18. Poor parenting causes schizophrenia.	174	82.46			.59	
19. Mental illness will improve with time, even without treatment.	170	80.57			.83	
20. Recovering from a mental illness is the same as being cured.	154	72.89			.69	
21. A person can stop hoarding whenever he/she wants to.	171	81.04			.73	
22. A person with depression will get better on his or her own without treatment.	175	82.94			.84	

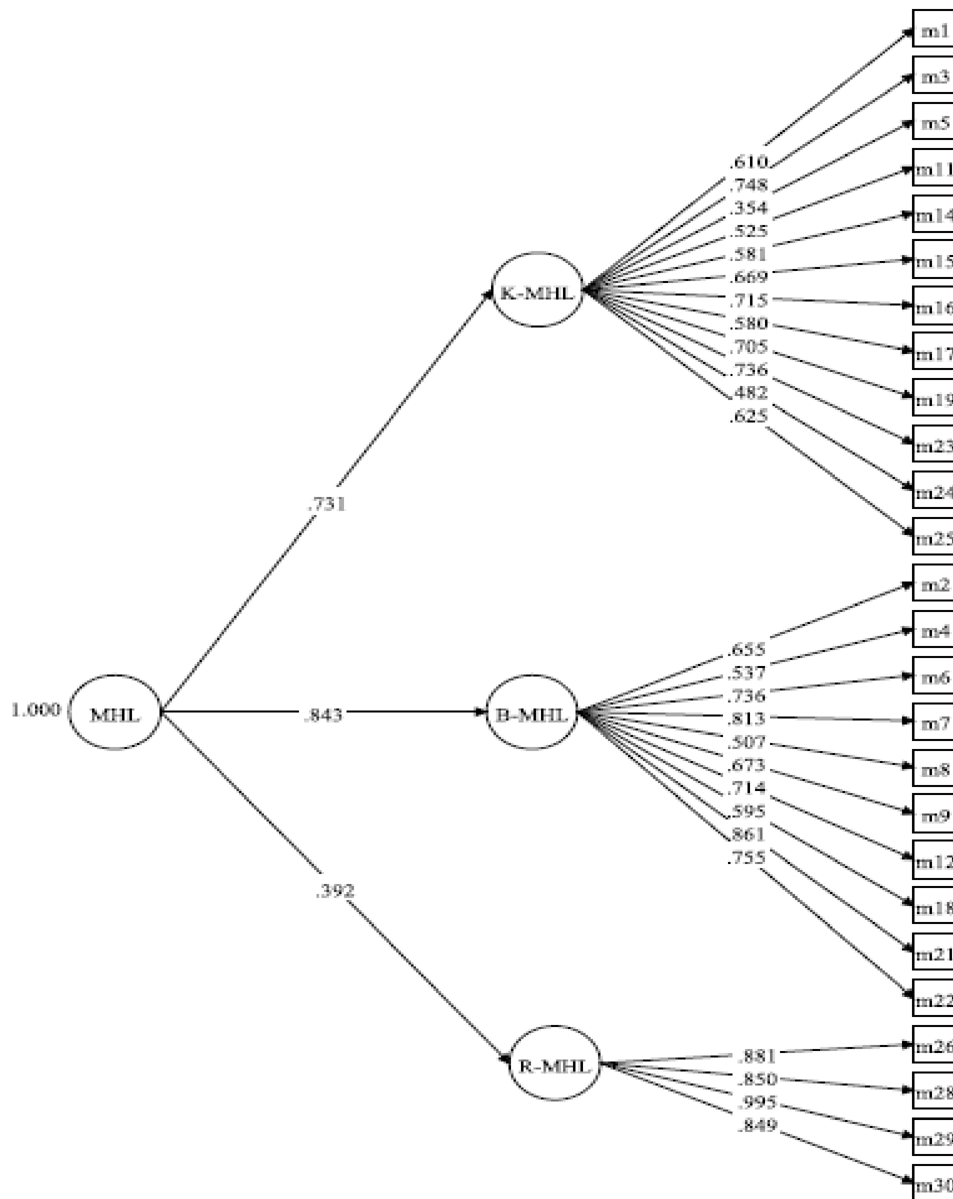
Table 2.4., cont.

	Frequency* (N=211)	%	alpha	Factor		
				1	2	3
Resource-oriented Mental Health Literacy			.84			
23. I know where to go to receive mental health services.	146	69.19				.88
24. I know how to get the number of a suicide prevention hotline.	155	73.46				.93
25. I know where to get useful information about mental illness.	156	73.93				.98
26. I know how to contact a mental health clinic in my area.	148	70.14				.92

Note. Factor loadings>.35 are shown.
*Frequencies of responses coded 1.

After deleting two poorly functioning items, the CFA of the second-order model with 26 items was conducted. Based on the concept of mental health literacy (Jorm et al., 1997), it was theorized that mental health literacy is a higher order factor influencing knowledge-oriented mental health literacy, beliefs-oriented mental health literacy, and resource-oriented mental health literacy. Therefore, the second-order factor model CFA was conducted. The result demonstrated a good model fit for the data: χ^2 (296, N = 211) = 327.30, p = .10; RMSEA = .02 (.00-.04); CFI = .98; and TLI = .98. All factor loadings were significant ranging from .35 to .995 (see Figure 2.1).

Figure 2.1. Final Model



Note. MHL: Mental health literacy; K-MHL: Knowledge-oriented mental health literacy; B-MHL: Beliefs-oriented mental health literacy; & R-MHL: Resource-oriented mental health literacy

Reliability analyses suggested good internal consistency of the measure. The KR-20 coefficient for all 26 items was .83. The coefficient of the first factor was .76; the second factor was .77; and the third factor was .84.

Known groups and convergent validity.

Both known groups and convergent validity analyses supported validity of the multicomponent mental health literacy measure. Public housing staff with a history of mental health treatment for self or family members (M = 20.68, SD = 4.00, n = 111) had significantly higher mental health literacy than their counterparts (M = 17.39, SD = 5.32, n = 90); $t(162.02) = 4.86$, p <.001, two-tailed. In addition, higher mental health literacy was also significantly associated with lower social distance from a person with mental illness (r =.37; p < .001). As hypothesized, this finding indicates that people who have experienced mental health treatment for self or family members are more likely to know about mental illness. Those with higher knowledge about mental illness are likely to be willing to interact with people with mental illness.

Conclusion

In responding to increased attention to mental health literacy and gaps in current mental health literacy research, this study developed a measure that assesses multiple components of mental health literacy among lay community members. The findings suggest that this measure consists of a three factor model of 26 items. The three factors represent knowledge-oriented mental health literacy, beliefs-oriented mental health literacy, and resource-oriented mental health literacy. Psychometric analyses confirmed

that this measure has good reliability and validity to assess mental health literacy among public housing staff. As previous literature suggested (e.g., Deen & Bridges, 2011; Jorm, 2012), this study confirms that those with mental health treatment history have higher mental health literacy. Those with higher mental health literacy are more willing to interact with people with mental illness, which indicates lower stigma (Jorm, 2012).

The findings suggest that this measure is a promising tool to assess multiple components of mental health literacy among lay community people who are not mental health professionals. Although this measure is only used for public housing staff in this study, it is worth noting that the participants represent a broad range of demographic characteristics, which indicates a potential applicability of this measure to other community people. In addition, this study advances current knowledge of mental health literacy measurement by including multiple components of mental health literacy as defined by Jorm and his colleagues (1997). This multicomponent mental health literacy measure particularly includes items about mental health resources; this knowledge seems critical in actual help-seeking or helping someone with mental illness (Ayalon & Alvidrez, 2007; Cabassa & Zayas, 2007; Lee et al., 2009). However, it is unknown to what extent these components influence factors associated with mental health care such as stigma, helping others with mental illness, or help-seeking. Further research is needed in this area.

Methodologically, this study includes a response option “don’t know.” The rationale for adding “don’t know” to the five-point Likert scale was to reduce bias from

forcing study participants to answer items that they cannot respond to because of a lack of knowledge (Durand & Lambert, 1988; Evans-Lacko et al., 2010; Luskin & Bullock, 2011). During focus group interviews, participants indicated that they selected “don’t know” when they had no knowledge of items and differentiated between “don’t know” and “neutral.” Due to small sample size, this study decided not to discriminate “don’t know” responses. However, given the nature of measuring mental health literacy, future research with a larger sample might consider giving the option of “don’t know” and separate this response in data analysis so that findings could more accurately reflect mental health literacy.

Despite its’ potential, the outcome of this research should be interpreted with caution. First, as noted above, this measure is only tested in a local public housing staff. Even though participants represent various demographic characteristics, further research with larger and more diverse community populations should be followed to strengthen the reliability and validity of this measurement. Second, this measure is a self-report tool. Although the survey was conducted anonymously, this study could not be free from social desirability bias, particularly in measuring beliefs of mental illness (Rubin & Babbie, 2013). Third, this measure can be used to identify participants’ literacy on multiple aspects of mental health. However, it does not ensure whether they recognize mental health problems when they see a person with mental health problems. Future research might use a case vignette alongside this measurement to enhance its validity.

Untreated mental health problems and delayed help-seeking can prevent people from living a productive life because of, but not limited to, disability, unemployment, incarceration, homelessness, or mortality (Folsom et al., 2005; Fortuna, Perez, Canino, Sribney, & Alegria, 2007; Hawthorne et al., 2012; James & Glaze, 2006; Parks, Svendsen, Singer, Foti, & Mauer, 2006). These situations also cause a heavy burden to the U.S. society (Eaton et al., 2008; Kessler et al., 2008; McGuire et al., 2002). Hence, recognizing mental health problems and receiving mental health treatment as early as possible is critical. Current literature also suggests that many people may get mental health treatment after they go through other various avenues, such as family, friends, and social service providers (Cabassa & Zayas, 2007; Kim et al., 2006; Woodward et al., 2008). Consequently, mental health literacy among people who are not mental health professionals is essential to early intervention and ultimately for mental health care (Ellis et al., 2010; Kelly et al., 2007; Stiffman, Pescosolido, & Cabassa, 2004). This might involve employees in many organizations and community service centers that interact with those at greater risk for mental health problems or mental illness (e.g., social workers at various settings, teachers in school settings, and employees in social service organizations; Ellis et al., 2010; Mendenhall et al., 2013; Stiffman, Pescosolido, & Cabassa, 2004).

