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Factors Associated with Help-Seeking Behaviors Among Persons with Serious Psychological Distress

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Abstract

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MPH, University of Southern California, 2014

BA, University of California, Berkeley, 2012

Dissertation Submitted in Partial Fulfillment

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Abstract

Serious psychological distress (SPD) is an important individual and public health concern, but inconsistent results exist in the literature in terms of help-seeking behaviors and health-related outcomes among persons with SPD. The purpose of this study was to address this issue and understand clinical factors, access and quality of care factors, and sociodemographic factors associated with help-seeking behaviors among adults with SPD using the California Health Interview Survey (CHIS). CHIS data were collected in 2015 as a part of a two-year cycle (2015-2016) and surveyed 42,089 adults. For multivariable analyses, logistic regression analyses were performed. Participants with chronic health conditions had nearly twice the odds of having had a doctor visit compared to those who did not (adjusted odds ratio [aOR] 1.94, 95% confidence interval [CI] [1.08, 3.48], p = 0.03). Those with a general health condition had lower odds of delaying care (aOR 0.72, 95% CI [0.61, 0.84], $p < 0.001$). The odds of having a doctor visit among those who had issues with access to healthcare were 2.68 times higher than for those who did not (aOR 2.68, 95% CI [1.38, 5.19], $p < 0.004$). The odds of forgoing care among those who were not insured were 13% higher than for those that were insured (aOR 1.13, 95% CI [1.04, 1.24], $p < 0.005$). Females had lower odds than males in terms of delaying care (aOR 0.71, 95% CI [0.51, 0.99], $p = 0.04$). Compared to White Americans, Asians and African Americans had higher odds of forgoing care (aOR 4.34, 95% CI [1.48-12.76]; aOR 2.80, 95% CI [1.34, 5.86] respectively). To promote positive health outcomes and prevent disease, it is important to devise optimal intervention programs that incorporate factors associated with healthcare seeking decisions for adults with SPD.

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Dedication

To all who left their motherland to afford opportunities to become multi-cultural, multi-lingual and be better educated. The journey may have had many ups and downs, but your courage and bravery will be thanked by the generations to come. This is for you, appa and umma! Thank you for making that big leap.

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Chapter 1: Introduction to the Study

In this chapter, I provide an overview of my research. Although many studies have been conducted to compare help-seeking behaviors and health-related outcomes between those with and without serious psychological distress (SPD), there remains a lack of understanding regarding the factors associated with decisions to seek healthcare made by adults with SPD. SPD is an important individual and public health burden; however, researchers continue to find that a significant number of individuals do not seek professional help. Even though the number of individuals with SPD that receive mental health treatment has increased since the early 1990s, the majority of individuals with SPD remain untreated or undertreated (Krupski et al., 2016; Weissman et al., 2017; Ye et al., 2012).

Weissman et al. (2017) compared adults with SPD to adults without SPD with respect to healthcare access, use of healthcare services, and functional indicators. Adults with SPD were more than three times as likely as those without SPD to have insufficient money to buy medications and healthcare, and were more than twice as likely to experience delays in care compared to those without SPD (Weissman et al., 2017). Weissman et al. (2015) said adults with SPD were more likely to have worse health outcomes such as chronic obstructive pulmonary disease, heart disease, and diabetes compared to adults without SPD.

Supportive mental health treatment and targeting adverse health behaviors may be important mechanisms for reducing SPD; however, little is known about how to manage SPD in a way that would mitigate risks. Addressing these problems requires an understanding of both their magnitude and the role of clinical, access and quality of care, and sociodemographic factors so that targeted strategies can be developed to address barriers to quality healthcare and optimize use among those with SPD.

This chapter includes a brief background, research problem, and purpose of the study, research questions and hypotheses, the theoretical foundation, nature of the study with key study variables, and definitions, assumptions, scope and delimitation, limitations, and significance of my work.

Background

Mental illness is a major public health issue in the United States (U.S.). In 2017, approximately 46.6 million Americans over the age of 18 experienced some form of mental illness, with approximately 11.2 million adults having some form of a serious mental illness (Center for Behavioral Health Statistics and Quality [CBHSQ], 2017). SPD includes mental health problems that are severe enough to cause moderate-to-serious impairment that may impact a person's social life and daily functions, as well as require treatment (Mirowsky & Ross, 2002; Pratt, 2007).

Positive mental health and emotional well-being play an important role in a person's overall health status. Ridner (2004) defined SPD as "the unique discomforting, emotional state experienced by an individual in response to a specific stressors or demand that results in harm, either temporary or permanent, to the person" (p. 339). Only one-fifth of individuals with SPD received adequate treatment (Bramesfeld et al., 2007; Forman-Hoffman et al., 2014; Kessler et al., 2007; O'Campo et al., 2015; Olfson, 2018). There still is a lack of research regarding factors associated with decisions by adults with

SPD to seek healthcare. Stigma and fear of medical establishment negatively affected the use of health services, and SPD was positively associated with fear of having a serious illness and thoughts of mortality (Ye et al., 2012). Weissman et al. (2016) said feeling hopeless was associated with lower odds of visiting a healthcare provider in the previous 6 months.

These findings suggest that most people with SPD do not receive appropriate treatment. There is a lack of studies regarding clinical access and quality of care, as well as sociodemographic factors that may be related to help-seeking behaviors among adults with SPD. Targeting adverse health behaviors and supporting mental health treatment may be important mechanisms for reducing SPD, but there still exists a large gap with respect to managing SPD in a way that would mitigate risks. This knowledge is crucial to the development of effective psychological interventions for the population. Accurate information regarding adults with SPD who receive treatment can lead to identifying underserved populations and informing service planning. In order to promote positive health outcomes and prevent disease, it is important to devise optimal intervention programs that consider factors associated with decisions to seek healthcare among adults with SPD. Better understanding the impact of help-seeking behaviors among individuals with SPD and its association with clinical factors (physical and mental health status), access and quality of care factors (insurance and source of healthcare status), and sociodemographic factors (sex, race, age, marital status, education, economic status, and English proficiency) is essential for promoting positive health outcomes and preventing disease.

Problem Statement

SPD is an important individual and public health concern, but there is a lack of research on factors associated with decisions to seek healthcare among adults with SPD. Most importantly, inconsistent results exist in the literature in terms of help-seeking behaviors and health-related outcomes between those with and without SPD. Weissman et al. (2017) said adults with SPD were more than three times as likely as those without SPD to have insufficient money to buy medications and healthcare, and were more than twice as likely to experience delays in care compared to those without SPD. Garfield et al. (2011) said adults with SPD were more than twice as likely to have incomes under 133% of the federal poverty level. Pratt (2012) said adults with SPD were more likely to be poor, younger, less educated, and live alone. Leykin et al. (2017) said that even though there are a number of preventive and cost-effective treatments for SPD, over one third of individuals do not respond to treatments. Only 64.9% of adults with SPD and 40.8% of adults with any mental illness received mental health treatment services in the past year (CBHSQ, 2015).

Psychological distress is often conceptualized as unpleasant feelings or emotions that can adversely impact one’s level of function (CBHSQ, 2015). There are social, emotional, and economic costs associated with mental health problems. Economic costs of mental health problems to individuals and society include increased absenteeism from work, difficulties in retaining and maintaining employment, and increased costs of health and social services (Dismuke et al., 2011; Glanz et al., 2008; Schuurhuizen et al., 2015; Swartz & Jantz, 2014). Mental health problems affect not only individuals, but can also have an impact on family members and friends; untreated mental disorders can lead to personal distress, prolonged family burden, premature death, and preventable disability (Altamura et al., 2008; Dhingra et al., 2010). Limitations in terms of social and physical activities because of mental health problems can lead to social isolation and other problems. As a result, I seek to understand and examine the relationship between clinical, access and quality of care, and sociodemographic factors as well as help-seeking behaviors to understand how adults with SPD perceive their use of healthcare and seek help.

Purpose of the Study

My purpose is to investigate clinical, access and quality of care, and sociodemographic factors associated with help-seeking behaviors among adults with SPD using a quantitative non-experimental analytical approach with secondary data. The independent variables are clinical, access and quality of care, and sociodemographic factors. The dependent variables are help-seeking behaviors for SPD (doctor visits, forgoing care, and delay in care). I aim to provide evidence-informed recommendations regarding feasibility of help-seeking behaviors among individuals with SPD.

Research Questions and Hypotheses

My research questions and associated hypotheses where applicable were as follows:

RQ1: What are general help-seeking behaviors of individuals with SPD?

RQ2: Are clinical factors associated with help-seeking behaviors among individuals with SPD?

$H_{0}2$: Clinical factors are not significantly associated with help-seeking behaviors among individuals with SPD.

$H_{a}2$: Clinical factors are significantly associated with help-seeking behaviors among individuals with SPD.

RQ3: Are access and quality of care factors associated with help-seeking behaviors among individuals with SPD?

$H_{0}3$: Access and quality of care factors are not significantly associated with help-seeking behaviors among individuals with SPD.

$H_{a}3$: Access and quality of care factors are significantly associated with help-seeking behaviors among individuals with SPD.

RQ4: Are sociodemographic factors associated with help-seeking behaviors among individuals with SPD?

$H_{0}4$: Sociodemographic factors are not significantly associated with help-seeking behaviors among individuals with SPD.

$H_{a}4$: Sociodemographic factors are significantly associated with help-seeking behaviors among individuals with SPD.

Theoretical Framework of the Study

Determinants of the origins of specific phenomena must be understood in order to develop proper evidence-based interventions. The social ecological model (SEM) involves complex interplays between individual, relationship, community, and societal factors in terms of determining an individual's behavior and health (Carson, & Janssen, 2012; Glanz et al., 2008). In order to achieve substantial changes in health behaviors, it is fundamental that a combination of both individual level and environmental/policy-level interventions exist (Sallis et al., 2015). Based on these theoretical assumptions, the SEM is an appropriate fit for my research involving understanding the impact of help-seeking behaviors among individuals with SPD and its association with clinical, access and quality of care, and sociodemographic factors. As such, the SEM can also serve as a preventive model based on recognition of personal, environmental, social, and psychological factors that can facilitate the development of disease or health problems. In Chapter 2, I discuss the framework in greater detail.

Nature of the Study

To explore associations between clinical, access and quality of care, and sociodemographic factors and help-seeking behaviors among individuals with SPD, I used a quantitative approach that involved archived data from the California Health Interview Survey (CHIS).

I used data from CHIS, a random-digit telephone survey designed to be representative of California's noninstitutionalized population. CHIS 2015 data were collected as part of a two-year cycle (2015-2016) between May 2015 and December 2016. Approximately 50% of adult interviews were conducted with landline phone numbers and 50% with cell phones to reduce potential selection bias.

Definitions

The following terms are important to my work and may have multiple meanings. The definitions I used are :

Access and quality of care factors: The access and quality of care data include questions around insurance status and source of health care status.

Clinical factors: The clinical data include questions around physical health status and mental health status. Physical health status includes general health condition and chronic health conditions of respondents. Mental health status includes psychiatric/ emotional health conditions.

Help-seeking behavior: Communicating with others to obtain assistance in terms of understanding, advice, information, treatment, and general support in response to a problem or distressing experience (Mechanic, 2002).

Serious psychological distress (SPD): A mental condition that negatively impacts a person's ability to function in daily life (SAMHSA, 2013). It is "the unique discomforting, emotional state experience by an individual in response to a specific stressors or demand that results in harm, either temporarily or permanently, to the person" (Ridner, 2004, p. 339).

Sociodemographic factors: The sociodemographic data include questions around sex, race, age, marital status, education, economic status, and English proficiency.

Assumptions

My major assumption is individuals with SPD were likely to be experiencing economic decline, to be less educated, and to be more likely to experience a disproportionate share of the burden of poverty and economic loss. A better understanding of these factors may provide crucial information in terms of improving treatment and intervention programs for at-risk and vulnerable populations. Since I used a secondary analysis from an existing external data source, I also assumed that all data downloaded from CHIS were accurate and valid. CHIS is conducted by the UCLA Center for Health Policy Research in collaboration with the California Department of Public Health and the Department of Health Care Services. Because surveys are collected in all 58 in of California to protect and promote the health status of Californians, I assumed they were high quality data that accurately represented California household populations.