This study provides a promising tool to promote early intervention by measuring mental health literacy among lay community members. This measure may be used to identify people's levels of mental health literacy, provide them adequate mental health

education, and ultimately promote a healthy life. In addition, this tool can help measure levels of mental health literacy among employees who are not mental health professionals but are likely to work with people at greater risk for mental health problems. Their ability to recognize symptoms of mental health and knowledge about treatment and available resources would facilitate referral of their clients to mental health services as early as possible. This measure would be useful to gauge their mental health literacy and help determine the need for mental health education for these staff members.

In conclusion, mental health literacy is an essential element of promoting mental health in the community. Yet, mental health literacy research in the community settings requires more attention in the U.S. A reliable, valid, and comprehensive measure of this mental health literacy might be the fundamental step to build future mental health literacy research.

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Chapter 3: Mental Health Literacy, Stigma, and Social Support in Attitudes toward Mental Health Help-Seeking

Introduction

The lifetime and annual prevalence of mental illness is well-documented in current literature (Kessler et al., 2005; SAMHSA, 2014). In 2013, 43.8 million (18.5%) adults in the U.S. experienced any form of mental illness (SAMHSA, 2014). Despite the high prevalence of mental illness, a relatively small proportion of people seek mental health care in a timely manner (Wang et al., 2005a, 2005b). For example, of those with any mental illness, less than half of them (44.7%) used mental health services in the past year (SAMHSA, 2014). Underutilization of mental health care or delayed help-seeking places a heavy economic and social cost on individuals, families, communities, and the nation (Insel, 2008; Kessler et al., 2008). In order to facilitate mental health care, mental health researchers seek to understand the phenomenon of mental health help-seeking and conclude that it is a complicated decision making process involving multiple factors and steps (Cornally & McCarthy, 2011). More empirical research is needed to understand the complex phenomenon of mental health help-seeking.

Theory of reasoned action is one approach to explain the complex process of a person's help-seeking behavior (Fishbein & Ajzen, 2010). It hypothesizes that beliefs influence attitudes, perceived norms, and perceived behavioral control; these three constructs predict intention; and intention ultimately determines behavior (Fishbein &

Ajzen, 2010). Although little research, if any, examines full causal relationships among these constructs, mental health research reports that attitudes toward mental health help-seeking is an important predictor of help-seeking behavior (Gulliver, Griffiths, & Christensen, 2010; ten Have et al., 2010). Multiple factors influence attitudes toward mental health help-seeking. These include knowledge and beliefs about mental illness such as treatment options and effectiveness of treatment (i.e. mental health literacy), social support encouraging help-seeking, and stigma (Gulliver et al., 2010; Jorm, 2012; Jorm et al., 2000; Rüsch et al., 2013; Vogel, Wade, Wester, Larson, & Hackler, 2007).

Mental health literacy.

Theory of reasoned action highlights the importance of one's beliefs as fundamental to determining help-seeking behavior, which is in line with mental health literacy. Mental health literacy refers to knowledge and beliefs about multiple aspects of mental illness and treatment and is supposed to facilitate recognition of mental illness and promotion of mental health care (Jorm et al., 1997; Jorm, 2000). Although introduction of the term *mental health literacy* in the U.S. is recent, knowledge and beliefs about mental illness have been identified as critical factors associated with mental health help-seeking (U.S. Department of Health and Human Services, 1999, 2001). The extent to which people understand causes of mental illness, effectiveness of treatment, recovery process of mental illness, and mental health resources is related to mental health help-seeking (Downs & Eisenberg, 2012; Gulliver et al., 2010; Thompson, Hunt, & Issakidis, 2004). For example, people who believe that mental health treatment is beneficial and effective

are likely to have favorable attitudes toward help-seeking or are more willing to use mental health services (Givens, Katz, Bellamy, & Holmes, 2007; Gonzalez, Alegria, Prihoda, Copeland, & Zeber, 2011; Jang, Chiriboga, Herrera, Tyson, & Schonfeld, 2011). However, previous research had methodological limitations in that mental health knowledge and beliefs were measured with a few items targeting a few components of mental health literacy (e.g., Cooper et al., 2003; Downs & Eisenberg, 2012; Givens, Katz, Bellamy, & Holmes, 2007; Wong, Tran, Kim, Van Horn Kerne, & Calfa, 2010). Few research studies use a measure of mental health literacy that assesses mental health knowledge and beliefs in multiple areas and examines the way in which mental health literacy influences attitudes toward mental health help-seeking.

Stigma.

Stigma is a major barrier that prevents people from seeking mental health services (Clement et al., 2015; Corrigan, 2004; Eisenberg, Downs, Golberstein, & Zivin, 2009; Gulliver et al., 2010). Similar to mental health literacy, stigma is a multidimensional construct with four different sub-types reported in the literature: public stigma, personal stigma, perceived public stigma, and self-stigma. Public stigma refers to stereotyping, prejudice, and discrimination against people with mental illness by the general public (Corrigan, 2004); and, personal stigma is the same as public stigma but is directed outwardly towards others with mental illness by individuals (Eisenberg et al., 2009). Perceived public stigma is one's awareness about the way in which public pertains stigma against people with mental illness (Eisenberg et al., 2009). Self-stigma exists when a

person with mental illness internalizes public stigma and devalues his or her self-esteem and self-efficacy (Corrigan, 2004). Different types of stigma do not impact mental health help-seeking independently; rather they are interrelated and are likely to work in various ways to influence mental health help-seeking (Eisenberg et al., 2009; Vogel et al., 2007). For example, Vogel and colleagues (2007) found that public stigma influences self-stigma and self-stigma influences attitudes toward and willingness to seek counseling of college students.

Current literature reports that mental illness stigma may discourage people from admitting a need for mental health treatment and/or seeking mental health services even after they acknowledge need for services (Corrigan, 2004; Mojtabai, Olfson, & Mechanic, 2002; Mojtabai et al., 2011). For example, Interian and colleagues (2010) report that people with higher perceived stigma were less likely to receive mental health treatment for depression. In contrast, those who had lower stigma were more likely to have received mental health treatment in the past three months (Interian et al., 2010). Various factors are associated with stigma. These factors include beliefs about causes of mental illness, experiences in mental health treatment, contact with someone with mental illness, gender, age, and education (Calear, Griffiths, & Christensen, 2011; Griffiths, Christensen, & Jorm, 2008; Jorm & Oh, 2009). Although a few studies indicate that mental health literacy is related to stigma (Calear, Griffiths, & Christensen, 2011; Griffiths et al., 2008; Jorm & Oh, 2009), more research in this area is needed in the U.S.

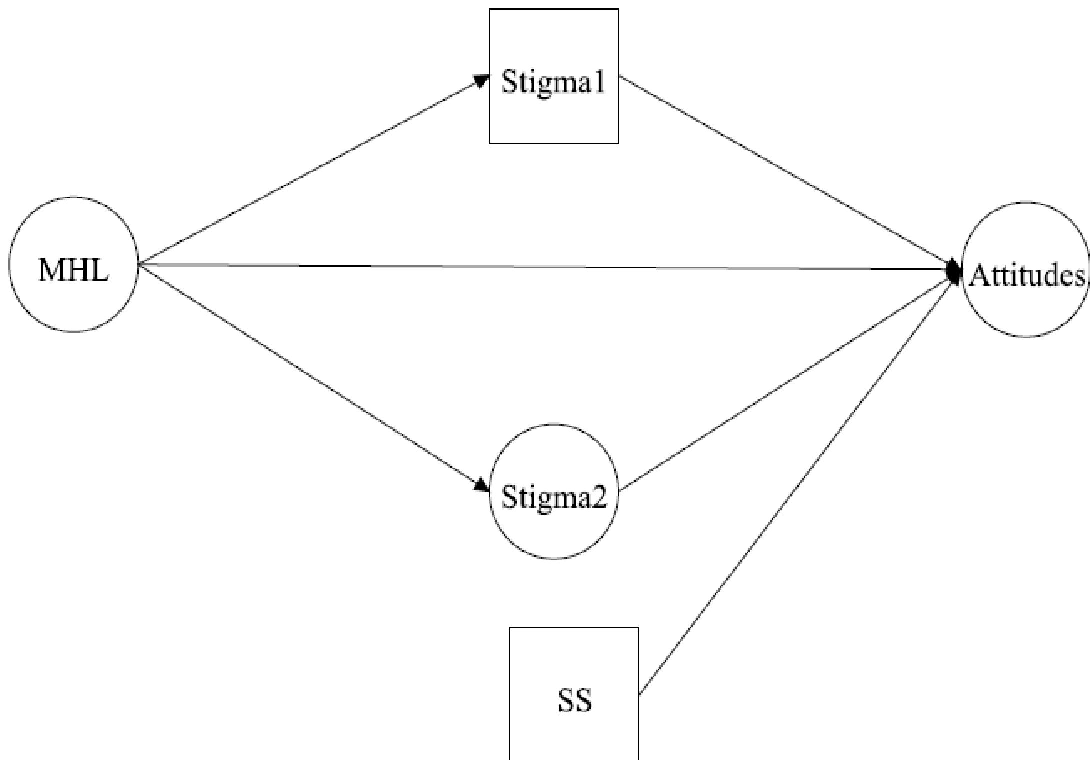
Social support.

Many people do not directly seek mental health professionals when they need help; rather, they prefer help from their families, friends, or other informal resources (Chu & Sue, 2011; Cabassa & Zayas, 2007; Nadeem, Lange, & Miranda, 2008; Woodward, Taylor, Neighbors, Chatters, & Jackson, 2008). This kind of social support seems critical to mental health help-seeking (Cabassa et al., 2006; Gulliver et al., 2010; Kelly, Jorm, & Wright, 2007; Vogel et al., 2007; Woodard et al., 2008). However, available studies report inconsistent findings about the role of social support. Some studies report a negative relationship between social support and mental health service use (Maulik, Eaton, & Bradshaw, 2009; Snowden, 2007). Snowden (2007) found that living with family and having family support were associated with less likelihood of receiving outpatient and inpatient services among Asian Americans and Latino Americans. Other studies reveal opposite findings. Those who believe that close associates would support or encourage mental health treatment are more likely to accept mental health services than those who do not (Cabassa & Zayas, 2007; Corrigan, 2004; Downs & Eisenberg, 2012; Vogel et al., 2007; Woodard et al., 2008). Inconsistent findings call for further research to better understand the impact of social support on mental health help-seeking. In addition, little is known about how strongly social support influences mental health help-seeking when accounting for other prominent factors.

Present study.

Mental health literacy, stigma, and social support—the focus of the present study—are significant predictors for mental health help-seeking (Rüsch et al., 2013; Rüsch, Evans-Lacko, Henderson, Flach, & Thornicroft, 2011; Thompson et al., 2004). Yet, few studies examine the ways in which these variables collectively influence mental health help-seeking. The present study applied theory of reasoned action and proposed to examine the roles of these variables on attitudes toward mental health help-seeking that is a proxy for mental health help-seeking behavior. More specifically, this study investigated the way in which mental health literacy corresponding to beliefs in theory of reasoned action influences attitudes toward mental health help-seeking. Two types of stigma—personal stigma and self-stigma—were included as mediators. Social support was included as an independent variable influencing attitudes toward mental health help-seeking. It was hypothesized that mental health literacy and social support would have direct relationships with attitudes toward mental health help-seeking; and both personal and self-stigma would mediate relationships between mental health literacy and attitude toward mental health help-seeking. The hypothesized model is presented in Figure 3.1.

Figure 3.1. Hypothesized Model



Note. MHL=Mental health literacy; Stigma1=Self-stigma; Stigma 2= Personal stigma; SS= Social support; Attitudes=Attitudes toward mental health help-seeking

Methods

Data source & sample.

A sample of 191 participants was drawn from mental health literacy survey data collected from September to October, 2013. All survey participants were employees of a local public housing authority in Texas. Invitation letters including the purpose of the study, eligibility criteria, and steps to participation were distributed via e-mail and on-site

announcement before the online survey was launched. Participants were invited to complete the survey questionnaire either online or by mail. The survey questionnaire was available in English and Spanish. An informed consent form was sent out with a survey link via e-mail on the day the survey was launched. A copy of the informed consent form was also included in each mail survey packet. Participants were provided pre-stamped envelopes to return the completed questionnaire. The survey research was approved by the Institutional Review Board at The University of Texas at Austin.

Of 230 survey participants (51% response rate), 33 cases had missing data. Analysis of missing data showed that 16 respondents did not provide information if they have been exposed to mental health treatment for themselves or close family members (exposure variable). Further examination found no statistically significant difference in mental health literacy and attitudes toward mental health help-seeking between the participants who responded to the exposure variable and those who did not. Listwise deletion was applied after the probability of missing at random was determined and variables with missing data were categorical. Moreover, two cases were not included in the data analysis because they repeatedly endorsed the same response option throughout a multicomponent mental health literacy measure. Finally, four multivariate outliers were excluded from the data analysis.

Measures.

Mental health literacy.

Mental health literacy was measured by a 26-item scale assessing multiple components of knowledge and beliefs about mental illness symptoms, treatment, and resources. Six response categories (strongly disagree, disagree, neutral, agree, strongly agree, and I don't know) were available. Negative statements were reverse-coded. Those who answered agree and strongly agree demonstrated adequate mental health literacy and their responses were coded as 1. Those who responded otherwise were coded as 0. The total possible mental health literacy score ranged from 0 to 26. The highest score indicated higher mental health literacy. This measure proved to have construct, known-groups, and convergent validity and good reliability (α= .83) (Jung, in progress).

Attitudes toward mental health help-seeking.

Attitudes toward mental health help-seeking were assessed by three items: (1) "If I had mental health problems, I would handle them on my own"; (2) "If I had mental health problems, I would feel comfortable talking with mental health professionals"; and (3) "If I had mental health problems, I would seek professional mental health treatment as the last resort." A five-point Likert scale (strongly disagree coded as 1 and strongly agree coded as 5) was used for rating. First and third items were reverse-coded. The total possible score ranged from 5 to 15. The higher score indicated more positive attitudes toward mental health help-seeking. Internal consistency reliability coefficients of three items was acceptable (α = .60).

Stigma.

Stigma was measured in two ways. First, a revised four-item Social Distance scale (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999) was used to assess personal stigma. Four statements included 1) I am willing to work on the same job with a person with a mental illness; 2) I am willing to be friends with a person with a mental illness; 3) I am willing to live next door to a person with a mental illness; and 4) I am willing to talk to a person with a mental illness. Participants responded in a five-point Likert scale (strongly disagree coded as 1 and strongly agree coded as 5). The total score ranged from 4 to 20. Internal consistency reliability coefficients for current sample was good ($\alpha = .78$). In addition, self-stigma was measured by asking participants whether they would be embarrassed if their friends knew they were getting professional help for a mental illness. Participants responded in five-point Likert scale, not at all (coded as 5), a little (coded as 4), moderately (coded as 3), very (coded as 2), and extremely (coded as 1). For both stigma measures, the higher scores indicated lesser stigma.

Social support.

Social support was measured by a single item: “Would your family encourage you to see a mental health professional if you had symptoms of mental illness?” Participants responded in a five-point Likert scale: not at all (coded as 1), a little (coded as 2), moderately (coded as 3), very (coded as 4), and extremely (coded as 5). The higher scores indicated more social support.

Demographic variables.

Demographic background information included gender, age, race/ethnicity, education, and exposure to mental health treatment. Participants were coded as 1 (yes, having exposure to mental health treatment) if they had positive responses in one of the following items; “Have you ever received mental health treatment?” or “Has anyone in your close family ever received mental health treatment?”

Data analysis.

Descriptive statistics for the sample demographic characteristics and bivariate relationships were analyzed using independent sample t-test, correlation, and analysis of variance (ANOVA). Structural equation modeling employing *weighted least squares* means and variance adjusted (*WLSMV*) was used to examine the relationships among mental health literacy, personal and self-stigma, social support, and attitudes toward mental health help-seeking. WLSMV was used because it is considered the most appropriate estimator for modelling with categorical data and is robust against non-normal distribution of variables (Brown, 2006). STATA 12 (Stata Corp, College Station, TX, 2011) was used for descriptive statistics and bivariate relationships analyses and MPlus 7 (Muthén & Muthén, 1998-2012) for structural equation modeling analysis.

Results

Sample.

The majority of participants included in this study were female (68.60%) and Hispanic/Latino (66%). Over half of participants had experience with mental health

treatment for self or close family members. Demographic characteristics of participants are presented in Table 3.1.

Table 3.1. Demographic Characteristics of the Sample (*N* = 191)

	Mean (M)	**Standard deviation (SD)**	**Range**
Age	44.61	10.59	22-64
	Frequency (n)	**%**	
Gender			
Male	60	31.4	
Female	131	68.6	
Race			
African Americans/Black	25	13.1	
Hispanics/Latino	126	66.0	
White	24	12.6	
Others	16	8.4	
Education			
Under 12th grade	2	1.0	
High School/GED	31	16.2	
Trade or technical school	7	3.7	
Some college	63	33.0	
Associate's Degree	21	11.0	
Bachelor's Degree	47	24.6	
Master's or higher degree	20	10.5	
Exposure to mental health treatment			
Yes	83	43.5	
No	108	56.5	

Attitudes toward mental health help-seeking.

Bivariate relationship analyses found that of demographic variables only exposure to mental health treatment was significantly associated with attitudes toward mental health help-seeking at $p < .05$. Public housing staff with a history of mental health treatment for self or family members (M = 12.06, SD = 1.94, n = 108) had significantly favorable attitudes toward mental health help-seeking than their counterparts (M = 11.25, SD = 1.78, n = 83); $t(189) = 2.94$, p =.004, two-tailed. In addition, age was positively associated with attitudes toward mental health help-seeking. Although it was not significant (r = .13; p = .09), age was considered conceptually important and was included in the model. The main constructs—mental health literacy, stigma, and social support showed significant relationships with attitudes toward mental health help-seeking. The results of descriptive statistics and bivariate relationship analyses of the main constructs are presented in Table 3.2 and 3.3. Age and exposure to mental health treatment variables were included in the structural equation modeling. Based on the previous literature reporting the impact of these two factors on mental health literacy (e.g., Gabriel & Violato, 2010; Farrer, Leach, Griffiths, Christensen, & Jorm, 2008; Pinto-Foltz et al., 2011), paths from age and exposure to mental health literacy were added as well as original paths from these variables to stigma measures and attitudes toward mental health help-seeking.

Table 3.2. Descriptive Statistics of the Main Constructs

	Mean (M)	Standard deviation (SD)	Range
Mental Health Literacy	19.37	4.83	3-26
Personal Stigma	15.16	2.22	8-20
Attitudes	11.71	1.91	5-15
Self-Stigma	3.77	1.17	1-5
Social Support	4.06	.98	1-5

Note. Attitudes=Attitudes toward mental health help-seeking

Table 3.3. Bivariate Relationships of the Main Constructs

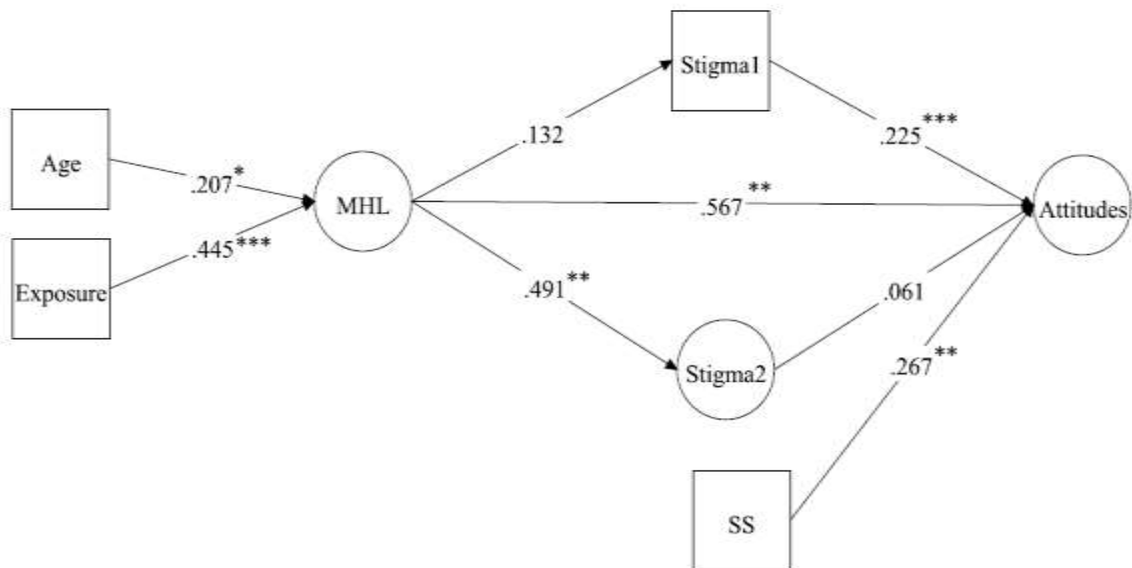
	Attitudes	Mental Health Literacy	Self-Stigma	Personal Stigma	Social Support
Attitudes	1				
Mental Health Literacy	$.414^{***}$	1			
Self-Stigma	$.251^{***}$	.098	1		
Personal Stigma	$.284^{***}$	$.362^{***}$	$.159^{*}$	1	
Social Support	$.215^{**}$	$.206^{**}$	$.160^{*}$	$.176^{*}$	1