I also assumed that respondents answered questions truthfully and to the best of their knowledge. In order to address maximum response rates, CHIS sent an advanced letter in five languages to all landline sampled telephone numbers. For the random digit dialing (RDD) sample, advance letters were mailed to 36.5% of all fielded landline telephone numbers, and 40.7% of all fielded cell telephone numbers. To capture the rich diversity of the California population, interviews were conducted in five languages- English, Spanish, Chinese (Mandarin and Cantonese dialects), Vietnamese, and Korean.

Scope and Delimitations

The goal of the study is to explore clinical, access and quality of care, and sociodemographic factors associated with help-seeking behaviors among individuals with SPD. It is limited to adult respondents ages 18 and above who live in California, U.S. The external validity of the study is therefore limited to this target population. Surveys were conducted in all 58 counties in California; respondents were chosen at random and the sample is extensive enough to be statistically representative of California's diverse population.

Like all surveys, CHIS is prone to bias or error due to nonresponse. To assess this, during the 2007 CHIS, a special survey procedure was conducted in which telephone and in-person interviews were conducted. Estimates for 40 health-related indicators among respondents (who responded to initial requests to conduct the survey over the telephone) and nonrespondents (who only participated after an in-person recruitment visit) were compared and analyzed. Based on preliminary analysis of data from the 2007 CHIS area probability sample in Los Angeles, CHIS estimates did not demonstrate significant bias due to nonresponse.

Limitations

My work had some limitations. First, because CHIS is a cross-sectional survey, I could not address causality. Thus, there is a need for longitudinal research examining help-seeking behaviors among individuals with SPD. In addition, since this study involves a random-digit telephone survey in which data are self-reported, I might encounter problems involving response bias. A decline in response rates in many population-based surveys may increase the potential for nonresponse bias as well. Also, cellular telephones in households may introduce the potential for noncoverage bias which was addressed by taking approximately 50% of adult interviews from landline phone numbers and 50% from cell phones. Lastly, findings are only generalizable to residents of California and may not apply to persons from other states.

Significance

One of the goals for Healthy People 2030 is to improve access to comprehensive quality healthcare services by achieving health equity and increasing the quality of healthy lives (U.S. Department of Health and Human Services, 2021). My research will help to fill a gap in understanding by focusing on those with SPD considering medical complexities associated with psychological disease. Those with SPD tend to exhibit poorer patterns of healthcare use (Weissman et al., 2016). Relevant factors must be identified in order to reduce the public health burden of SPD, address disparities, and improve health outcomes. Insights from my study may improve quality of care and life for those living with SPD by studying factors that affect help-seeking behaviors and lead to social change in the form creation and utilization of holistic interventions intended to improve help-seeking behaviors among individuals with SPD.

Summary

Although many studies have been conducted to compare help-seeking behaviors and health-related outcomes between those with and without SPD, limited research has considered factors associated with decisions to seek healthcare among adults with SPD. According to Shin (2014), help-seeking behaviors are defined as behaviors to obtain various resources such as advice, information, support, and assistance from family, friends, and professionals. Because SPD is one of the major public health issues in the U.S., as it has been associated with an increased risk of mortality, reducing this association is part of a larger public health goal to increase life expectancy. Delayed or absent help-seeking will increase the risk of more severe health issues, hospitalization, and suicide; thus, it is critical that those with SPD seek help for their conditions to minimize individual and public health burdens of deleterious outcomes associated with

SPD. Significant public health information from this study can help guide national and local level efforts aimed at increasing awareness and community knowledge.

In Chapter 2, a detailed review of recent studies regarding help-seeking behaviors among individuals with SPD is discussed. Evidence shows that there exists a gap in research; thus, my study will extend knowledge in the discipline. Additionally, the SEM is discussed as it was the theoretical framework for this study. In Chapter 3, I explain methods and tests that were used to answer the research questions. In Chapter 4, I report research results, and in Chapter 5, I provide interpretations of results and answer the research questions.

Chapter 2: Literature Review

In this chapter, I provide an overview of relevant literature. There has been increasing recognition of the importance of positive mental health and emotional wellbeing in terms of overall health status. Adults with SPD have less health coverage and worse health outcomes compared to those without SPD (Dickerson et al., 2003; Fogarty et al., 2008). Furthermore, SPD can lead to other diseases such as asthma, cardiovascular disease, and cancer, not only because SPD may be a cause or complication of physical health problems, but also because the existence of comorbid physical and mental health conditions may heighten the burden of illness, or change or complicate the natural history of the disease (Byles et al., 2014; Serrano et al., 2011; Egede, & Dismuke, 2012).

SPD is an important individual and public health burden, but there is a lack of research regarding factors associated with decisions to seek healthcare among adults with SPD. Disumke et al. (2011) said SPD is associated with higher total healthcare expenditures and increased use of health services. Weissman et al. (2016) said adults with SPD are more likely to use expensive outpatient primary care physician (PCP) visits, yet have worse health outcomes compared to adults without SPD. Leykin et al. (2017) said although a number of preventive and cost-effective treatments for SPD are available, over one third of individuals fail to respond to treatments. Untreated mental disorders can cause unnecessary personal distress, prolonged family burdens, preventable disability, and premature death, and are more likely to persist, recur, and increase in severity (Altamura et al., 2008; Dhingra et al., 2010).

These mixed results warrant further understanding and exploration. In particular, I sought to investigate the relationship between clinical (physical health status and mental health status), access and quality of care (insurance status and source of health care status), and sociodemographic factors (sex, race, age, marital status, education, economic status, and English proficiency), as well as help-seeking behaviors among adults with SPD to understand how adults with SPD perceive their use of healthcare and seek help.

In this chapter, I include a review of my literature search strategies, an overview of the SEM, the problem of SPD, including prevalence, correlates and predictors of SPD, and gaps in prior research.

Literature Search Strategy

I conducted a search of English-language publications using the following key terms to identify relevant articles to support current research: *serious psychological distress*, *Kessler Psychological Distress scale*, *social ecological model*, *stressor*, *stress*, *distress*, *mental health*, *glucocorticoid physiology* and *depression*. Articles for which payment was required were directed to librarians who then helped me obtain those articles. I used PubMed Central and Medline, U.S. National Library of Medicine, JSTOR, and Google Scholar to obtain peer-reviewed literature and articles published from 2011 to 2021. I also used references published before that time period to support key ideas and theories related to help-seeking behaviors among adults with SPD, as well as address the theoretical foundation I used to determine factors I investigated.

Theoretical Foundation

I used the SEM as the theoretical foundation for my work. The SEM involve complex interplays between individual, relationship, community, and societal factors (Glanz et al., 2008). Including multiple levels of influence can lead to the development of more comprehensive intervention approaches useful for systematically targeting mechanisms of change .

A combination of both individual level and environmental/policy level interventions is needed to achieve substantial changes in health behaviors. According to the Ottawa Charter for Health Promotion (1986), educating people to make healthy choices when their environments are not supportive will result in weak and short-term effects because there is no guarantee that people will make use of those resources. The SEM is different from other models in that the environmental and policy contexts of behavior are incorporated within social and psychological influences (Bandura, 1986; Cohen et al., 2000; Flay & Petraitis, 1994). For my research, I started with the four critical SEM constructs: individual-level influences that increase the likelihood of people seeking help for their condition, relationship-level influences that affect decisions for or against seeking help, community-level factors such as social environments that influence decisions to seek care, and societal or macro-level factors such as religious beliefs or cultural practices that may influence health action towards or against seeking help for psychological distress. Since significant and dynamic interrelationships exist between these different levels of health determinants, interventions are most likely effective when they address determinants at all levels. Thus, the SEM is appropriate for my research on understanding the impact of help-seeking behaviors among individuals with SPD and its association with clinical, access and quality of care factors, and sociodemographic factors.

Historical and Conceptual Background of the SEM

Bronfenbrenner (1977) said development does not take place in a vacuum, but always occurs embedded in and expressed through behavior in a particular environment. Baral et al. (2013) said researchers in social sciences and public health frequently use the SEM to develop strategies, guidelines, and interventions to change behavior mechanisms based on the theory’s comprehensive concepts and approaches to behavior change.

Targeting behavior change is an important factor in reducing serious health conditions and preventing health burdens (Baral et al., 2013; Glanz et al., 2008). Thus, effective health behavior interventions are multilevel efforts focused on individuals that exhibit target behaviors and environmental conditions that lead to health behaviors.

Applications of the SEM in Health Research

The SEM has two concepts involving health promotion: behavior affects and is affected by multiple levels of influence (individual-level and environmental/policy-level) and individual behavior shapes and is shaped by the social environment (reciprocal causation). Individuals are not viewed as isolated from larger social units in which they live their lives in terms of creation of environmental conditions that support and promote effective and sustainable behavior change (Glanz et al., 2008). The SEM has been adopted by researchers investigating many health behaviors, as they provide useful frameworks for achieving a better understanding of factors and barriers that impact help-seeking behavior.

Shih et al. (2008) said finding a direct correlation between SPD and a decreased health-related quality of life (HRQOL); they used the results of their logistic regression analysis to inform policymaking and health promotion efforts intended to improve quality of life for persons with mental illness. After adjusting for standard covariates (sex, race, age, income, employment, marital status, and number of chronic conditions), adults with SPD were more than twice as likely to report fair or poor health than were adults without SPD (Shih et al., 2008). Their results emphasized the importance of recognizing and addressing mental health issues in persons with and without chronic conditions. Since persons with chronic diseases are more likely to see a primary health care provider for periodic monitoring and follow-up, there is a need for health care providers to provide improved screening, as well as comprehensive treatment approaches that jointly manages physical and mental health. One advantage of the use of SEM in such research is that it simultaneously focuses on multiple levels of influence which permits broadening of the options for effective interventions.

Rai et al. (2012) conducted a prospective cohort study using the Swedish health and administrative registries, and found that even mild psychological distress was associated with later onset of long-term disability, which in turn may worsen into an appreciable psychiatric disorder. Employing the SEM, they suggested that the use of dimensional measures when standardizing clinical and treatment decisions for common mental disorders was more effective, especially for people with symptoms below established thresholds (Rai, et al., 2012). Reducing milder forms of psychological distress in the population thus will reduce the disability burden, improve health outcomes and generate a significant societal savings.

I developed a SEM that considers multiple levels of influence on the help-seeking behavior of adults with SPD, as well as the interaction between these levels. According to the SEM, intra- and interpersonal factors operate within multiple ecological systems to influence help-seeking behavior (Glanz et al., 2008). These factors include those within the individual system. For my research, I start with the four critical SEM constructs: individual-level influences that increase the likelihood of people seeking help for their condition, relationship-level influences that can affect the decision for or against seeking help, community-level factors such as social environments that may influence the decision to seek care, and societal or macro-level factors such as religious beliefs or cultural practices that may influence health action towards or against seeking help for their psychological distress. These social ecologies are interconnected in their relationships within an individual's psychological well-being. Including variables related to multiple social systems in the same analysis allows me to explore how they may be inter-related (Guo, Hopson, & Yang, 2018). The predictors of individuals with SPD and their help-seeking behavior (doctor visits, forgoing care, and delay in care) that I analyzed include clinical factors (physical health status and mental health status), access and quality of care factors (insurance status and source of health care status), and sociodemographic factors (sex, race, age, marital status, education, economic status, and English proficiency).

An SEM of help-seeking behavior among individuals with SPD provides a potentially comprehensive framework for organizing risk and protective factor knowledge. Delivery of a multi-level approach can provide a framework to understand how upper level factors may moderate the influence of lower level factors, and vice versa. The first level identifies individual-level influences that may increase or decrease help-seeking behavior among individuals with SPD. Within the clinical factors, these are physical health status of the respondent which examines the general health condition and chronic health condition. Within the access and quality of care factors, it is the insurance status of the respondent, specifically whether he/she was uninsured in past 12 months. Within the sociodemographic factors, sex, race, age, marital status, economic status, education, and English proficiency of the respondent were examined. The second level examines close relationships that may affect the help-seeking behavior of individuals with SPD. Within the clinical factors, mental health status of the respondent, specifically his or her psychiatric and emotional health condition were looked at since a person's closest social circle-peers, partners and family members influence his or her behavior. The third level explores the settings, in which social relationships occur and seeks to identify the characteristics of these settings that are associated with seeking help. Within the access and quality of care factors, it is the source of health care of the respondent, specifically his or her source and difficulty of health care access. The fourth level looks at the broad societal factors that help create a climate in which the help-seeking behavior is encouraged or inhibited. Within the access and quality of care factors, it is the insurance status of the respondent, specifically whether the insurance covers mental health visits.