Note. Attitudes=Attitudes toward mental health help-seeking
* $p < .05$, ** $p < .01$, *** $p < .001$

The results from structural equation modeling (χ^2 (613, N = 191) = 688.72, p = .02; RMSEA = .03 (.01 - .04); CFI = .94; and TLI = .94) suggested that the data fit the hypothesized model well. As hypothesized, mental health literacy (β = .58, p = .009) and perceived family support (β = .27, p = .003) predicted attitudes toward mental health help-seeking. Those with higher mental health literacy scores were likely to have positive attitudes toward seeking mental health services. Those who believed that their family would be supportive of seeking professional help had positive attitudes toward mental

health help-seeking. However, neither personal stigma nor self-stigma did not mediate the relationship between mental health literacy and attitudes toward mental health help-seeking. Although mental health literacy was significantly related to personal stigma (β = .46, p = .001), personal stigma was not related to attitudes toward mental health help-seeking (β = .07, p = .52). On the other hand, self-stigma was not significantly associated with mental health literacy (β = .15, p = .17) while it was a significant factor related to attitudes (β = .22, p = .001). Age and exposure to mental health treatment were significantly associated with mental health literacy but not with attitudes toward mental health help-seeking and stigma. The final model was run after excluding the insignificant paths from age and exposure to attitudes toward mental health help-seeking and stigma. The model fit indices remained the same. The final model with standardized coefficients is presented in Figure 3.2.

Figure 3.2. Final Model



Note. MHL=Mental health literacy; Stigma1=Self-stigma; Stigma 2= Personal stigma; SS= Social support; Attitudes=Attitudes toward mental health help-seeking
* $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

The present study examined the way in which three factors—mental health literacy, stigma, and social support—predict attitudes toward mental health help-seeking. The study proposed the following hypotheses: 1) mental health literacy and social support would directly predict attitudes toward mental health help-seeking; 2) stigma would mediate the relationship between mental health literacy and attitudes toward mental health help-seeking. Findings confirmed the first hypothesis. People who had higher mental health literacy scores and family support for mental health care were likely to have favorable attitudes toward mental health help-seeking. These findings are congruent with previous studies reporting the positive impact of knowledge and beliefs about

mental illness and social support on mental health help-seeking (Cabassa & Zayas, 2007; Downs & Eisenberg, 2012; Eisenberg et al., 2007; Givens, Houston, Van Voorhees, Ford, & Cooper, 2007; Gulliver et al., 2010; Thompson et al., 2004; Vogel et al., 2007; Woodard et al., 2008).

On the other hand, the second hypothesis about stigma yielded mixed results; no mediating role of stigma was found. Mental health literacy was significantly associated with personal stigma. As hypothesized, the more people knew about mental health, the more they were willing to interact with someone with mental illness, which indicates lower stigma. This finding is congruent with previous literature (Jorm & Oh, 2009). Mental health literacy was positively related to self-stigma; the more people knew about mental health, the less they felt embarrassed about their friends knowing their mental health service use. However, this relationship was not statistically significant. Regarding the impact of personal and self-stigma on attitudes toward mental health help-seeking, personal stigma did not predict attitudes toward mental health help-seeking, whereas self-stigma did. Unexpected relationships among mental health literacy, stigma, and attitudes toward mental health help-seeking might contribute to the different nature of personal and self-stigma. Personal stigma posits that other people have mental illness (Eisenberg et al., 2009); the latter refers to a person’s own mental illness (Corrigan, 2004). People might be able to stay more objective and use their knowledge and beliefs when interacting with someone else with mental illness; however, when they have mental illness, their knowledge and beliefs might not alleviate their sense of shame. Other

factors might be associated with self-stigma, such as perceived public stigma (Corrigan, 2004; Vogel et al., 2007). For example, regardless of a person's mental health literacy, some might feel ashamed to use mental health services out of fear how other people will respond to them.

The different roles of personal and self-stigma on attitudes toward mental health help-seeking could be similarly explained. Because help-seeking deals with one's own mental illness, the way in which a person interacts with others with mental illness might not be significantly related to one's own attitudes toward seeking mental health services. However, the way in which a person feels about seeking mental health care can influence one's own help-seeking attitudes. Rüsch and colleagues (2013) reported similar findings that those with negative attitudes toward mental health help-seeking expressed greater self-stigma. Other studies also indicate that the way in which different types of stigma lead to help-seeking might be different (Corrigan, Watson, & Barr, 2006; Downs & Eisenberg, 2012; Eisenberg et al., 2009). A systematic review about the relationship between stigma and help-seeking by Clement and colleagues (2015) suggested that self-stigma is associated with help-seeking but not personal stigma. Similarly, Eisenberg et al. (2009) found that college students' self-stigma was related to their medication and therapy use but not perceived public stigma.

Methodological issues may offer an alternative explanation about the role of stigma. Personal stigma was measured by a four-item scale; however, self-stigma was measured by only one item. The single item might not represent self-stigma well.

Moreover, it is possible that social desirability bias might influence the way in which people respond to their personal stigma and self-stigma.

The present study sought to explain relationships among mental health literacy, stigma, social support, and attitudes toward mental health help-seeking through structural equation modeling analysis. The findings have several implications for current practice, research, and policy. First, this study used a mental health literacy measure that assesses multiple components of mental health knowledge and beliefs. Previous literature tends to measure certain aspects of mental health literacy with a couple of items. This approach might limit a fuller understanding of the role of mental health literacy on mental health help-seeking attitudes. Using a more comprehensive and valid measure of mental health literacy would be helpful to future mental health literacy research.

Second, this study developed a hypothesized model guided by the theory of reasoned action. Previous literature applied the theory of reasoned action found similar results that beliefs positively influence a person's help-seeking attitudes or intention (Cabassa et al., 2007; Cooper et al., 2003; Givens et al., 2007a; Compton & Esterberg, 2005; Schomerus, Matschinger, & Angermeyer, 2009; Van Voorhees et al., 2006). Although a full theory of reasoned action model was not applied in current study, the findings provide additional evidence that the theory of reasoned action may be useful to explain mental health help-seeking behavior. Future research might consider applying the full model guided by the theory of reasoned action to explain the way in which mental

health knowledge and beliefs influence mental health help-seeking attitudes, intention, and behavior.

Third, this study adds empirical evidence to current literature that depending on type, stigma could influence mental health help-seeking in various ways. As demonstrated in this study, self-stigma could be a direct predictor for mental health help-seeking. Although personal stigma did not influence mental health help-seeking for a person's own mental illness, it could impact the way in which a person helps others with mental illness to facilitate mental health help-seeking (Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Vidourek, King, Nabors, Lynch, & Merianos, 2014). Given the multidimensional role of stigma in help-seeking, more research is needed to examine the way in which different types of stigma work together to influence mental health help-seeking.

Finally, the foremost implication of this study is the need for mental health education. This study suggests that mental health literacy directly influences help-seeking attitudes. This result implies that insuring accurate information about mental illness and treatment resources is critical to facilitate mental health care for those in need. When translating this finding into practice, professionals who work with people at greater risk for mental illness should pay attention to their clients' mental health knowledge and beliefs. After screening mental health literacy of clients, when needed, they should be able to provide clients with resources for mental health education. In addition, this study found that social support encouraging mental health services is positively related to

attitudes toward mental health help-seeking. Supporting others to seek mental health services is likely to be related to knowledge and beliefs about mental illness (Jung, in progress; King, Vidourek, & Strader, 2008) as well as stigma (Vidourek, King, Nabors, Lynch, & Merianos, 2014). This adds further support for expanding mental health education to not only those who are at risk for mental illness but to the general public who likely influence help-seeking of those with mental illness (Jorm, 2012; Stiffman, Pescosolido, & Cabassa, 2004). There are various types of mental health literacy interventions (e.g., Mental Health First Aid training, Crisis Intervention Team training, In Our Own Voice); evaluation studies report the positive impact of mental health education in increasing knowledge, reducing stigma, and facilitating helping others with mental illness (Jorm & Kitchener, 2011; Kitchener & Jorm, 2002, 2004, 2006; Mendenhall, Jackson, and Hase, 2013; Morawska, Fletcher, Pope, Heathwood, Anderson, & McAuliffe, 2013; Ritter, Teller, Munetz, & Bonfine, 2010; Teller, Munetz, Gil, & Ritter, 2006; Watson et al., 2010; Pinto-Foltz et al., 2011; Wood & Wahl, 2006). Policy makers should pay careful attention to allocating mental health expenditures to support community-wide mental health education.

Despite the potential contribution that the present study makes to mental health field, a number of limitations should be noted. First, although previous literature suggests attitudes toward mental health help-seeking is a predictor for actual help-seeking (Fischer & Farina, 1995; ten Have et al., 2010), this study did not measure the participants' actual help-seeking. Future study should include an actual help-seeking behavior measure to

fully explain whether mental health literacy, stigma, and social support are predictors for actual mental health help-seeking behavior. Second, two main constructs (i.e., social support and self-stigma) were measured with a single item. It is not warranted that the single item encompasses the full meaning of these two constructs. Future study should consider using more items to enhance validity of these constructs. Third, although this study made an effort to explain causal relationships among mental health literacy, stigma, social support, and attitudes toward mental health help-seeking, the study used cross-sectional data. The causation of the present study should be interpreted with caution. Future study might replicate the current study with longitudinal research. Fourth, the sample size used in the current study is close to the conventionally acceptable range (e.g., 200; Kline, 2011) but is still small for structural equation modeling analysis. Future study would benefit from inclusion of a larger sample with more diverse demographic characteristics to validate the findings of the study and conduct advanced analysis such as comparing the current model with multiple groups.

In conclusion, the mental health field strives to find ways to promote mental health help-seeking, prevent any avoidable harm from untreated mental illness, and advocate mentally healthy lives of people. This study adds support for previous literature on the need for mental health education to facilitate help-seeking. Readily available mental health education would be a crucial step to improve mental health literacy, reduce stigma, strengthen social support encouraging mental health services, and ultimately

promote better attitudes toward mental health help-seeking and actual help-seeking behavior.