An understanding of which factors are related to help-seeking behaviors among those with SPD may be useful in designing targeted strategies for optimizing utilization and addressing the barriers to quality healthcare among those with SPD. Although the model contextualizes individuals' behaviors using dimensions such as intrapersonal, community and public policy to provide a framework for describing the interactions between these levels, no one model can describe all risk factors across these diverse domains. For example, the higher order social and structural levels (e.g. community, policy) represent factors outside of the control of any individual person. And even though policy makers tend to target interventions at individual level, they are only one component affecting the marginalized population (Baral et al, 2013; Wellings et al., 2006). It is, therefore, important to note that factors can span levels and therefore the boundaries between levels may be understood as porous rather than distinct.

Literature Review Related to Key Variables and Concepts

SPD

Positive mental health and emotional well-being play a crucial role in a person's overall health status. Ridner (2004,) defined SPD as "the unique discomforting, emotional state experienced by an individual in response to a specific stressors or demand that results in harm, either temporary or permanent, to the person" (p. 339). Mirowsky and Ross (2002) said SPD as a nonspecific mental health problem that may impact a person's social life and daily functions. Numerous researchers have shown how human exposure to stressors, such as acute and chronic life events, stressful events, and persisting negative social and environmental conditions, affects health outcomes (Horwitz, 2017; Pearlin, 1989).

Mental health professionals have mixed opinions regarding whether psychological distress is a temporary state or a symptom of a mental disorder (Horwitz, 2017; Mulder, 2008; Wakefield, Schmitz, First, & Horwitz, 2007; Wheaton, 2007). Horwitz (2017) argued that psychological distress is a normal response to stress that resolves when the person adapts to the stressor or the stressor is removed. Mulder (2011) and O'Campo, Wheaton, Nisenbaum, Glazier, Dunn, and Chambers (2015) argued that psychological distress is an underlying marker of depression and anxiety. Psychological distress is a state of emotional suffering represented by depression (e.g., helplessness, sadness, lost interest in daily activities, feeling tired, and hopelessness) and anxiety (e.g., restlessness, difficulty concentrating, and feeling tense). Although both the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) and the International Classification of Diseases, Tenth Revision, Clinical Modifications (ICD-10-CM) use psychological distress as an individual symptom, as a qualifier of other symptoms, and as an indicator of severity, inconsistencies exist between the two systems in their use of psychological distress for diagnosis of specific mental disorders. For example, psychological distress is not mentioned as a criterion for somatoform disorder in the DSM-V, but is defined as a "persistent distress" (p. 127) that contributes to repeated care-seeking behavior among persons with somatoform disorder in the ICD-10-CM. Also, psychological distress is included in the determination of depressive disorder severity in the DSM-V, but is not an indicator of the severity of depressive disorder in the ICD-10-CM. Despite the discrepancies between DSM-V and ICD-10-CM's operationalization of psychological distress, the inclusion of distress as a diagnostic criterion by both systems show its clinical relevance to mental health.

Reports from the literature indicate that adults with SPD are less likely to have health coverage and more likely to have worse health outcomes compared to those without SPD (Dickerson et al., 2003; Fogarty, Sharma, Chetty, & Culpepper, 2008). Pratt, Dey, and Cohen (2007) found that adults with SPD do not routinely see physicians despite the high correlation between SPD and mental health. Using data from the 2009-2013 National Health Interview Survey, Weissman, Pratt, Miller, and Parker (2015) found that adults with SPD were more likely to have worse health outcomes such as chronic obstructive pulmonary disease, heart disease, and diabetes compared to adults without SPD. Gill, Butterworth, Rodgers, and Mackinnon (2007) found that SPD increases the risk for psychiatric disorders, which can negatively impact a person's overall health and quality of life. In addition, according to Villena and Chesla (2010), individuals with SPD present formidable challenges to the traditional primary care system because they tend to perceive the system as insensitive and unresponsive to their needs.

The CBHSQ (2017) found that approximately 46.6 million Americans over the age of 18 have experienced some form of mental illness in the past year. Furthermore, approximately 11.2 million adults have some form of mental illness in the U.S. (CBHSQ, 2015). Christensen, Vestergaard, Mortensen, Sidenius, and Agerbo (2007) have also found that adults with SPD may struggle to detect changes in their health, and have diminished judgment about their medical condition and whether to seek help. Since mental illness is a major public health issues in the U.S. and has been associated with an increased risk of mortality, reducing this association is part of a larger public health goal to increase life expectancy (Krupski et al., 2016; Lanove et al., 2016).

Prevalence of SPD

Prior research also indicates that those with SPD tend to exhibit inadequate patterns of health care utilization (Weissman et al., 2016). The health care utilization indicators Weissman and colleagues used included visiting a doctor or health care provider 10 times or more in the last 12 months, having seen or talked to a health care professional in the last six months, having seen a mental health provider in the last 12 months, changing the health care location, and changing the health care location for a reason related to health care.

Weissman, Russell, Jay, Beasley, Malaspina, and Pegus (2017) compared adults with SPD to adults without SPD with respect to health care access, utilization of health care services, and functional indicators. Adults with SPD were more than three times as likely as those without SPD to have insufficient money to buy medications, to have insufficient money for healthcare, and were more than twice as likely to experience delays in care compared to those without SPD (Weissman et al., 2017). The study done by Weissman and colleagues is similar to the report published by Garfield, Zuvekas, Lave, and Donohue (2011) which indicates that adults with SPD are more likely to be uninsured. Garfield et al. (2011) also found that adults with SPD were more than twice as likely as their counterparts without SPD to have incomes under 133% of the federal poverty level (40.7%, 95% CI (38.7%, 42.7%) and 17.7%, 95% CI (16.8%, 18.6%), respectively; p<0.001). Both studies used national data thus were able to report health care patterns and utilizations generalizable to the U.S. adult population and to suggest the importance of expanding health insurance coverage to individuals with SPD.

Pathophysiology of Stress

Almost any type of threat to homeostasis or increase in stress will cause plasma glucocorticoid levels to rise (Munck, Guyre, & Holbrook, 1984). The mammalian brain is responsible for the physiological functioning of the body's organs. The autonomic nervous system spreads throughout the body via two distinct branches: the sympathetic and the parasympathetic nervous system (Norman, & Ryrie, 2013). The sympathetic system releases the hormones adrenaline and noradrenaline, which act to increase a person's attention to threats, increase their heart rate and prompt them to consider a fight or flight response (Norman et al., 2013). Glucocorticoids, the adrenal steroids secreted during stress, play a critical role in the organism's adaptation to acute physical stressors (Joseph, & Whirledge, 2017). The hypothalamic-pituitary circuit is largely regulated through negative feedback controls to maintain relatively stable levels of plasma glucocorticoids (Pathway Medicine, 2017). The parasympathetic system, on the other hand, releases acetylcholine, which induces relaxation, slows the heart rate and generates calm (Norman et al., 2013).

Glucocorticoids regulate biological processes including immune function, skeletal growth, reproduction, cognition, behavior, and cell proliferation and survival (Barnes, 1998; Sapolsky, Romero, & Munck, 2000; Oakley, & Cidlowki, 2013).

Due to their potent anti-inflammatory and immunosuppressant actions, glucocorticoids are frequently used in clinical applications and in over-the-counter medications; an estimated 1.2 percent of the U.S. population, approximately 3.6 million people, uses therapeutic glucocorticoids (Joseph et al., 2017; Overman, Yeh, & Deal, 2013).

Correlates and Predictors of SPD

In addition to hormones released during stress, an individual's ability to cope with exposure to stress may depend on clinical factors, access and quality of care factors, and sociodemographic factors that individualize the stress experience (i.e., vulnerability to stress).

Mojtabai et al. (2002) said there are multiple stages: individuals experience warning signs and try to evaluate the significance and the likely consequences; individuals then determine whether they have a problem that requires intervention and whether or not they will benefit from treatment; individuals then evaluate the benefits and costs of various treatments and choose which healthcare provider to consult. Therefore, a key to deciding whether to seek help is the perception of need.

Previous studies have found that many who have mental health problems do not think they need treatment because they believe the symptoms are temporary and not serious (Krupski et al., 2016; Mojtabai et al., 2002; Dismuke, & Egede, 2011; Glanz et al., 2008; Schuurhuizen et al., 2015; Swartz, & Jantz, 2014; Weissman et al., 2017). Alternatively, individuals may not perceive a need to seek help because they do not know what kind of help is available, they do not recognize the problem as a mental health problem, believe that treatment will not help, do not know what appropriate help is available, are embarrassed about seeking help, and/or fear stigmatization (Weissman et al., 2017). As a result, perceived need is influenced by the social context and the decisions people make in response to symptoms. Understanding how perceived need for professional help relates to different variables helps structure programs that lead to appropriate care for those who need it most (Forman-Hoffman et al., 2014; Weissman et al., 2017).

Factors That Affect Help-Seeking Behavior

Researchers have found that various factors affect help-seeking behavior (Magaard, Seeralan, Schulz, & Brutt, 2017; Rickwood, Mazzer, & Telford, 2015; Schnyder et al., 2017). Perceived needs are one of the most significant variables influencing help-seeking. People seek help to solve their problems, therefore, having awareness of perceived needs significantly affects the decision of whether or not to seek help (Gross, & McMullen, 1983; Magaard et al., 2017). The help-seeking model states that the decision to seek help is dependent on recognition of the problem and overcoming psychological and social barriers that hinder the help-seeking process (Gross et al., 1983; Magaard et al., 2017). Seeking help is a complex process with multiple decision points, and at each point, a range of factors can accelerate or regress progress. For example, some of the major barriers that affect help-seeking behaviors include negative attitudes, poor mental health literacy and low perceived need (Bonabi et al., 2016) Recent systematic reviews have indicated that mental illness stigma is a key barrier to help-seeking because public and self-stigma create embarrassment about help-seeking as well as a fear of being labeled as mentally ill (Clement et al., 2015; Schnyder et al., 2017).

Social support is another factor that affects help-seeking. If a person wishes to seek help, it is important to find someone who can provide sufficient help. As people are likely to seek help from someone in their social networks, those with larger support networks report greater intentions to seek help (Rickwood, Mazzer, & Telford, 2015). Seeking informal help is generally a first step that precedes professional service use, and the informal network of family and friends is, therefore, critical in the help-seeking process (Rickwood et al., 2015; Ryan & Shim, 2012).

Comorbidity was positively related to help-seeking behavior in studies conducted by Gagnes, Vasliladis, and Preville (2014) as well as Maggard and her colleagues (2017). It may be that existence of comorbid physical and mental health conditions allow for previous help-seeking experience with medical providers that may lead to fewer barriers to seeking help for people, especially if the experience has been a successful one. Alhussain et al. (2017), on the other hand, examined the relationship between SPD and ER use among adults with multimorbidity. Adults with multimorbidity and SPD were more likely to use the ER compared to adults with multimorbidity and no SPD. This is consistent with previous studies indicating that SPD is positively associated with ER use among general population (Alhussain et al., 2017; Lin, Burgess, & Carey, 2012; Stockbridge, Wilson, & Pagan, 2014). Lack of mental health-related treatment can lead to ER use and the researchers showed that adults with SPD were more likely to avoid visiting a doctor due to the fear of having a serious disease, which may lead to complications that require ER care (Alhussain et al., 2017). Given that treatment of chronic conditions in the ER is very expensive in the United States (Caldwell, Srebotnjak, Wang, & Hsia, 2013), there is a need to develop health policy programs targeting those with SPD and their help-seeking behavior.

Sociodemographic factors are also commonly assessed in help-seeking studies, including sex, race, age, education, ethnicity, and income level. A consistent finding in the literature is that females have a more positive attitude towards seeking psychological help than males (Koydemir-Ozden, & Erel, 2010; Nam et al., 2013; Rose, & Rudolph, 2006). Nam and colleagues performed a meta-analysis to examine gender differences in attitudes toward professional psychological help among Caucasians, Asian-Americans, and Asians. They found that women showed more favorable attitudes than men across all ethnic groups (Nam et al., 2013). Tamres, Janicki, and Helgeson (2002) performed a meta-analysis of gender differences in coping behavior and reported similar results: women seek social support more frequently than men. Researchers have also shown that the coping strategies used to deal with a particular stressor tend to change as one matures and ages, partly a result of the increased level of knowledge about mental health resources among older individuals, as well as their developed coping strategies (Koydemir-Ozden et al., 2010). The studies also indicated African Americans, Mexican Americans, and other ethnic minorities have lower rates of seeking help compared to Whites (Gonzalez, Vega, Williams, Tarraf, West, & Neighbors, 2010; Hankerson, Fenton, Geier, Keyes, Weissman, & Hasin, 2011). The majority of studies indicated no association between income and help-seeking behavior. A possible explanation for this finding might be that income as an indicator is not sensitive enough to detect socioeconomic differences in the use of health care services (Allin, Masseria, &

Mossialos, 2009; Magaard et al., 2017). Regardless, accounting for the financing of health care systems and understanding access and quality of care factors is necessary to interpret these associations (Andersen, 2008).