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Chapter 4: Measuring Mental Health Literacy and Confidence of Helping People with Mental Illness in Public Housing Settings: The Importance of Mental Health Literacy and Confidence in Public Housing Employees

Introduction

Having a safe and stable place to live is closely related to the maintenance of mental health and wellbeing (Cook, Black, Rabins, & German, 2000; Marmot, Friel, Bell, Houweling, & Taylor, 2008; Wright & Kloos, 2007). Multiple studies suggest that access to safe and stable housing by homeless people with mental health problems is likely to promote recovery in community settings, reduce institutionalization in the criminal justice system or inpatient psychiatric hospitals, and improve physical and mental health (Carpenter-Song, Hipolito, & Whitley, 2012; Greenberg, Korb, Cronon, & Anderson, 2013; Mares& Rosenheck, 2011; Patterson et al., 2013). Public housing is particularly important for individuals and families with lower income and/or disability who are exposed to major life stressors—risk factors for mental illness (Sareen, Afifi, McMillan, & Asmundson, 2011; U.S. Department of Housing and Urban Development [HUD], 2015). According to HUD (2015), over two million (2,065,726) residents were living in public housing as of February 28, 2015, with 2.2 average household size. The average annual household income for residents was $14,134, far below the 2014 federal poverty line for a household of two ($15,730; U.S. Department of Health & Human Services, 2014). The majority (66%) of public housing residents have extremely low income

(below 30% of median) (HUD, 2015) and are dependent on governmental programs for health and mental health care (Digenis-Bury, Brooks, Chen, Ostrem, & Horsburgh, 2008; HUD, 2015). Deinstitutionalization and an emphasis on community-based care have also forced the number of people with mental illness to live in community settings and compete for the limited units of affordable housing (Koyanagi, 2007). Consequently, public housing serves an increasingly larger number of people at greater risk for mental illness or in the process of recovery. It is unclear how prepared public housing authorities and their staff are to meet the multiple needs of residents with mental health problems.

Mental health issues in public housing.

Studies suggest that many public housing residents suffer from poor mental health status (Black, Rabins, German, McGuire, & Roca, 1997; Digenis-Bury et al., 2008; Gonyea & Bachman, 2008; Simning, van Wijngaarden, & Conwell, 2011). The National Center for Health in Public Housing (2012) reported that in 2010, 31% of patients receiving public housing primary care services had a diagnosis of depression and other mood disorders; and 16 % had anxiety disorders. The number of patient visits with depression and other mood disorders in the Public Housing Primary Care program increased by 60% from 2009 to 2013 (National Center for Health in Public Housing,n.d.). However, many public housing residents with mental health problems do not receive mental health services (Black et al., 1997; Simning et al., 2011). Untreated mental health problems in public housing are likely to result in behaviors that cause eviction and homelessness for very low income individuals and families (Crane & Warnes, 2000).

Little is known about factors associated with underutilization of mental health services by public housing residents. The help-seeking process in mental health involves a number of factors that potentially influence mental health service usage by public housing residents: income, accessibility of mental health services, stigma, social support, and mental health literacy (Corrigan, 2004; Jorm, 2012; U.S. Department of Health and Human Services, 1999, 2001). Of these multiple factors, this study focuses on mental health literacy among public housing employees and their confidence in helping someone with mental illness. Public housing employees are in frequent contact with residents, and, as such, need to be able to recognize some symptoms of mental illness, and possess knowledge and confidence about sources of referral for services to promote mental health of public housing residents.

Confidence in helping someone with mental illness, mental health literacy, and stigma.

Mental health research often focuses on the prevalence and incidence of mental illness and service utilization or factors associated with help-seeking or service utilization; yet, few contemporary studies have paid attention to the importance of the confidence of non-mental health professionals in helping individuals with mental illness. Non-mental health professionals may have numerous opportunities to interact with a person with mental illness in the community but may lack confidence in their ability to recognize the symptoms of mental illness or when or how to make appropriate referrals to community resources (Stiffman, Pescosolido, & Cabassa, 2004). Despite limited literature, research

has demonstrated a relationship of mental health literacy to confidence in helping others. For example, as individuals are exposed to mental health education, there are increases in their knowledge about mental illness as well as improvements in their beliefs about and attitudes toward mental health services (Jorm & Kitchener, 2011; Kitchener & Jorm, 2002, 2004; Mendenhall, Jackson, and Hase, 2013; Wahl, Susin, Kaplan, Lax, & Zatina, 2011). Additionally, there are reductions in stigma and increased confidence in providing help to others (Jorm & Kitchener, 2011; Kitchener & Jorm, 2002, 2004, 2006; Morawska et al., 2013; O'Reilly, Bell, Kelly, & Chen, 2011).

There are also other studies that suggest significant relationships between stigma and confidence or willingness to help others. People who have less stigmatizing beliefs about or attitudes toward mental illness showed higher levels of confidence or willingness to help others with mental health problems (Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Vidourek, King, Nabors, Lynch, & Merianos, 2014; Watson et al., 2010). Vidourek et al. (2014) found that college students with lower levels of stigma had higher levels of confidence in helping a friend with mental health problems.

The present study.

A review of the literature identified a number of mental health issues and conditions in public housing that need further investigation. For example, as prospective first responders, public housing employees have an important role in recovery and maintenance of mental health of public housing residents. Mental health literacy and confidence of public housing staff in helping others with mental illness seems critical to

identify residents with mental illness and connect them to mental health services in a timely manner. Yet, little information is reported in this area.

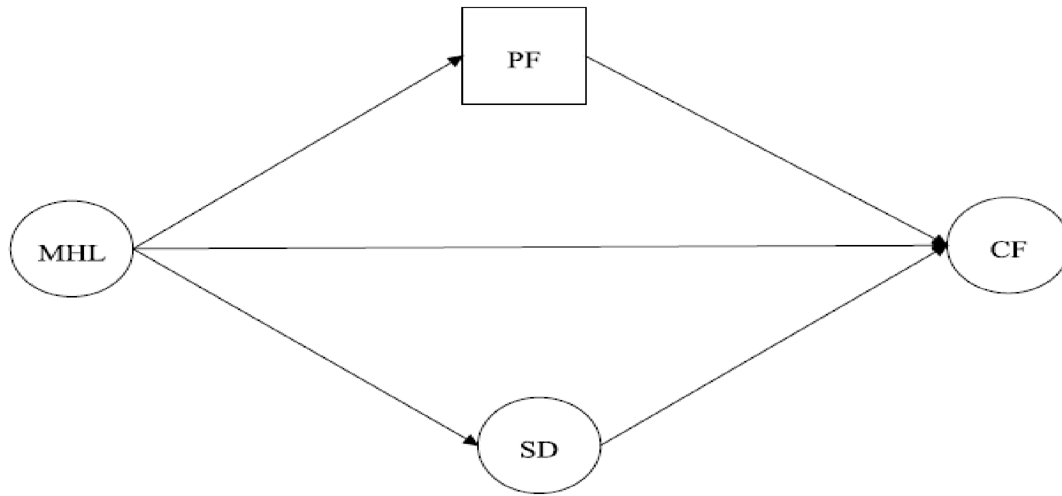
Two theories—social determinants of health and gateway provider model—guided the present study. The social determinants of health posits that a person's health is shaped by the environment where the individual lives and improving social or physical environment is critical to healthy lives (Marmot et al., 2008). This theoretical assumption supports the need to examine mental health issues in public housing where vulnerable people for mental illness live. The gateway provider model highlights the importance of mental health knowledge among non-mental health professionals to help people with mental illness receive appropriate treatment (Stiffman et al., 2004). This model guides the hypothesis in the current study that mental health literacy of public housing employees influences their confidence in helping others with mental illness.

Guided by these theoretical assumptions, this study examined mental health literacy and confidence of public housing employees and developed a model explaining the way in which mental health literacy predicts confidence in helping others with mental illness. Current literature suggests that mental health literacy is associated with stigma and confidence (Jorm & Kitchener, 2011; Kitchener & Jorm, 2002, 2004, 2006; Morawska et al., 2013; O'Reilly et al., 2011) and that stigma is associated with confidence (Corrigan et al., 2003; Vidourek et al., 2014; Watson et al., 2010). Additionally, the present study included a concept of perceived familiarity with mental illness. The difference between mental health literacy and perceived familiarity with

mental illness is that mental health literacy represents *objective knowledge* tested by a measure (Brucks, 1985). Perceived familiarity with mental illness mirrors self-reported *perceived or subjective knowledge* (Brucks, 1985). Although mental health research hardly examines these two concepts together, research in other disciplinary areas (e.g., health, business, or marketing ; Aertsens, Mondelaers, Verbeke, Buysse, & Huylenbroeck, 2010; Nunes et al., 2011) indicates that objective knowledge and perceived/subjective knowledge have different impact on a person's behavior and decision- making (Radecki & Jaccard, 1995). Moreover, studies suggest that objective knowledge influences perceived knowledge (Aertsens et al., 2010; Radecki & Jaccard, 1995).

Taking all these together, the present study examined relationships among mental health literacy (MHL), perceived familiarity with mental illness (perceived familiarity), stigma measured by social distance from a person with mental illness, and confidence in helping someone with mental illness (confidence) among public housing staff. The study hypothesized that there is a direct relationship between mental health literacy and confidence; and perceived familiarity and stigma mediate the relationship between mental health literacy and confidence. The hypothesized model is presented in Figure 4.1.

Figure 4.1. Hypothesized Model



Note. MHL=Mental health literacy; PF=Perceived familiarity with mental illness; SD=Social distance; CF= Confidence in helping someone with mental illness

Methods

Data source & sample.

The present study included a sample of 205 respondents drawn from a mental health literacy survey conducted in 2013. Eligible participants were employees at a local public housing authority in Texas. Information about the research and solicitation of survey participation were announced via e-mail and on-site advertisement within the housing agency. Study participants were asked to complete a survey questionnaire online (Qualtrics) or on paper including a multicomponent mental health literacy measure (Jung, in progress); a social distance scale (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999); four items measuring confidence in helping someone with mental illness, a single item measuring perceived familiarity with mental illness; and demographic

characteristics. The survey questionnaire was available in English and Spanish. The research was approved by the Institutional Review Board at The University of Texas at Austin.

Of 230 survey participants, 23 cases had missing data. No significant differences in demographic characteristics were found between missing cases and non-missing cases. In addition, a data quality check identified two cases with a repeated pattern of endorsing the same response option throughout a multicomponent mental health literacy measure. A total of 25 cases were excluded from the data analysis. Of the sample included in this study, a majority of participants were female (67.80%) and Hispanic/Latino (65.85%). Demographic characteristics of participants are presented in Table 4.1.

Table 4.1. Demographic Characteristics of the Sample (*N* = 205)

	Mean (M)	**Standard deviation (SD)**	**Range**
Age	44.54	10.67	22-64
	Frequency (n)	**%**	
Gender			
Male	66	32.20	
Female	139	67.80	
Race			
African Americans/Black	28	13.66	
Hispanics/Latino	135	65.85	
White	26	12.68	
Others	16	7.80	
Education			
Under 12th grade	2	.98	
High School/GED	34	16.59	
Trade or technical school	7	3.41	
Some college	69	33.66	
Associate's Degree	21	10.24	
Bachelor's Degree	51	24.88	
Master's or higher degree	21	10.24	
Income			
Less than $15,000	6	2.93	
$15,000 to $29,999	54	26.34	
$30,000 to $49,999	72	35.12	
$50,000 or more	73	35.61	

Measures.

Mental health literacy.

A multicomponent mental health literacy measure was developed as a part of the research project measuring mental health literacy of public housing employees. This 26-item instrument assesses beliefs and knowledge about mental illness symptoms, cause/risk factors, treatment, and mental health resources. Psychometric analyses confirm its' validity and reliability. Detailed psychometric properties about this measure are available elsewhere (Jung, in progress). The total scores range from 0 to 26.

Stigma.

Stigma was assessed by a revised four-item Social Distance scale (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). The Social Distance scale has been used in multiple studies to measure stigma. Four items examine a person's willingness to interact with someone with mental illness. Responding scale is a five-point Likert scale (strongly disagree coded as 1 to strongly agree coded as 5) and the total scores range from 4 to 20. Higher scores suggest less social distance from a person with mental illness, which indicates lower stigma. The reliability coefficient for this sample was .84.

Confidence in helping someone with mental illness.

Four items measuring confidence in helping someone with mental illness were newly developed. Measuring confidence originated from a study by Kitchener and Jorm (2002) asking "How confident do you feel in helping someone with a mental health problem?" The mental health literacy survey expanded this single item to four items.

Four items with a five-point Likert scale (Not at all coded as 1, a little, moderately, very, and extremely coded as 5) included: "How confident are you in helping a person with a mental illness to find mental health information?" "How confident are you in giving advice to a person to seek mental health services if he or she shows symptoms of a mental illness?" "How confident are you in assisting a person with a mental illness to meet with mental health professionals?" and "How confident are you in talking to a family member of a person with a mental illness about his or her mental illness?" The total scores range from 4 to 20.

Perceived familiarity with mental illness.

Perceived familiarity with mental illness was measured by one item "How familiar are you with mental illness?" Responding scale was a five-point Likert scale: Not at all (coded as 1), a little, moderately, very, and extremely (coded as 5). The total scores range from 1 to 5.

Data Analysis.

The present study first ran a confirmatory factor analysis to examine the structure of the confidence measure. Second, bivariate relationships between confidence and other independent (i.e., mental health literacy), mediating (i.e., perceived familiarity and stigma), and demographic variables (i.e., age, gender, race/ethnicity, education, and income) were examined. Then, structural equation modeling analysis using MPlus default estimation—*weighted least squares* means and variance adjusted (*WLSMV*)—was conducted to examine the way in which mental health literacy influences confidence as

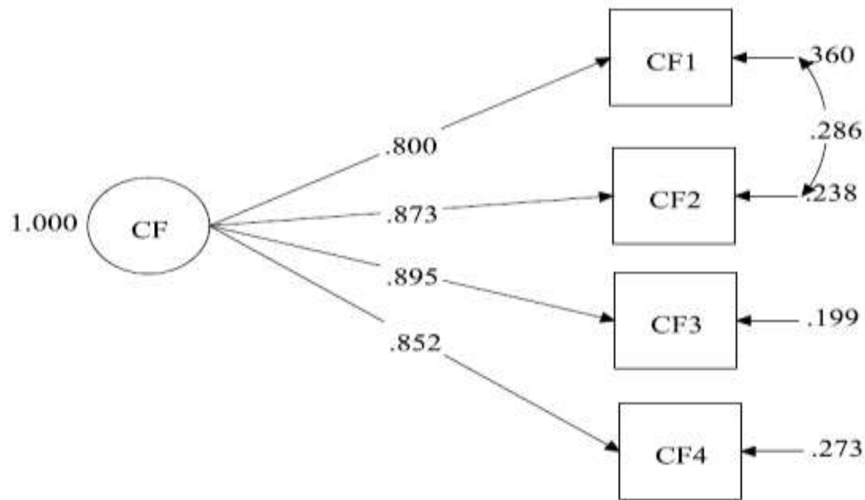
hypothesized in the initial model. MPlus 7 (Muthén & Muthén, 1998-2012) was used for confirmatory factor analysis and structural equation modeling analysis. Stata 12 (Stata Corp, College Station, TX, 2011) was conducted to analyze other descriptive statistics.

Results

Measurement model.

Initial confirmatory factor analysis yielded mixed results. While most fit indexes suggested that the measurement model fit the data well, root mean square error of approximation (RMSEA) indicated poor model fit: χ^2 (2, *N* = 205) = 7.28, *p* = .03; RMSEA = .11 (.03 - .21); CFI = .99; and TLI = .97. Factor loadings were all significant at p <.001 and ranged from .84 to .90. Through further examination of confidence items, error covariance between items 1 and 2 was allowed to be freely estimated because both items include one's confidence in verbal communication about mental health information. The final measurement model indicated a good model fit: χ^2 (1, *N* = 205) = .001, *p* = .97; RMSEA = .00 (.00 - .00); CFI = 1.00; and TLI = 1.01. Factor loadings ranged from .80 to .90 (Figure 4.2). The reliability coefficient was .92.

Figure 4.2. Confidence in Helping Someone with Mental Illness Measurement Model



Note. CF= Confidence in helping someone with mental illness

Descriptive statistics.

The average score of mental health literacy was 19.18 (*SD* = 4.87) and confidence was 11.40 (*SD* = 4.00). Results from bivariate correlation analyses, independent sample t-test, and analysis of variance (ANOVA) indicated that none of demographic variables were significantly related to confidence (data not shown). However, bivariate correlation analyses of latent variables found that mental health literacy, perceived familiarity, and stigma were significantly associated with confidence at .05 significance level. All latent variables were significantly associated with one another at <.001 level. Perceived familiarity was highly correlated with confidence (r = .55) and mental health literacy (r =

.50). The results of descriptive statistics and correlation analyses among latent variables were presented in Table 4.2 and 4.3.

Table 4.2. Descriptive Statistics of Latent Variables

	Mean (M)	**Standard deviation (SD)**	**Range**
Mental Health Literacy	19.18	4.87	3-26
Confidence	11.40	4.00	4-20
Perceived Familiarity	2.81	1.01	1-5
Social Distance	14.97	2.65	4-20

Table 4.3. Bivariate Relationships of Latent Variables

	Confidence	**Mental Health Literacy**	**Social Distance**	**Perceived Familiarity**
Confidence	1			
Mental Health Literacy	$.388^{***}$	1		
Social Distance	$.322^{***}$	$.375^{***}$	1	
Perceived Familiarity	$.553^{***}$	$.499^{***}$	$.365^{***}$	1

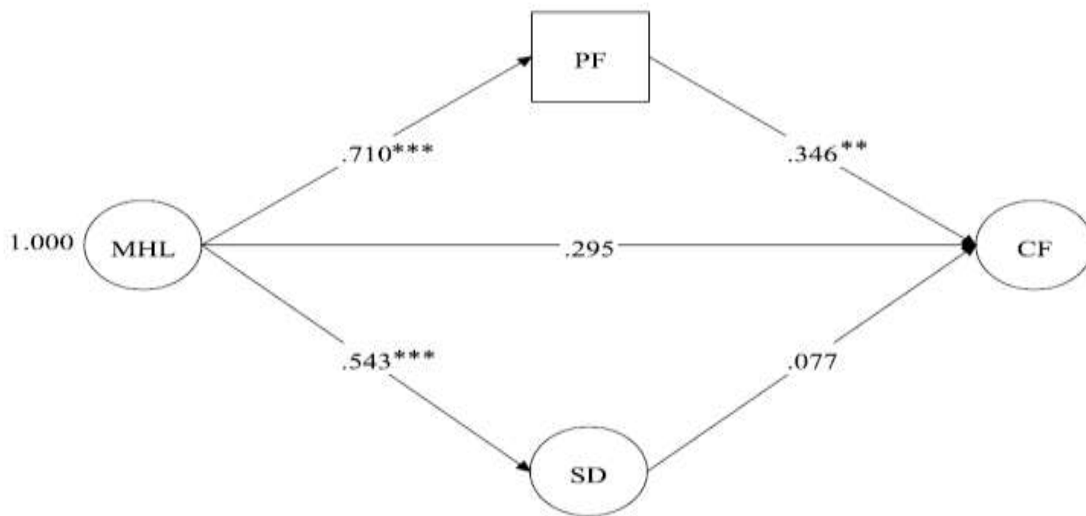
Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Structural model.

The results of SEM (χ^2 (552, N = 205) = 644.17, p = <.01; RMSEA = .03 (.02 - .04); CFI = .95; and TLI = .95) suggested that the data fit the hypothesized model well. Overall, the relationship between mental health literacy and confidence was fully mediated by perceived familiarity. Mental health literacy was positively related to confidence but the relationship was not statistically significant (β = .30, p = .06). Mental health literacy significantly predicted perceived familiarity (β = .71, p < .001) and stigma

(β =.54, $p < .001$). Hypothesized mediation effects were only demonstrated with perceived familiarity. Perceived familiarity was positively associated with confidence (β = .35, p = < .01). Social distance had no statistically significant relationship with confidence (β = .08, $p = .37$). The final model with standardized coefficients was presented in Figure 4.3.

Figure 4.3. Structural Model



Note. MHL=Mental health literacy; PF=Perceived familiarity with mental illness; SD=Social distance; CF= Confidence in helping someone with mental illness
* $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

The present study assessed mental health literacy and confidence in helping someone with mental illness among public housing employees and explored the way in which mental health literacy influences confidence. The findings suggest that mental health literacy does not directly influence confidence. Instead, it positively influences perceived familiarity with mental illness, which in turn improves confidence in helping a

person with mental illness. As hypothesized, mental health literacy positively predicted perceived familiarity and stigma. The more knowledge people have about mental health, the more they feel familiar with mental illness. Those with higher mental health literacy are likely to have lower stigma towards people with mental illness and are more willing to interact with people with mental illness. However, contrary to the hypothesis, lower stigma had no statistically significant relationships with confidence.