While perceived needs, social support, and sociodemographic factors facilitate help-seeking, depressive symptoms have been considered to inhibit help-seeking. As some components of SPD symptoms, such as feelings of hopelessness and worthlessness, reduce the motivation to cope with problems, those with more depressive symptoms are less likely to seek help (Boerema, Kleiboer, Beekman, van Zoonen, Dijkshoorn, & Cuijpers, 2016; Nagai, 2012; Schomerus, & Angermeyer, 2008). Indeed, Nagai (2012) reported that depressive symptoms are negatively related to intentions to seek help from family and friends.

It is important to evaluate different factors that affect help-seeking behavior in order to provide an evidence-informed recommendation on the feasibility and the potential content for help-seeking behavior among individuals with SPD. I examined the relationship between clinical factors (physical health status and mental health status), access and quality of care factors (insurance status and source of health care status), sociodemographic factors (sex, race, age, marital status, education, economic status, and English proficiency), and help-seeking behaviors among adults with SPD.

Clinical Factors and SPD

Information regarding the extent of distress may help medical providers plan ways to effectively provide people with coping strategies to overcome the distress and to implement a wide range of alternative community supports. My results obtained from this dimensional approach to mental health may help medical providers check for signs of an underlying medical condition that may need treatment.

Physical Health Status

Comorbidities can greatly affect how some people react to primary diseases, which can worsen the symptoms of mental diseases. Although the mechanisms underlying the comorbid association between physical disease and SPD is still unclear, it is important to understand the existence of these associations. Klein and Schoenborn (2010) showed that medical conditions such as asthma, bronchitis, chronic respiratory disorders, and other pre-existing illnesses have profound effects on the rate and severity of mental illnesses. The presence of depressive disorders often adversely affects the course of chronic disease and complicates its treatment. It is important to remember that untreated depressive disorders characteristically assume a chronic course, thereby adding to the burden of chronic disease (Keller et al., 1998). In fact, Dismuke et al. (2011) reported that the prevalence of SPD was estimated to be approximately 2.1-4.0% in the general US population and to be much higher in individuals with diabetes, arthritis, epilepsy, asthma, cardiovascular conditions, disabilities, or a BMI below or above the normal range. The existence of comorbid physical and mental health conditions may complicate the physical health problems, as well as exacerbate the burden of illness, alter the natural history of the comorbid conditions, and complicate the management of both conditions (Byles et al., 2013; Serrano, Setani, Sakamoto, Andrei, & Fraguas, 2011; Egede, & Dismuke, 2012).

The presence of SPD among persons with asthma has been associated with poorer asthma outcomes, such as impaired voluntary activation of the diaphragm (Chapman, Perry, & Strine, 2005; Mancuso, Rincon, McCulloch, & Charlson, 2001). In particular, persons with asthma who experience disruptive symptoms, such as dyspnea and nighttime awakening, are at increased risk for major depression (Goldney, Ruffin, fisher, & Wilson, 2003). Oraka, Kim, King, and Callahan (2012) analyzed data from 186,738 adults respondents from the 2001-2007 US National Health Interview Survey (NHIS) to understand the prevalence and risk factors for SPD, and their relationship to health-related quality of life (HRQOL) among adults with asthma in the US. Oraka et al. (2012) found that the prevalence of SPD among adults with asthma (7.5%) was more than double that of the overall US population (3.0%) and adults without asthma (2.6%) while the prevalence of reporting three or more health-related comorbidities was significantly higher in adults with asthma (21.5%) than adults without asthma (8.4%). Adults with asthma had consistently worse indicators of HRQOL and SPD with the proportion of SPD being higher among adults with asthma who reported current smoking (AOR 2.4; 95% CI, 1.9-2.9), obesity, former alcohol use, or having three or more comorbid health conditions (AOR, 3.9; 95% CI, 2.8-5.3). Adults with SPD and adults with both asthma and SPD had 4.6 (95% CI, 4.2-5.0) and 6.6 (95% CI, 5.4-8.0) times the odds of reporting fair/poor health compared with adults with neither condition (Oraka et al. 2012).

Schuuhuizen et al. (2018) and Karunanithi, Sagar, Joy, and Vedasoundaram (2018) examined patients with cancer for evidence of SPD. Previous studies indicated that, although the majority of patients have the ability to cope with the psychological burden resulting from hearing the diagnosis, the disease or its treatment, precise estimates vary with different types and sites of cancer. For example, 30-40% of patients receiving cancer care experienced psychological symptoms of distress, such as depression and anxiety (Zabora, Brintzenhofeszoc, Curbow, Hooker, & Piantadosi, 2001; Mitchell et al., 2011). Karunanithi et al. (2018) evaluated the level of SPD and social functioning in cancer patients in addition to multimodality cancer-directed therapy to attempt to improve their quality of life. A total of 251 patients completed the questionnaire; the researchers found that improvement in quality of life for these cancer patients was not possible by cancer treatment alone but by alleviating the distress associated with the disease. For example, a study in ovarian cancer patients indicated that social support is related to lower levels of vascular endothelial growth factor (VEGF) in both serum and tumor tissue (Costanzo, Lutgendorf, Sood, Anderson, Sorosky, & Lubaroff, 2005). According to Lutgendorf, Sood, and Antoni (2010), studies have indicated that psychosocial stress has a role in cancer progression through its impact on mechanisms of immune regulation, angiogenesis, and invasion; those with poor social support expressed higher levels of IL-6 which is an angiogenic factor produced by tumor cells that disrupts the equilibrium between pro- and anti-angiogenic factors. Analysis of the data from a survey by the National Office of Suicide Prevention indicated that most people recognized that talking to family and friends was helpful with their mental health and that supportive family and friend networks had a positive effect on mental health and wellbeing (Health Service Executive, 2017). This shows that family and friends are perceived as important supports for SPD patients, as well as that of health professionals, and demonstrates the importance of both chronic disease and SPD to the health of individuals and communities.

As a result, Schuuhuizen et al. (2018) chose a stepped care intervention approach, in which patients start with the least intensive treatment that is most likely to work, with more intensive and costly interventions reserved for those insufficiently helped by the initial steps. They focused on the cost-effectiveness of screening and treatment of SPD in mCRC (metastatic colorectal cancer) patients specifically to prevent influences from different types of cancer on the outcome. They developed an approach which involved evidence-based *T*argeted selection and *E*nhanced *S*tepped care (TES trial), in which they looked at psychotherapeutic and pharmacotherpaeutic implementations, and compared these with usual care in reducing SPD in patients with mCRC (Schuuhuizen et al., 2018).

Among adults with comorbidity, 5.8% had SPD and 94.2% did not (Alhussain et al., 2017). More than half of adults with comorbidity and SPD used the emergency room (ER) in the past 12 months, and nearly a quarter of adults with comorbidity and no SPD used the ER in the past 12 months. Nearly all adults with comorbidity and SPD (92%) had functional limitations, whereas 61.3% of those with comorbidity and no SPD had functional limitations (Alhussain et al., 2017). This seems to indicate that, while many people may seek help from general practitioners, counselors, and support groups, significant numbers do not access formal help in the face of SPD.

Rai, Kosidou, Lundberg, Araya, Lewis and Magnusson (2012) found that even mild psychological distress was associated with later onset of long-term disability. They investigated the association between increasing levels of psychological distress and the 5-

year probability of long-term disability pension awards for somatic or psychiatric conditions using a longitudinal population-based dataset compiled from several Swedish health and administration registries. The study population included 17,205 individuals with more than half of whom reported no psychological distress at baseline. However after adjusting for potential confounders, Rai and colleagues found a graded positive association between levels of SPD and receipt of disability pension consistent with the few longitudinal population-based studies reporting on the short-term disability associated with SPD, and its relationship to societal costs (Rai et al., 2012; Rai, Skapinakis, Wiles, Lewis, & Araya, 2010).

Finally, Shih and Simon (2008) found that the prevalence of SPD is higher among adults with chronic conditions than those without and increased with the number of comorbid chronic conditions. This is a significant finding since chronic medical conditions are common and often co-occur. Persons with asthma, diabetes, hypertension, and/or heart disease have been demonstrated to have higher rates of depression, depressive symptoms, and/or psychological distress (McVeigh, Mostashari, & Thorpe, 2004; Mykletun, Bjerkeset, Dewey, Prince, Overland, & Stewart, 2007; Shih et al., 2008). With a growing amount of evidence from prospective studies linking SPD to the increased incidence of chronic diseases such as diabetes, hypertension, and heart disease, it is important to consider that failure to screen and treat mental health disorders may contribute to higher rates of some chronic diseases.

Mental Health Status

SPD is a predictor of the quality of life and has a synergistic effect on health status (Oraka et al., 2010; Pratt et al., 2007; Shih et al., 2008; Weissman et al., 2017). Chiu, Amartey, Wang and Kurdyak (2018) conducted a large cohort study using valid measures of psychological distress and depression using data from the Canadian Community Health Survey on Mental Health and Well Being, Cycle 1.2. Compared to the referent group, those with SPD were more likely to be smokers, have anxiety disorders and less likely to be physically active (Chiu et al., 2018). The leading cause of death was diseases of the circulatory system for those with SPD and neoplasms for the reference group. Those with SPD also had a greater proportion of deaths due to mental health and addictions, external causes of injury and respiratory illnesses compared to the referent group (Chiu et al., 2018). Similar findings from a population-based cohort study and meta-analysis indicate an increased risk of mortality for those with SPD (Pratt, 2009; Russ et al., 2012).

Forman-Hoffman et al. (2014) linked NHIS data from 1997 to 2004 to death certificate data from the 1997 to 2006 National Death Index (NDI). They analyzed data from of 238,811 adults, of whom they identified 16,568 as having died during the period between the NHIS interview and December 31, 2006. The results indicated that SPD contributed to premature death in the U.S. population when not taking into consideration sociodemographic risk factors and co-occurring physical and behavioral health factors (Forman-Hoffman et al., 2014). When comparing a mean years of potential life lost (YPLL) among adults aged 18 or older who met criteria for SPD, those who died during the follow-up period had 17.9 mean YPLL, which was significantly higher than the 14.1 mean YPLL for deceased persons who did not have SPD (Forman-Hoffman et al., 2014). Forman-Hoffman and her colleagues also looked at different age groups and analyzed those with SPD and without SPD to conclude that those who had a K6 score of 11 or greater in adults aged 18 to 34 were 1.94 times more likely to die when compared to those in the same age group with no SPD after adjusting for covariates. When looking at adults aged 35 to 54 and those aged 55 or older, all levels of distress whether a K6 score of 1 to 9 (low), 10 to 12 (moderate) or 13 to 24 (high) were associated with an increased adjusted risk of death when compared with adults with no distress, confirming other reports from the literature that there is a robust association between SPD and death even after adjusting for factors including smoking and chronic health conditions (Forman-Hoffman et al., 2014; Tanji et al., 2017).

Access and Quality of Care Factors, Sociodemographic Factors, and SPD

Access and quality of care factors considered in the study include insurance status and source of health care of the respondent. Sociodemographic characteristics include sex, race, age, marital status, education, economic status, and English proficiency. I defined SPD as a score of ≥13 on the K6 which asks about the frequency of each of the following six symptoms: so sad that nothing could cheer you up, nervous, restless or fidgety, hopeless, that everything was an effort, worthless. Possible responses included the following: all of the time (score of 4); most of the time (score of 3); some of the time (score of 2); a little of the time (score of 1); and, none of the time (score of 0). Total possible score ranged from 0 to 24 (Kessler et al., 2003). The K6 has been shown to significantly outperform the widely used 12-question General Health Questionnaire (GHQ-12) in screening for ICD-10 disorders. The correlation between the K10 and K6 was almost perfect (r=0.97) and the Cronbach α (a measure of internal consistency reliability) was high at 0.89 for the K6 (Kessler et al., 2003). The area under the receiver operating curve (ROC) for the K6 was 0.86, higher than that for the K10, indicating that the K6 is very good at discriminating between respondents with SPD and those without SPD. The K6 has been found to have 36% sensitivity and 96% specificity for identifying SPD (Kessler et al., 2003).

Pratt et al. (2007) used the 2001-2004 National Health Interview Survey (NHIS) to describe the characteristics of adults with K6-measured SPD. The NHIS is a complex, stratified sample survey designed to provide estimates for the civilian non-institutionalized population of the United States, with interviews obtained from a total of 123,610 person 18 years of age and older living in the community (Pratt et al., 2007). When examining all age groups except persons 65-74 years of age, the 1-month prevalence rate of SPD was higher in women (3.9%) than men (2.4%). Pratt et al. (2007) also found that in regards to education, adults with SPD were more likely to have less than a high school education (34%) than adults without SPD (17%) which may explain lower income per year with 44% of persons with SPD having a family income of less than $20,000 per year while 20% of persons without SPD had this level of income. Persons with SPD were twice as likely to be divorced (24% versus 12%) and less likely to live with other family members when compared to persons without SPD (Pratt et al., 2007).

To examine the trend in years, Pratt used the 2007 NHIS sample to compare her results to those she obtained from the 2001-2004 samples. The findings were congruent in that adults with SPD were younger, less educated, more likely to be poor and more likely to live alone. More than one-quarter of adults with SPD received food stamps, compared with 4% of other adults. They were more likely than other adults to receive SSDI (Social Security Disability Insurance), other disability benefits, and SSI (Supplemental Security Income), in which fifty-three percent participated in at least one of the six programs examined (Pratt, 2012). However, the prevalence rate of SPD was higher in men than women, which is a finding different than that obtained from the 2001-2004 data. Adults with and without SPD were equally likely to have health insurance, but adults with SPD were more likely to have public insurance (Pratt, 2012). Both years' results are congruent in that persons with SPD were much more likely to forgo needed healthcare due to cost. Adults with SPD were more likely than other adults to report being unable to afford needed prescription medication, mental health treatment, and dental care (Pratt et al., 2007; Pratt, 2012).

Weissman et al. (2016) examined the characteristics of SPD using the same survey, NHIS, as Pratt, but investigated different years, 2006-2014. Combining multiple survey years allowed for adequate sample size and provided greater statistical power resulting in an analytic sample of 9,271 adults with SPD for a weighted sample of 10,862,999 adults with SPD nationwide (Weissman et al., 2016). The study by Weissman and her colleagues showed that men were more likely to feel sad and restless than women. When comparing adults with SPD in the lowest poverty index ratio (PIR) group to those with incomes above the federal poverty level (FPL), there was a statistical significance that those in the lowest PIR group were more likely to report feeling exhausted, worthless, without hope, nervous, and restless (Weissman et al., 2016).

Using the indicators for the K6 scale, Weissman et al. (2016) also found that feeling hopeless was associated with lower odds of visiting a healthcare provider in the last 6 months (OR = .69; 95% CI=.58-.81) and a lower likelihood of seeing a doctor or healthcare provider at least 10 times in the last 12 months (OR=.83; 95% CI=.72-.95). Feeling exhausted was associated with a greater likelihood of seeing a healthcare provider in the last six months (OR = 1.2; 95% CI=1.0-1.4) and was also associated with a greater likelihood of seeing a doctor at least 10 times in the last 12 months (OR= 1.6; 95% CI= 1.4-1.8). Women with SPD were more odds than men with SPD to change their usual place of care (OR = 1.3; 95% CI= 1.1- 1.5) (Weissman et al., 2016).

Alhussain, Meraya and Sambamoorthi (2017) also used NHIS, but employed a sample from a year after Weissman's study (the 2015 sample) to examine the association between SPD and ER use. They found that 31.7% of adults with comorbidity and SPD had poor income. In contrast, about 10% of adults with comorbidity and no SPD had poor income. Statistically significant differences were also observed between adults with and without SPD in sex, age, race/ethnicity, marital status, education level, health insurance, smoking status, alcohol use, and physical activity (Alhussain et al., 2017).

Similar to the findings by Pratt et al (2007), Alhussain et al (2017) found that psychological distress and mental health problems were higher in the middle age group, i.e. 50-64 years, and less evident in the youngest and oldest age groups. A higher point prevalence of SPD in females stayed constant across all groups except for in the middle age group (50-64 years). Within the middle age group, the point prevalence of SPD was higher in males than females which raises interesting research question on susceptibility of psychological distress to men in their 50-64 years in age and the reasons behind this phenomenon (Alhussain et al., 2017). In line with previous research findings, those who were separated, widowed or divorced exhibited the greatest point prevalence of psychological distress and mental health problems in the previous year (Wade, Hart, Wade, Bajaj, & Price, 2013). However, marital status appeared to have a different impact across sex. 5.6% of males that were divorced and 7.8% of males that were separated had a high K6 scale score, while on the other hand, 57.5% of females that were divorced and 28.5% of females that were separated had a high K6 scale score (Wade et al., 2013). For females, being widowed, separated or divorced resulted in a greater proportion of high K6 scale scores; for males, being married or cohabiting resulted in a higher proportion of K6 scale scores.

Dhingra et al. (2010) used the Behavioral Risk Factor Surveillance System (BRFSS) in 2007 to examine correlates and predictors of receipt of treatment for SPD. When not taking into consideration the annual household income level, health insurance status, and frequency of receipt of emotional support, those aged 18 to 34 years, men, persons currently married, and those with at least some college education were less likely to receive treatment. Dhingra and his colleagues found that the highest level of the evaluated need, SPD, was the factor most strongly associated with treatment (OR=5.19). Evaluated need attenuated the association between treatment and persons receiving emotional support only sometimes or rarely and those reporting seven to 30 mentally unhealthy days (Dhingra et al., 2010).

In relation to socioeconomic factors, those who had a higher level of education, a higher weekly income and who were employed were least likely to be distressed or to have reported mental health problems in the previous year, suggesting that inequalities in education, employment and poverty may have an impact on mental health and wellbeing. International research has consistently found that mental ill health tends to be more prevalent in lower socio-economic groups (Mackenbach et al., 2017). Those that were receiving long-term disability benefits as well as those that were unemployed tend to exhibit a higher K6 scale score; thus, these groups are the most vulnerable. Previous research has consistently suggested a direct correlation between unemployment status and mental wellbeing so policies aimed at improving these factors may impact the mental health status of society (Mackenbach et al., 2017; Mulder, 2008).

Zahnd and Wyn (2012) utilized data from the 2009 California Health Interview Survey (CHIS), the same dataset that I used for my data analysis, but a different year. Zahnd and her colleague looked specifically at adult women in California and found that 7.6% or 1,064,000 women 18 years or older reported experiencing symptoms associated with SPD. The rate of past-year smoking and binge-drinking was higher in women with past-year SPD (22.8% and 31.3%, respectively) than women without such distress (9.1% and 23.8%, respectively). Women with past-year SPD were nearly two and a half times more odds to report being a victim of intimate partner violence (43.2%) than women without past-year SPD (18.4%) (Zahnd et al., 2012).

In addition, women with past-year SPD had five times increased odds to respond that they have ever thought of suicide (38.7%) when compared to women without past-year SPD (7.5%). The study also indicated that among adult women in California, younger age groups have higher past-year rates of SPD compared to older women. Specifically, women in the 18–44 and 45–64 years of age groups were twice as likely to have symptoms of past-year SPD compared to women 65 years or older (3.5%). In terms of marital status, the rate of past-year SPD experienced by single women with children (13.7%) was twice as high as the rate among married women with children (6.1%).

Race/ Ethnicity

Past studies have indicated that black non-Hispanics, Hispanics, and Asians or other racial ethnic groups were significantly less likely than white non-Hispanics to receive treatment for a disease (Horwitz, 2017; Ye, Shim, & Rust, 2012). Acculturation is a critical process of a cultural adjustment in a new society. This resettlement does not simply involve geographic location, but also involves challenges to an immigrant's lifelong values. The stress related to this process is referred to as "acculturative stress," which exceeds the immigrant's coping ability. Research has identified acculturative stress as one of the important predictors of psychological distress among older Asian immigrants (Choi, Miller, & Wilbur, 2009; Miller, Sorokin, Wang, Feetham, Choi, & Wilbur, 2006; Mui & Kang, 2006). The difficulty of acculturation has been associated with depression (Lee et al., 2005; Miller et al., 2006).

A number of studies indicated that acculturation is a cultural change from when individuals come to contact with another culture is often challenging and a source of stressful process (Kirmayer et al., 2011; Miller et al., 2006; Mui et al., 2006). Current research indicates that immigrants experience various stressors in the process of resettlement (Kirmayer et al., 2011). Older immigrants are considered at high risk of various mental health problems in the United States as a result of the process of acculturation, which can be stressful. For example, Jang and Chiriboga (2011) found that higher levels of acculturation were related to lower levels of acculturative stress in a sample of older Koreans in Florida; specifically, higher acculturation was associated with better mental health (Han, Kott, Hughes, McKeon, Blanco, & Compton, 2016; Jang et al., 2011; Kang, Domanski, & Moon, 2009; Lee, & Hwang, 2014).

In the 2001–2004 NHIS, Pratt et al. (2007) found that Hispanic adults 65 years and over had higher rates of SPD than non-Hispanics of the same age. The prevalence rate of SPD in Hispanics 18–44 years of age was similar to that in non-Hispanic white and non-Hispanic black persons. Weissman et al. (2016) also reported that Hispanics and non-Hispanic blacks with SPD were less likely to visit a healthcare provider at least once in the last 6 months compared to non-Hispanic whites with SPD. There was significant variation across all race/ethnicities in the frequency of emotional states. Among the most significant, non-Hispanic blacks and Hispanics felt more hopeless, sad, and restless compared to other race/ethnicities and non-Hispanic whites (Weissman et al., 2016). Zahnd et al. (2012) also found that Latinas (9.3%), African- American women (10.5%), and women of two or more races (10.2%) were twice as likely to have higher past-year serious psychological distress compared to Asian/Native Hawaiian/Pacific Islander women (4.1%). However, white women also had higher past-year SPD levels (7.0%) than

Asian/Native Hawaiian/Pacific Islander women (4.1%). The different database from which the authors obtained their results may cast doubt on the validity of these results. However, the finding does raise further research questions, such as whether being accultured and being of a certain race or ethnicity may have a greater negative impact on the psychological wellbeing, and why.

Summary

SPD is an important individual and public health burden. Although many studies have been conducted to compare help-seeking behaviors and health-related outcomes between those with and without SPD, there remains a lack of understanding of the factors associated with decisions to seek healthcare made by adults with SPD. Ye et al. (2012) said stigma and fear of medical establishment negatively affected the use of health services. SPD was positively associated with fear of having a serious illness and thinking of dying. Forman-Hoffman et al. (2014) said the mean YPLL between those with and without SPD was 3.8, which is consistent with those reported by other studies.

While it is recognized that individual health choices affect perceptions of the necessity of seeking care, a large gap in the literature exists. In particular, the relationship between clinical, access and quality of care, sociodemographic factors, as well as help-seeking behaviors among adults with SPD (doctor visits, forgoing care and delay in care) must be further explored. Supportive mental health treatment and targeting adverse health behaviors may be important mechanisms for reducing SPD; however, little is known about how to manage SPD in a way that would mitigate the risk. Addressing these problems requires an understanding of both its magnitude and of role of clinical, access and quality of care, and sociodemographic factors so that targeted strategies can be developed to address barriers to quality healthcare and optimize use among those with SPD.

In Chapter 3, I discuss mechanisms behind these important findings by providing an overview of my study methodology, including my research questions and hypotheses, research design and rationale for choosing that design, and a detailed overview of data sources. I clearly define variables and statistical methods as well as threats to study validity and ethical procedures.

Chapter 3: Research Method

In this chapter, I provide an overview of the research method for my planned study. Many studies have been conducted comparing help-seeking behaviors and health-related outcomes between those with and without SPD. However, factors associated with decisions to seek healthcare made by adults with SPD are still not yet fully understood. The purpose of this study is to address lack of understanding of adults with SPD and their help-seeking behaviors, specifically with respect to clinical, access and quality of care, and sociodemographic factors. This chapter includes a description of my sample population and measures used, data collection procedures, the rationale for the selection of the quantitative study design, my data analysis plan, potential threats to validity resulting from my choice of study design, and potential ethical concerns.