Some of these findings are congruent with existing literature; others are worth further research and discussion. Current mental health studies report a direct relationship between mental health literacy and confidence (Morawska et al., 2013; O'Reilly et al., 2011). These studies did not account for perceived familiarity. The present study adds information to current literature that mental health literacy has a role in confidence but it is through influencing perceived familiarity. The result sheds light on different role of objective (i.e., mental health literacy) and perceived knowledge (i.e., perceived familiarity) on confidence. This finding is in line with literature claiming that the effect of perceived and objective knowledge differs in a person's behavior or decision- making (Aertsens et al., 2010; House et al., 2004; Nunes et al., 2011; Radecki & Jaccard, 1995). Studies report that perceived knowledge is a stronger predictor for a person's behavior or decision-making compared to objective knowledge (House et al., 2004; Radecki & Jaccard, 1995). For example, Aertsens et al. (2010) found that people's subjective knowledge is more likely to influence organic food consumption than objective knowledge. This study also found that objective knowledge about organic food influences

subjective knowledge; and subjective knowledge is associated with positive attitude toward organic food consumption. The results suggest need for incorporating a person's perceived familiarity with mental illness in future study.

Similar to findings from other mental health literacy research (e.g., Kitchener & Jorm, 2002; Morawska et al., 2013; O'Reilly et al., 2011), mental health literacy was related to stigma. The more public housing employees had knowledge about mental health, the less they had stigma towards people with mental illness. However, contrary to hypothesis and previous literature, stigma was not related to confidence. One explanation could be that the present study included mental health literacy, perceived familiarity, and stigma in one model and examined their effects on confidence. Previous research examined the relationship between stigma and confidence without accounting for the other variables. Our results might suggest that it could be the perceived familiarity that has a stronger impact on confidence in helping others, rather than stigma. The concept of confidence has a self-evaluative nature of one's own ability (Gist & Mitchell, 1992). Hence, it is plausible that despite higher mental health literacy and lower stigma, a person could feel less confident about helping others with mental health problems if the individual feels unfamiliar with mental illness. Replication of this model with a larger sample seems necessary to validate this explanation. This finding still highlights the important role of mental health literacy.

The findings of the present study should be interpreted with caution. First, the study built a causal model based on previous literature and tested with structural equation

modeling; however, the data was collected from a cross-sectional survey. The causal relationships among variables should be understood with caution and further research should replicate the model with longitudinal data. Second, the data was collected only from a single public housing authority in Texas; therefore, generalization of the findings is limited. Although the participants represented various demographic characteristics in age and education, the sample was mostly female and Hispanic/Latino in Texas. Future research with more diverse populations and in different regions and settings such as schools and social service organizations is recommended. Last, the study assessed the way in which a person feels confident in helping someone with mental illness. It is unknown how much the confidence indeed influences actual helping others in real world. It is worth investigating how confidence predicts actual helping others with mental illness in future research.

Despite aforementioned limitations, this study is one of few studies examining the role of mental health literacy on confidence in helping someone with mental illness among public housing staff. The findings have implications in mental health research, practice, and policy areas. First, it is worth noting that mental health research tends to focus on people with mental illness and mental health professionals in health or mental health care settings and a few theories are used to guide mental health research that involves non-mental health professionals. The social determinants of health and the gateway provider model are unique in that both theories support the need to address mental health care from where people live and to involve multiple constituencies beyond

mental health care sectors to promote mental health ((Marmot et al., 2008; Stiffman et al., 2004). Yet, limited mental health research studies apply these theories and there is a lack of empirical evidence to confirm the utility of the theories. This study cannot conclude that addressing mental health issues from where people live will improve mental health and mental health literacy of non-mental health professionals will result in improved mental health care. However, the social determinants of health provided useful guidance to approach mental health research from community settings as a way to address mental health issues. The findings provide potential evidence in congruence with the gateway provider model that a high level of mental health literacy of non-mental health professionals could impact mental health care as they feel more confident in helping people with mental illness. A few studies applying the gateway provider model indicated similar findings that knowledge of mental health resources of gateway providers is related to referring of youths with mental health problems to mental health services (Carise & Gûrel, 2003; Stiffman et al., 2000). Future research might further explore the applicability of the social determinants of health and the gateway provider model to mental health research by taking qualitative and/or quantitative approach to examine the impact of addressing mental health literacy in community settings on actual mental health of people with mental illness.

Second, this study highlights the importance of mental health education with non-mental health professionals. Although this study focuses on public housing staff, many non-mental health professionals such as employees in social service organizations or

school settings interact with people at risk for mental health problems (Gonyea & Backman, 2008; Stiffman, Pescosolido, & Cabassa, 2004). Their recognition of mental health problems and ability to intervene in the early stage is critical (Kelly, Jorm, Wright, 2007). In order to improve their mental health literacy and confidence, mental health education is necessary. Previous literature reports that mental health literacy education can improve mental health knowledge of training recipients (Jorm & Kitchener, 2011; King, Vidourek, & Strader, 2008; Morawska et al., 2013; Vidourek et al., 2014). For instance, police officers who received CIT training demonstrated improved ability to recognize mental illness, had more positive attitudes toward mental illness and treatment, and engaged in referring suspected mentally ill to mental health treatment (Ritter, Teller, Munetz, & Bonfine, 2010; Teller, Munetz, Gil, & Ritter, 2006; Watson et al., 2010). Hence, it is important to implement policy and practice that provide mental health education to non-mental health professionals.

Third, collaboration between public housing and the mental health care system is needed. The present study does not claim that public housing employees should be able to offer mental health services. Rather, it emphasizes public housing employees' ability to connect those with mental health problems to mental health services. This requires a collaborative partnership between public housing and the local mental health center. Collaboration could involve mental health education to public housing staff by a local mental health center or participation of the local mental health center in mental health screening of public housing residents and mental health service provision for those in

need. Collaborative effort between public housing and mental health care system would facilitate early intervention, prevent eviction and homelessness, and promote mental health of public housing residents (Crane & Warnes, 2000; Meehan, Drake, Bergen, Gillespie, & Sondergeld, 2002).

Finally, there should be more research paying attention to mental health issues in public housing settings. People's health and mental health is shaped by where they live (Marmot et al., 2008). Supportive and permanent housing is critical in person's mental health, particularly those suffering from adverse life circumstances such as poverty or disability. Yet, little is known about the nationwide prevalence of mental health status or barriers to mental health service use among public housing residents. Therefore, more research concerning mental health in public housing and supporting stability of people in public housing is needed.

Given the high prevalence of mental health problems in the U.S. (Kessler et al., 2005), many people are likely to interact with potential mental health consumers in daily lives. Particularly people who serve those with greater risk for mental illness have a role in mental health care when they are able to recognize mental illness and help those receive adequate mental health services in an early stage. The present study underscores the importance of mental health education with non-mental health professionals. The more people know about mental health, the better people are likely to help someone with mental health problems and promote healthy lives in community.

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Chapter 5: Discussion

This three article dissertation aims to advance current knowledge by focusing on three related gaps in mental health care: the absence of a comprehensive mental health literacy measure, research about mental health literacy in the U.S., and knowledge of how to promote mental health in public housing settings. Available studies report that mental health literacy is associated with access to mental health care, reduction of stigma, and confidence in helping others with mental illness (Kitchener & Jorm, 2004; Jorm, 2012; Rusch, Evans-Lacko, Henderson, Flach, & Thornicroft, 2011; Wright et al., 2007). However, there are limitations in current mental health literacy literature. First, there is an absence of a mental health literacy measure that represents the multiple components in the definition of mental health literacy. This limits a full understanding of mental health literacy and its impact on mental health care. Second, many mental health literacy research studies have been conducted outside of the U.S. (e.g., Kitchener & Jorm, 2002, 2004; Lam, Jorm, & Wong, 2010;Wang & Lai, 2008). Their findings might not be generalizable to the U.S. populations who live in different social, political, and cultural environments. Empirical evidence of the way in which mental health literacy influences mental health care in the U.S. is needed. Finally, despite the number of public housing residents experiencing mental illness and remaining untreated, limited literature is available about mental health in public housing settings. Housing is important for mental health of people (Cook, Black, Rabins, & German, 2000; Marmot, Friel, Bell, Houweling, & Taylor, 2008; Wright & Kloos, 2007). Stable and safe housing is

particularly essential for individuals and families who are exposed to major life stressors (e.g., poverty or disabilities), such as public housing residents. Untreated mental illness or delayed mental health care can lead to evictions of public housing residents and result in homelessness (Crane & Warnes, 2000). Yet, little is known about ways to promote mental health in public housing settings as a means of reducing the risk of eviction and increasing quality of life.

This dissertation involves three distinct research steps to address the gaps in current knowledge: developing a mental health literacy measure that reflects multiple components of mental health literacy (article I); examining the role of mental health literacy in attitudes toward mental health help-seeking among public housing employees (article II); and, exploring the relationship of mental health literacy and confidence in helping others with mental illness among public housing employees (article III). The selection of public housing employees for the study is supported by the theories and literature identifying that social support is important in mental health care and that people are likely to go through informal resources before they seek mental health professionals (Cabassa & Zayas, 2007; Kim, Sherman, Ko, & Taylor, 2006; Gabriel & Violato, 2010; Woodward et al., 2008). Public housing employees can be gateway providers to help public housing residents receive mental health care if they have knowledge and skills to help public housing residents with mental illness (Stiffman, Pescosolido, & Cabassa, 2004). It is critical to understand the level of mental health literacy and confidence in helping others with mental illness among public housing employees. Given anyone can

experience mental illness or mental health problems, public housing employees are potential mental health consumers as well; therefore, their mental health literacy might influence their own help-seeking. By examining public housing employees' mental health literacy, attitudes toward mental health help-seeking, and confidence in helping others with mental illness, this dissertation endeavors to add new knowledge about mental health literacy measure and empirical evidences about the roles of mental health literacy in mental health help-seeking and assisting others with mental illness.

Summary of Three Articles

Mental health literacy is the primary focus of the three articles in this dissertation; yet, the purpose of each article is distinct. More specifically, the first article described the development and validation of a multicomponent mental health literacy measure. The second and third articles assessed the impact of mental health literacy on mental health care; but, the outcome variables are different. The second article examined the way in which mental health literacy predicts individuals' own help-seeking attitudes; the third article sought to find the way in which mental health literacy influences individuals' confidence in helping other people with mental illness.