Research Design and Rationale

I used a quantitative approach to investigate the relationship between clinical (physical health status and mental health status), access and quality of care (insurance status and source of health care status), and sociodemographic factors (sex, race, age, marital status, education, economic status, and English proficiency), as well as help-seeking behaviors among adults with SPD. A quantitative examination was done using secondary data that were representative of California's noninstitutionalized adult population. The quantitative method was an appropriate approach because data collection occurred using the survey method and study questions are close-ended questions. The qualitative method was no appropriate because participants were not observed in their natural environment or interviewed using open-ended questions. The cross-sectional design is suitable because the purpose of this study is to ascertain empirical relationships between independent and dependent variables at a single point in time. The independent variables are clinical (physical health status and mental health status), access and quality of care (insurance status and source of health care status) and sociodemographic factors (sex, race, age, marital status, education, economic status, and English proficiency). The dependent variables are help-seeking behaviors for SPD (doctor visits, forgoing care, and delay in care).

Methodology

In this section, I provide an overview of my methodology, including use of archival data, specific data sources used, population, sampling procedures, and variables.

CHIS Data

Data used for this study were from the California Health Interview Survey (CHIS), a random-digit telephone survey designed to be representative of California's noninstitutionalized population. For analysis purposes, CHIS 2015 data collected between May 2015 and December 2016 were used, which involved surveying 42,089 adults, 1,594 adolescents, and 4,293 children in California (CHIS, 2017). Approximately 50% of adult interviews were conducted via landline and 50% via cell phone to reduce potential selection bias.

The CHIS sample design is a stratified two-stage dual frame design (phase 1) with a follow-up study on a subsample of nonrespondents (phase 2). CHIS employed this responsive design with adaptive design features to "minimize the risk of nonresponse bias, reduce nonresponse rates, increase the number of interviews in key sample domains, and maximize cost efficiency" (CHIS, 2017, p.12). CHIS varied the duration of each phase, based on changes in interview rates and number of hours per interview, but on average, phase 1 lasted 12 weeks and phase 2 lasted 5 weeks. During the second phase, CHIS was successful in gaining participation among those who were underrepresented. For the purpose of this study, I extracted relevant questions and participants' responses from the CHIS dataset, which is available for public use. As a result, I did not have to obtain separate permission to access data.

CHIS interviewers received a minimum of 18 hours of training, and were constantly monitored and supervised to ensure high-quality data collection. RTI International, a research organization, conducted CHIS data collection. Interviewers contacted each sampled telephone number at least 14 times on different days (weekdays and weekends) during different times of the day in order to make contact with households. If interviewers initially contacted the household at an inconvenient time, they arranged for callback appointments to accommodate respondents' schedules. Interviewers also left messages on answering machines to help differentiate CHIS from telemarketers and encourage participation in the survey.

CHIS data and results have been used extensively by federal and state agencies, local public health agencies and organizations, advocacy and community organizations, other local agencies, hospitals, community clinics, foundations, and researchers to develop an understanding of a wide range of health-related issues. The UCLA Center for Health Policy Research (UCLA-CHPR) conducts CHIS in collaboration with the California Department of Public Health and Department of Health Care Services to provide extensive information on health-related issues for small, medium and large-sized counties in California, as well as statewide information involving California's overall population. The evaluation assessment focuses on two of the high need service planning areas (SPAs) in Los Angeles County, SPA 4 and SPA 6, with a goal of reducing obesity and other diet-related chronic diseases among SNAP-eligible populations.

The 2015-2016 adult questionnaire is divided into 15 sections; however, only the bolded sections were used for the purpose of this study.

a. Demographics part I- sex, race, age, marital status

b. Health conditions- general health, asthma, pre-diabetes/ borderline diabetes, heart disease, flu shot

c. Health behaviors- walking for transportation and leisure, dietary intake, access to fresh and affordable foods, fast food, alcohol use/ abuse

d. General health, disability, and sexuality health- height and weight, disability, sexual partner, registered domestic partner, gender identity

e. Women's health- pregnancy status, mammography

f. Mental health- K6 mental health assessment, repeated K6, Sheehan scale, access and utilization, stigma, medication, loneliness scale

g. Demographics part II- country of birth (self, parents), additional language use, spouse/ partner, living with parents, educational attainment, veteran status, employment, county of residence, address confirmation, cell phone use

h. **Health care and health insurance**- usual source of care, emergency room visits, Medicare coverage, employer-based coverage, private coverage, employer offer of health insurance, coverage over past 12 months, reasons for lack of coverage
i. Adolescent and child health insurance- child's health insurance, Medi-Cal coverage, private coverage, high deductible health plans, reasons for lack of coverage, coverage over past 12 months, citizenship and immigration of parents
j. **Health care utilization and access**- visits to medical doctor, personal doctor, patient-centered care, timely appointments, tele-medical care, communication problems with a doctor, change of usual source of care, delays in care, internet use, family planning,
k. **Employment, income, poverty status, food security**- hours worked, income last month, annual household income, number of persons supported, poverty level test, availability of food in household, hunger
l. **Public program participation**- TANF/ CalWORKS, food stamps, supplementary security income, assets, child support, worker's compensation, social security/ pension payments, reasons for non-participation in Medi-Cal
m. Housing and social cohesion- housing, social cohesion, safety, civil engagement, philanthropic contributions
n. Suicide ideation- suicide ideation and attempts

o. Discrimination

The questionnaire content is largely driven by the research needs of the UCLA, sponsoring agencies, and a variety of government, academic and other partners.

CHIS 2015 data were collected between May 2015 and December 2016, and the survey is conducted via RDD and is designed to achieve a distribution of 50% landline and 50% cellular phone numbers. For the RDD sample, CHIS grouped the 58 counties in the state into 44 geographic sampling strata and created 14 sub-strata within the two most populous counties in the state (Los Angeles and San Diego; see Table 1). Within each geographic stratum, CHIS selected residential telephone numbers then selected randomly from within each household one adult (age 18 or older) respondent. In those households with adolescents (ages 12-17) and /or children (under age 12), one adolescent and one child of the randomly selected parent/guardian were randomly selected.

Table 1

California County and County Group Strata Used in the CHIS 2015-16 Sample Design

---

_

1. Los Angeles
   1.1 Antelope Valley
   1.2 San Fernando Valley
   1.3 San Gabriel Valley
   1.4 Metro
   1.5 West
   1.6 South
   1.7 East
   1.8 South Bay
2. San Diego
   2.1 N. Coastal
   2.2 N. Central
   2.3 Central
   2.4 South
   2.5 East
   2.6 N. Inland
3. Orange
4. Santa Clara
5. San Bernardino
6. Riverside
7. Alameda
8. Sacramento
9. Contra Costa

17. Stanislaus
18. Santa Barbara
19. Solano
20. Tulare
21. Santa Cruz
22. Marin
23. San Luis Obispo
24. Placer
25. Merced
26. Butte
27. Shasta
28. Yolo
29. Imperial
30. Napa
31. Kings
32. El Dorado
33. Madera
34. Monterey
35. Humboldt
36. Nevada
37. Mendocino
38. Sutter
39. Yuba

10. Fresno
11. San Francisco
12. Ventura
13. San Mateo
14. Kern
15. San Joaquin
16. Sonoma

40. Lake
41. San Benito
42. Colusa, Glen, Tehama
43. Plumas, Sierra, Siskiyou
    Lassen, Modoc, Trinity,
    Del Norte
44. Mariposa, Mono, Inyo,
    Amador, Alpine,
    Calaveras, Tuolumne

Population

To capture the rich diversity of the California population, CHIS interviews were conducted in five languages- English, Spanish, Chinese (Mandarin and Cantonese dialects), Vietnamese, and Korean. These were chosen based on CHIS's analysis of 2010 Census data, which was performed to identify the languages that would cover the largest number of Californians in the CHIS sample who either did not speak English or did not speak English well enough to otherwise participate (CHIS, 2017). Oversampling of Marin County and Imperial County were done due to the targeted geography included several sparsely populated communities. In 2015-2016, CHIS completed 42,089 adult interviews with oversampling of certain groups (Table 2), roughly half via landline RDD and half via cell RDD; similarly, half of the interviews were completed in 2015 and half in 2016.

Table 2

Number of Completed CHIS 2015-16 Adult Interviews by Type of Sample and Instrument

Type of Sample	Adult
Landline RDD	15,106
Vietnamese surname list	3,558
Korean surname list	1,772
Japanese surname list	631
Cell RDD	19,722
Marin County oversample	1,042
Imperial County ASB oversample	258

To maximize response rates, CHIS mailed an advance letter in five languages to all landline sampled telephone numbers for which an address could be obtained from reverse directory services. CHIS included a $2 bill with the 2015-16 advance letter to encourage cooperation and provided additional incentives of $20 for cell phone adult interviews and $40 for nonresponse follow-up adult interviews. This modest incentive did not compensate for respondent's time, but helped to draw attention to the survey, emphasize its importance, and encourage participation (CHIS, 2017). Details on the incentives are provided in Table 3.

Table 3

2015-2016 CHIS Incentives by Interview Type

Type of interview	Adult
Cell Phone Screener	$5
Cell Phone Adult Interview	$20
Cell Phone Child Interview	$10
Cell Phone Teen Interview	$10
Nonresponse Follow-Up Adult Interview	$40
Nonresponse Follow-Up Child	

Interview	$20
Nonresponse Follow-up Teen Interview	$20

Study Sample

An analysis sample containing only participants with SPD was identified using the standardized and validated K6 scale. The K6 scale consists of six questions which either individually or collectively can be used to understand how frequently respondents experience symptoms of SPD in the previous 30 days. Responses from the K6 scale questionnaire were separately coded from 0 to 4 as shown in Table 4. This is because CHIS score values and K6 score values are different. The K6 response codes (0-4) are summed to yield a total score ranging from 0 to 24. Scores of 13 or above define SPD (Center for Behavioral Health Statistics and Quality, 2015). The initial question for the instrument is “The next questions are about how you have been feeling during the past 30 days.”

Table 4

K6 Scale of SPD

Question	Variable	Response set	Score value CHIS- K6	Symptom
About how often do you feel nervous?	AJ29	All of the time	1-4	Nervous
		Most of the time	2-3	
		Some of the time	3-2	
		A little of the time	4-1	
		None of the time	5-0	
		Refused	-7	
		Don’t know	-8	
About how often do you feel hopeless?	AJ30	All of the time	1-4	Hopeless
		Most of the time	2-3	
		Some of the time	3-2	
		A little of the time	4-1	

Question	Variable	Response set	Score value CHIS- K6	Symptom
		None of the time	5-0	
		Refused	-7	
		Don't know	-8	
About how often do you feel restless or fidgety?	AJ31	All of the time	1-4	Restless or fidgety
		Most of the time	2-3	
		Some of the time	3-2	
		A little of the time	4-1	
		None of the time	5-0	
		Refused	-7	
		Don't know	-8	
About how often do you feel so depressed that nothing could cheer you up?	AJ32	All of the time	1-4	Depressed
		Most of the time	2-3	
		Some of the time	3-2	
		A little of the time	4-1	
		None of the time	5-0	
		Refused	-7	
		Don't know	-8	
About how often do you feel that everything was an effort?	AJ33	All of the time	1-4	Effort
		Most of the time	2-3	
		Some of the time	3-2	
		A little of the time	4-1	
		None of the time	5-0	
		Refused	-7	
		Don't know	-8	
About how often do you feel worthless?	AJ34	All of the time	1-4	Worthless
		Most of the time	2-3	
		Some of the time	3-2	
		A little of the time	4-1	
		None of the time	5-0	
		Refused	-7	
		Don't know	-8	

The K6 scale has psychometric properties and the use of it enables identification of persons with mental conditions that cause serious role impairments and require mental health treatment (Kessler et al., 2002; Pratt et al., 2007). Researchers have demonstrated that the K6 scale has internal consistency (Cronbach α= 0.89) (Kessler et al., 2002). Outcomes from previous studies indicate that K6 scale is both an effective screening measure and an indicator of distress severity among the populations (Mitchell, & Beals, 2011). A cutoff score of 13 has a 0.36 (standard error [SE] 0.08) sensitivity, a 0.96 (SE 0.02) specificity, and a total classification accuracy of 0.92 (SE 0.02) for detecting persons with SPD (Kessler et al., 2003; Prochaska et al., 2012). After excluding respondents without SPD and those that identified themselves as currently pregnant (6 respondents) the final analytic sample consisted of 1,678 respondents (Table 5).

Table 5

Analysis Sample (SPD= K6 scale ≥ 13)

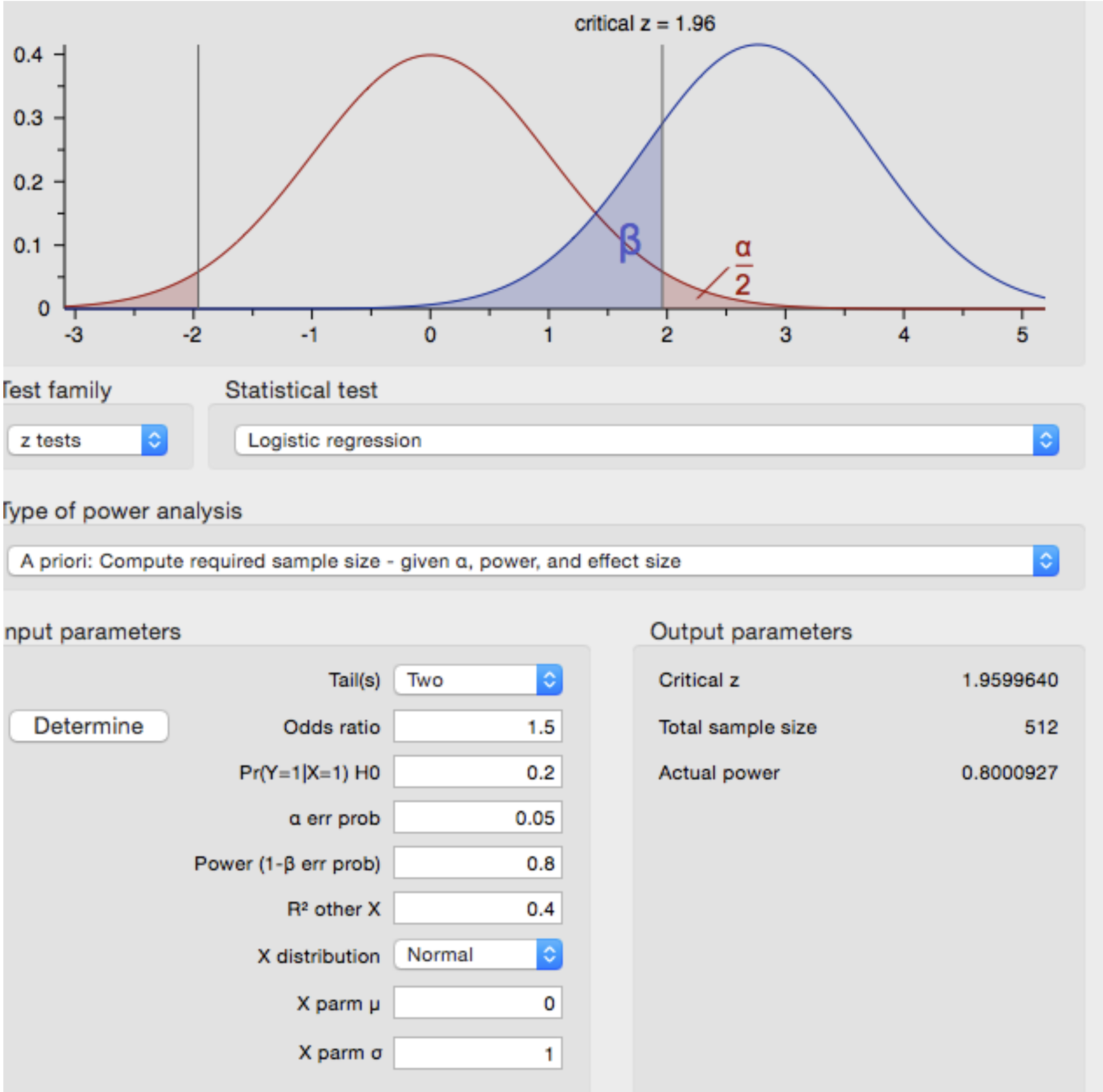
K6 Score Value	Frequency	Valid Percent
.00	10865	26.0
1.00	5924	14.2
2.00	5642	13.5
3.00	4093	9.8
4.00	3671	8.8
5.00	2470	5.9
6.00	2077	5.0
7.00	1426	3.4
8.00	1204	2.9
9.00	877	2.1
10.00	767	1.8
11.00	558	1.3
12.00	557	1.3
13.00	**339**	.8
14.00	**324**	.8
15.00	**240**	.6
16.00	**169**	.4
17.00	**157**	.4
18.00	**135**	.3
19.00	**92**	.2
20.00	**66**	.2
21.00	**52**	.1
22.00	**40**	.1
23.00	**30**	.1
24.00	**40**	.1
Total	41815	100.0
Missing System	274	
Total	42089	

Power Analysis

G*Power 3.1 was used to perform sample size estimation. The estimation was based upon a logistic regression model assuming 80% statistical power, alpha= 0.05, and a two-sided test (Figure 1) to detect sample sizes needed for OR of 1.5, 2, 2.5, 3. In addition, the R^2 was set to 0.40, representing the estimated squared multiple correlation between the independent variable of interest and the other covariates; it is used to estimate the amount of variability accounted for by the covariates. The projected sample size needed under the above assumptions is approximately N= 512 to detect OR of 1.5 (see Table 6). Thus, my analytic sample size of 1,678 is sufficient for detecting different levels of effect when performing inferential statistics for this study.

Figure 1

*G*power Analysis Input*



Test family: z tests

Statistical test: Logistic regression

Type of power analysis: A priori: Compute required sample size - given α, power, and effect size

nput parameters

Tail(s): Two

Odds ratio: 1.5

Pr(Y=1|X=1) H0: 0.2

α err prob: 0.05

Power (1-β err prob): 0.8

R² other X: 0.4

X distribution: Normal

X parm μ: 0

X parm σ: 1

Output parameters

Critical z: 1.9599640

Total sample size: 512

Actual power: 0.8000927

Table 6

Analysis to Determine Number of Subjects for This Study

Odds Ratio (OR)	Total Sample Size
1.5	512
2.0	188

Odds Ratio (OR)	Total Sample Size
2.5	116
3.0	88

Independent Variables

Clinical Factors

The clinical data include questions around physical health status and mental health status. The general health condition of the respondent were accessed with, “Would you say that in general your health is,” in a Likert scale. Afterwards, I examined questions related to their health status in the following conditions: asthma, diabetes/borderline or pre-diabetes, hypertension, or heart disease with a dichotomous question, “Has a doctor ever told you that you had <*insert health status*>?” In regards to diabetes status, women who were identified as only having gestational diabetes (“Has a doctor ever told you that you had diabetes during pregnancy?”) were not considered as having diabetes. These questions were used to create a new variable, Chronic Health Conditions, such that an individual that has at least one of the above health conditions (asthma, diabetes, hypertension or heart disease) were flagged as “yes” for having a chronic health condition. Those who indicated “no” to all were flagged as “no” for Chronic Health Conditions and all other responses were flagged as “other”.

Psychiatric and emotional health of the respondent were ascertained with questions on whether emotions interfered with the respondent’s performance at work, with household chores, with social life, or with relationship with friends and family. These questions were used to create a new variable, Psychiatric/ Emotional Health

Condition, such that an individual that selected “a lot” or “some” to any of the above questions were flagged as “yes” for Psychiatric/ Emotional Health Condition. Those who select “not at all” were flagged as “no” and all other responses were flagged as “other”.

Access and Quality of Care Factors

The access and quality of care data include questions around insurance status and source of health care status. The multiple categories were entered into the model as binary variables to obtain a better model fit and to maximize model power. As I am interested more in whether the respondent had insurance rather than the type of insurance, this handling brought my operationalized definition closer to its original conceptualization. In addition to the type of insurance, I looked at whether the insurance covers treatment for mental health problems, such as visits to a psychologist or psychiatrist.

If the respondent answered “yes” to not having any health insurance, I want to see if it was because the respondent can’t afford it, is not eligible due to working status/ changed employer/ lost job, is not eligible due to health or other problems, is not eligible due to citizenship/ immigration status, family situation changed, don’t believe in insurance, switched insurance companies which caused a delay, can get healthcare for free, other, refused or don't know.

Sources of Healthcare

The next topics are about health care access and seek to know “Is there a place that you usually go to when you are sick or need advice about your health other than ER?”, “Do you have a personal doctor or medical provider who is your main provider?”

The multiple categories were entered into the model as binary variables to obtain a better model fitting and power. As I am interested more in whether the respondent had a source of care, this handling brought my operationalized definition closer to its original conceptualization. Additional dichotomous questions were used to identify information around difficulty with source of care, including if individual had trouble finding a general doctor, whether their insurance was not accepted by a general doctor, and their ability to get appointment in a timely way.

Sociodemographic Factors

The sociodemographic data include questions around sex, race, age, marital status, education, economic status, and English proficiency. Sex of the participant include: male, female. Race include: White, Other single race, African American, Asian, More than one race, American Indian/ Alaska Native. Range of the participant's age include: 18-29, 30-39, 40-49, 50-59, 60-69, 70+. The variables for marital status include: married, living with partner, widowed/ separated/ divorced, never married.

The variables for education take one of several values: the highest grade of education completed or received credit for no formal education or grade 1-8, grade 9- 11, grade 12/ high school diploma, some college, vocational school, AA or AS degree, BA or BS degree/ some grad school, MA or MS degree, PhD or equivalent. The approximate household's annual income from all sources before taxes is divided into series of questions: less than $20,000 per year, $20,000 to $34,999, $35,000 to $49,999, $50,000 to $74,999, $75,000 to $99,999, over $100,000. Finally, if the respondent indicated that he or she speaks a language other than English at home, I used a four level measurement of very well, well, not well, not at all to see what the respondent's opinions of how well he or she speaks English.

Dependent Variables

Help-Seeking Behaviors

Help-seeking involves three distinct elements: the person who is looking for help, the problem for which help is sought and the individual from who help is required (Cornally & McCarthy, 2011). The complex decision-making process begins with the recognition and definition of a problem, which leads to the decision to act. For analysis purposes, the following questions were selected and identified as help-seeking behaviors (see Table 7). These questions assess whether in the past 12 months individuals have seen a health care professional, forged care or delayed care. A new variable was constructed, Doctor Visit, such that an individual that indicated "yes" to any questions related to having had an interaction with a doctor in the past 12 months (visited doctor's office for preventive care, visited doctor's office for own health, or received care via video or telephone conversation), were flagged as "yes" for having had a doctor visit. Those who indicated "no" were flagged as "no" for Doctor Visit and all other responses were flagged as "other". The questions around forgoing and delaying care helped further understand the behaviors of those who indicated "no" to having seen a doctor or healthcare

Table 7

Help-Seeking Behaviors

Question	Variable	Response set	Score value
During the past 12 months, Did you visit a doctor's office For a preventive care?	CARE_PV	Yes No Refused Don't know	1 2 -7 -8
During the past 12 months, Did you visit a doctor's office For your own heatlh?	DOCT_YR	Yes No Refused Don't know	1 2 -7 -8
During the past 12 months, did You visit a hospital emergency Room for your own health?	AH12	Yes No Refused Don't know	1 2 -7 -8
During the past 12 months, did You receive care from a doctor Or health professional through Video or telephone conversation Rather than an office visit?	AJ152	Yes No Refused Don't know	1 2 -7 -8
During the past 12 months, did You forgo necessary care?	FORGO	Yes No Refused Don't know	1 2 -7 -8
During the past 12 months, did You delay or not get any other Medical care you felt you needed—such as seeing a doctor, a specialist, or other health professionals?	AH22	Yes No Refused Don't know	1 2 -7 -8

Additional Variables of Interest

Variables for Exclusion

Given that clinical, access and quality of care, and help-seeking behaviors differ when a woman is pregnant, those that identified themselves as currently pregnant were excluded in the study. After excluding respondents who were pregnant, the final analytic sample consisted of 1,678 respondents.

Variables of Descriptive Statistics Purposes

To further understand the sample population, descriptive analysis was conducted on the following variables: Main reason for delaying needed care, whether or not the respondent eventually received medical care that was delayed, cost or having no insurance delayed getting needed care, and whether there is a usual source of care.