Data used in the three articles was collected from a survey of employees in a large public housing authority in Texas. The first article explained the process of developing a multicomponent mental health literacy measure and testing its reliability and validity. Different analytic approaches were employed to validate the measure, including content validity, known groups validity, convergent validity, and construct validity. The results of

data analyses found that 26 items of a multicomponent mental health literacy measure represent three dimensions: knowledge-oriented mental health literacy; beliefs-oriented mental health literacy; and resource-oriented mental health literacy. The second order factor mental health literacy measure demonstrated good reliability and validity. The second article used structural equation modeling and examined the relationship between mental health literacy and attitudes toward mental health help-seeking while accounting for roles of two types of stigma and social support. The results suggest that mental health literacy, self-stigma, and social support are associated with attitudes toward mental health help-seeking. The third article determined the way in which mental health literacy influences confidence in helping others with mental illness by accounting for the role of stigma and perceived familiarity with mental illness. Although the study did not find a direct relationship between mental health literacy and confidence, perceived familiarity mediates the relationship between mental health literacy and confidence.

The three articles contribute to advancing current knowledge in mental health literacy and mental health care by introducing a reliable and valid mental health literacy measure and adding empirical evidence about the impact of mental health literacy on mental health care. The newly developed measure includes multiple components of knowledge and beliefs about mental health and is found reliable and valid. In addition to case vignettes, this multicomponent mental health literacy measure may have utility for future research that evaluates people's knowledge and beliefs about mental health in multiple areas. Given the validity and reliability confirmed by the data collected from

non-mental health professionals, application of this measure to other non-mental health professionals or lay community people seems plausible. In addition, the results of the second and third articles suggest that a high level of mental health literacy contributes to increased perceived familiarity with mental illness and subsequently higher confidence in helping others with mental illness. Those with higher mental health literacy are likely to have favorable attitudes toward mental health help-seeking. These findings suggest that improving knowledge and beliefs about mental illness symptoms, cause/risk factors, mental health treatment, and resources is potentially critical to promote mental health care. These results correspond to the literature that emphasizes the need for community-wide mental health education (Jorm & Kitchener 2011; Jorm, 2012; Mendenhall, Jackson, & Hase, 2013; Morawska et al 2013; Watson et al 2010). In order to prevent delayed help-seeking or untreated mental illness, it seems critical to provide mental health education to lay people in communities even if they have no current mental illness or they are non-mental health professionals. Possession of accurate knowledge about mental illness and treatment resources might produce favorable help-seeking attitudes and willingness to seek mental health services. Moreover, people might be more capable of helping others with mental illness. Public housing employees are potential gateway providers of mental health care. The mental health literacy and confidence of public housing employees' are likely related to mental health care of public housing residents who are vulnerable to mental health problems or are in recovery from mental illness. Mental health education might be one approach to improve mental health literacy and

ability of public housing employees to help the increasing numbers of individuals with mental health problems or mental illness who reside in public housing.

Limitations

This dissertation has several limitations that require careful interpretation of the findings. First, the data was collected from one local public housing authority and a majority of survey participants were female and Hispanic/Latino. Approximately half of participants had exposure to mental health treatment for self or close relatives. It is uncertain if the findings remain the same in different locations or populations. For example, the way in which mental health literacy explains attitudes toward mental health help-seeking and confidence in helping others might differ by males, other racial or ethnic groups, and people who have no previous experience with mental health treatment. In addition, this dissertation did not have a larger or diverse sample; and, this limitation restricts confirming the utility of the measure across diverse populations. Hence, generalization of findings is limited. Second, the second and third articles ran structural equation modeling analyses that are purported to assess causal relationships among variables (Kline, 2011). This dissertation built hypothesized models based on theory and/or previous literature; however, it should be noted that the data was cross-sectional and establishing causal relationships of variables is limited. Third, this dissertation employed multiple approaches to confirm the validity of the multicomponent mental health literacy measure but it was not tested against case vignettes, the most frequently used method in current mental health literacy research. Case vignettes are useful to

examine whether a person recognizes mental health issues in a case describing mental illness. It is unknown whether those with high scores in the multicomponent mental health literacy measure are also able to recognize mental health issues in case vignettes. Using both measures to confirm validity of the newly developed measure may be helpful. Fourth, the data was collected by self-reported survey. Due to sensitivity of revealing personal knowledge, beliefs, and stigma around mental illness, survey participants might not be fully forthcoming and there might be social desirability bias involved in completing surveys. Finally, the outcome variables of the second and third articles are considered proxies for actual help-seeking and helping others with mental illness. However, it is not guaranteed that their attitudes and confidence will result in actual behaviors.

Implications for Future Research

Generalization of the findings from this dissertation to a broader context requires caution. However, the findings may lay the groundwork for future research. For example, the first article introduces a reliable and valid tool to measure multiple aspects of mental health literacy. This tool can be applied to multiple groups of non-mental health professionals who interact with people at risk for mental illness. Similar to public housing employees, mental health literacy and confidence of other non-mental health professionals are likely to influence their assisting others with mental illness (Carise & Gûrel, 2003; Stiffman et al., 2000, 2004). It might be beneficial for future research to apply this measure in different regions or populations, replicate similar studies, and

provide additional support for mental health education in various community settings. Moreover, future research may recruit a sample of larger and diverse characteristics and examine the way in which mental health literacy influences attitudes toward mental health help-seeking across multiple groups. Available literature reports disparities in mental health service utilization among racial or ethnic minority groups in the U.S (Alegria et al., 2008; Gonzalez et al., 2010; Neighbors et al., 2007). It would be helpful to investigate the level of mental health literacy in diverse racial or ethnic minority groups and their attitudes toward mental health help-seeking. This information might contribute to estimate the needs for mental health education and provide appropriate level of mental health education to facilitate mental health care of minority populations.

Little is known whether factors identified in the literature as predictors for help-seeking and helping others with mental illness impact actual behaviors. Future research may endeavor to collect longitudinal data to examine full causal relationships among mental health literacy, attitudes toward mental health help-seeking, confidence in helping others with mental illness, and actual mental health service utilization and helping experiences.

Review of the literature reveals that despite potential mental health needs, there have been limited research reports on mental health issues in public housing settings. It would be critical to understand nationwide prevalence of mental health problems in public housing settings, identify needs and barriers to seeking mental health services among public housing residents, and find ways to promote their mental health care.

This dissertation upholds the need for mental health education in community settings. There are mental health education programs currently used in the community, such as mental health first aid training (Jorm & Kitchener, 2011). However, many of evaluative studies are conducted with student populations (e.g., Pinto-Foltz, Logsdon, & Myers, 2011; O'Reilly, Bell, Kelly, & Chen, 2011; Reavley, McCann, & Jorm, 2012; Wood & Wahl, 2006) and little research evaluates the effectiveness of mental health education programs with non-mental health professionals or in community settings including public housing or other social service organizations. It is unclear whether available mental health education tools would be beneficial for lay people or non-mental health professionals in public housing or similar community settings. Future study should consider evaluating the effectiveness of available mental health education to non-mental health professionals and identify efficient ways to educate non-mental health professionals and lay community people.

Implications for Practice and Policy

This dissertation provides several implications for social work practice and education as well as policy that warrant discussion. Social work practitioners work with clients who are vulnerable for mental illness, or are in some stage of a recovery process. Given that mental health literacy is related to attitudes toward mental health help-seeking, efforts to insure a high level of mental health literacy of clients might help them to seek mental health care when needed. It is important for social work practitioners to learn to apply a mental health literacy measure and identify the level of mental health literacy of

clients. Once social workers assess the clients' mental health literacy, they should be able to provide mental health education or refer the clients to increase their mental health literacy. In order to advocate for mental health education of clients, it is also necessary for social work practitioners to continue to increase their knowledge of mental health issues and resources. This may involve continuing education about mental health, such as learning about most current research studies on effective mental health treatment, helpful resources, or assessment tools that are applicable to their practice. Moreover, many social work practitioners work with non-mental health professionals who may not have adequate knowledge about mental illness. Social work practitioners are important resources for mental health education in these settings and may collaborate with non-mental health professionals to increase their knowledge about mental illness and demystify any incorrect or stigmatizing beliefs. Similarly, social work education should pay attention to prepare all students to be knowledgeable about mental health care and competent in working with clients with mental illness. This may involve providing students various class or field opportunities to learn about mental health from the early stage of the program and incorporating mental health components in various social work curriculums.

This dissertation highlights the important role of mental health literacy among non-mental health professionals in mental health care. Although this study focuses on public housing settings, there are numerous other non-mental health professionals who are potentially gateway providers and work with potential and actual mental health

consumers (Mendenhall et al., 2013; Stiffman et al., 2004). It is critical to educate them to be able to recognize mental health problems and refer their clients to mental health services in an early stage of illness. For example, there is increasing awareness about the role of pastors in mental health care, particularly with communities of color and the need for educating pastors about mental health (Neighbors, Musick, & Williams, 1998; Stanford & Philpott, 2011; Taylor, Ellison, Chatters, Levin, & Lincoln, 2000). Similarly, some police officers receive trainings that aid them to identify people with mental illness and refer those people to mental health care system, rather than detaining them in the criminal justice system (Ritter, Teller, Munetz, & Bonfine, 2010; Teller, Munetz, Gil, & Ritter, 2006; Watson et al., 2010). Along with findings from this dissertation, current literature supports community wide mental health education, particularly for those who may serve as gateway providers. Yet, despite emerging concerns about community wide mental health education, a majority of mental health expenditures target mental illness treatment, particularly using prescription drugs (Frank, Goldman, & McGuire, 2009), rather than mental health education. It is important to treat symptoms of mental illness; however, it is also as critical to support mental health education to facilitate early intervention and help-seeking in a timely manner. Hence, policy makers should consider allocating more funding to mental health education and training in the community settings.

Conclusion

Early intervention, use of mental health care when needed, and recovery from mental illness are imperative to promote mentally healthy lives. Despite ongoing discourse of the importance of mental health care, mental illness is a disease that is not fully understood. The absence of understanding, stigma, and incorrect beliefs leads to fear of seeking help or interacting with others with mental illness. This dissertation adds new information and empirical evidence to current literature and sheds light on the impact of mental health literacy on mental health care in public housing settings. Applying a newly developed mental health literacy measure, this dissertation found that mental health literacy in a public housing staff is a significant factor associated with not only attitudes toward mental health help-seeking for self but also confidence in helping others with mental illness. The findings call for attention to mental health literacy with various non-mental health professionals and reinforce the need for mental health education in community settings to facilitate mental health care. When more people are educated about mental health, it is possible to build supportive communities that people are willing to seek mental health care when needed and help others who experience mental illness.

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