Data Analysis

IBM SPSS Statistics, version 25, was used for all analyses, and the alpha level of 0.05 was used to determine statistical significance. SAS, version 9.4, was used for data cleaning such as creating new variables (chronic health condition and psychiatric/ emotional health condition under clinical factors, source of health care and difficulty with source of health care under access and quality of care factors, and doctor visit under help-seeking behaviors).

Simple descriptive statistics, including frequency counts and percentages for characterizing categorical variables, and measures of central tendency (e.g., means) and spread (e.g., standard deviations and ranges) for continuous variables were used in this study. For multivariable analyses, logistic regression analyses were performed. Logistic regression analysis methods were appropriate to address the following research questions because it is a predictive analysis used to assess the strength of association between multiple independent variables and dependent variables (Sperandei, 2014). Specially, a logistic regression is appropriate when the dependent variable is dichotomous with two likely outcomes and the independent variables of any types (Agresti, 2007). My dependent variables and independent variables meet this criterion.

Hosmer and Lemeshow (2000) provide the logistic regression calculation which is:

$$\pi(x) = \frac{e^{\beta}o + b1x}{1 + e^{\beta}o + b1x}$$

The logistic regression model includes the logit transformation in terms of as $\pi(x)$. It is

$$g(x) = ln\frac{\pi(x)}{1 - \pi(x)}$$

$$= \beta_o + \beta_1 X$$

The logit, *g(x)* is linear in its variable values, may be continuous, and may range from -∞ to +∞ depending on the range of x (Hosmer et al., 2000, p 6). Logistic regression models the logit-transformed probability as a linear relationship (Hosmer et al., 2000). This study examines the relationship among multiple predictors and the help-seeking behaviors among individuals with SPD.

Each logistic regression analysis was evaluated using the Hosmer-Lemeshow goodness of fit (GOF) statistic to assess whether the model is correctly specified. If the GOF test produces a p-value < 0.05, there was evidence of lack of model fit. In such circumstances, I grouped cases together according to their predicted values from the logistic regression model, arraying the predicted values from lowest to highest, and then separating them into several groups of approximately equal size until the final model has no evidence of lack of fit (Hosmer, & Lemeshow, 1980).

Finally, Wald statistical tests was used to determine whether an independent variable is significant at p-value < 0.05 by testing whether the regression coefficient for each independent variable was significantly different than zero (UCLA Institute for Digital Research & Education, 2019). Failing to reject the null hypothesis (variable does not equal zero) indicates that the variable contributes to the model and thus will affect the model fit if removed. Rejecting the null hypothesis (variable equals zero) indicates that the variable has no effect in the model and can be removed without affecting the model fit (UCLA Institute for Digital Research & Education, 2019).

My research questions and associated hypotheses were as follows:

RQ1: What are general help-seeking behaviors of individuals with SPD?

RQ2: Are clinical factors associated with help-seeking behaviors among individuals with SPD?

H_0*2:* Clinical factors are not significantly associated with help-seeking behaviors among individuals with SPD.

H_a*2:* Clinical factors are significantly associated with help-seeking behaviors among individuals with SPD.

RQ3: Are access and quality of care factors associated with help-seeking behaviors among individuals with SPD?

H_0*3:* Access and quality of care factors are not significantly associated with help-seeking behaviors among individuals with SPD.

H_a3: Access and quality of care factors are significantly associated with help-seeking behaviors among individuals with SPD.

RQ4: Are sociodemographic factors associated with help-seeking behaviors among individuals with SPD?

$H_0$4: Sociodemographic factors are not significantly associated with help-seeking behaviors among individuals with SPD.

H_a4: Sociodemographic factors are significantly associated with help-seeking behaviors among individuals with SPD.

Threats to Validity

Internal and external validity are two types of validity that can affect the result of the study. Internal validity is “the degree to which we can appropriately conclude that the changes in X caused the changes in Y” (Seltman, 2018, p 193). However, even though my study assesses confounding variables that may influence the relationship between the independent and dependent variables due to the study is not designed to access causation, there may be additional factors not accounted for that may threaten the internal validity of my study. External validity is synonymous with generalizability (Trochim, 2006). Since my study focuses on adult respondents, age 18 and above, living in California with access to either landline or cell phone, the external validity of my results is therefore limited to this target population.

Threats to measurement validity constitute another issue that can affect my results thereby altering my conclusions. The measurement validity of landline and cellular phone interviews are often viewed as suspect because they may lead to socially desirable responses that may result in over-reporting of desirable behaviors and under-reporting of undesirable behaviors (Mickalide, 1997). In addition, because I used the interview data without collecting it myself (secondary data source) and my concepts of these response may be markedly different from those under which the survey question was originally asked, this could contribute bias or at least error. For example, among my variables, a few with multiple categories, e.g. insurance status, source of health care, were entered into my models as binary variables for my analyses. However, despite these concerns, and although a set of “Yes”/”No” questions were not used in the survey, I believe that my data may be valid and would not significantly impact my study.

Maxwell (1992) observed that quantitative research attempts to establish that validity is not a single, fixed or universal concept, but rather a set of constructs that measure phenomena into common categories that can be applied to all of the subjects or wider and similar situations. Hence, because the research is measuring what it was intended to measure and the data are sufficiently valid on target constructs, within the quantitative definition, it may be judged valid and replicable on the merits of its generalizability.

RTI International was responsible for data collection for CHIS and it used the Questionnaire Appraisal System (QAS) to ensure that each question that was asked to the respondents examined potential issues related to question reading, instructions, overall clarity, and assumptions that the question makes (CHIS, 2017). The trained experienced interviewers went through a pilot test and the results of the observations and debriefing from the pilot study helped inform decisions about cutting and modifying questions between the pilot test and the main study. Bilingual data collectors were also trained along with English-only data collectors, and this intensive project-specific training for CHIS interviewers allowed for consistent and accurate delivery of the survey.

When testing my hypotheses, because they are based on probabilities, I need to be aware that there is a chance of making an incorrect conclusion. Type I error occurs when the null hypothesis is true and I fail to accept it. Since I am setting alpha at 0.05, it means that I am willing to accept a 5% chance that I am wrong when I fail to accept the null hypothesis. Type II error occurs when the null hypothesis is false and I fail to reject it, making a type II error. I decreased my risk of committing a type II error by ensuring that my test has enough power by ensuring that my sample size is large enough to detect a practical difference when one truly exists. In order to help reduce potential threats to statistical conclusion and validity, the level of significance (α) is set to .05 and statistical power is set to 80%.

Protection of Human Subjects

CHIS obtain certificate from the National Institutes of Health. The certificate protects the confidentiality of respondents and the information they provide from forced disclosure, such as a court subpoena (CHIS, 2017). The confidentiality of all participants, and protocols for participant recruitment, data collection, and the dissemination and storage of data is governed by the UCLA Office for the Protection of Research Subjects, the California Committee for the Protection of Human Subjects, and the federal Office of Management and Budget. The UCLA South General Institutional Review Board (IRB) has approved the DAC to conduct analyses of confidential CHIS data (UCLA IRB #11-

002227). In addition, California law, the University of California, and several government human subject protection committees, require that no personal information be released that could be used to identify an individual participant in CHIS. The California Information Practices Act (section 1798.24) also requires that the data collected in this survey can be used only for statistical research and reporting purposes, therefore, any release of personal information violates this law. The person responsible for any unauthorized release is subject to civil action and penalties for invasion of privacy under California Civil Code, Section 1798.53.

Summary

In the U.S., approximately 46.6 million Americans over the age of 18 have experienced some form of mental illness in the past year (Center for Behavioral Health Statistics and Quality, 2017). The negative impact of delayed help-seeking behavior on the person, such as delayed diagnosis and treatment, and the poor outcomes that result from neglecting to get help can lead to social problems. The factors that influence the decision to seek help in adults with SPD thus must be addressed if interventions are to improve help-seeking behavior among this population. In Chapter 3, I described my study methodology including my research questions, research design, data source, study variables, data analysis plan, sampling procedures and threats to validity. I used a cross-sectional study design to investigate the associations among clinical factors, access and quality of care factors, and sociodemographic factors and help-seeking behaviors among adults with SPD. In Chapter 4, I present my results based upon the data source and methodologies discussed in Chapter 3.

Chapter 4: Results

The purpose of this quantitative cross-sectional secondary data analysis was to investigate the relationship between patient factors and help-seeking behaviors among adults with SPD. My research questions and associated hypotheses were as follows:

RQ1: What are general help-seeking behaviors of individuals with SPD?

RQ2: Are clinical factors associated with help-seeking behaviors among individuals with SPD?

H_02: Clinical factors are not significantly associated with help-seeking behaviors among individuals with SPD.

H_a2: Clinical factors are significantly associated with help-seeking behaviors among individuals with SPD.

RQ3: Are access and quality of care factors associated with help-seeking behaviors among individuals with SPD?

H_03: Access and quality of care factors are not significantly associated with help-seeking behaviors among individuals with SPD.

H_a3: Access and quality of care factors are significantly associated with help-seeking behaviors among individuals with SPD.

RQ4: Are sociodemographic factors associated with help-seeking behaviors among individuals with SPD?

H_04: Sociodemographic factors are not significantly associated with help-seeking behaviors among individuals with SPD.

H_a4: Sociodemographic factors are significantly associated with help-seeking behaviors among individuals with SPD.

In this chapter, I include statistical analysis findings to answer research questions. Specifically, I discuss data collection, data analysis results, including descriptive and inferential analyses, and a summary of the chapter.

Data Collection

Time Frame

I analyzed data from the CHIS. Specifically, I used the 2015 version of CHIS, the most recent available, and included data on 42,089 adults collected between May 2015 and December 2016. As noted in Chapter 3, the survey was conducted via RDD and designed to achieve a distribution of 50% landline and 50% cellular phone numbers. The overall response rate for CHIS 2015 was 10.1%, which is similar to other comparable telephone-based surveys.

Description of Data Collection

As I employed existing data sources, I was required to download data that had already been collected by CHIS staff members. There were no discrepancies in data retrieved from the CHIS website, and I was able to download all data during the time period of interest.

Baseline Descriptive Demographic Characteristics

There were 42,089 individuals who participated in the CHIS 2015 survey. I applied my inclusion/exclusion criteria for this study as follows. First, I used the standardized and validated K6 scale to narrow down my analytic sample to those with

SPD, which excluded 38,727 respondents. An additional six persons who self-identified as currently pregnant were also excluded. The final analytic sample consisted of 1,678 remaining individuals. The sample had a mean age of 48 years. My sample was 61.3% female and 59.5% White, and 30.4% had at least a high school diploma.

Sample Representativeness

To capture the rich diversity of the California population, CHIS staff conducted the survey in six languages (English, Spanish, Chinese, Vietnamese, Korean, and Tagalog), chosen based on staffs analysis of 2010 census data to identify languages spoken by Californians in their sample who either did not speak English or did not speak English well enough to participate. My analytic sample consisted of 1,678 respondents (4.0%) who scored above 13 on the K6 scale.

Results

Descriptive Statistics

Table 8 shows sociodemographic characteristics of the 1,678 study participants. 61.3% of study participants were women (*n* = 1,029; 61.3%). 59.5% were White (*n* = 999), and approximately 8% (*n* = 140) self-identified as African American. 23.7% were married (n = 398). The mean age was 48 (*SD* = 17.5) years and ages ranged from 18 to 85. Of the 1,678 study participants, 855 (51.0%) answered the household income question; 51.8% of respondents earned less than $20,000/year (*n* = 443).

Table 8

Sociodemographics of Study Participants

Variables		
Sociodemographic factors	*N*	%
Sex		
Male	649	38.7
Female	1,029	61.3
Race		
White	999	59.5
Other single race	246	14.7
African American	140	8.3
Asian	132	7.9
More than one race	96	5.7
American Indian/Alaska Native	65	3.9
Age (years)		
Mean+SD	48	16.9
18-29	284	11.2
30-39	188	13.5
40-49	227	28.2
50-59	473	18.2
60-69	306	12.0
70+	200	16.9

Variables		
Sociodemographic factors	N	%
Marital status		
Married	398	23.7
Living with partner	137	8.2
Widowed Separated/Divorced	649	38.7
Never married	494	29.4
Household Family Income (N=855)		
Less than $20,000	443	51.8
$20,000 to $34,999	152	17.8
$35,000 to $49,999	80	9.4
$50,000 to $74,999	86	10.1
$75,000 to $99,999	31	3.6
Over $100,000	63	7.4
Education		
No formal education or Grade 1–8	216	12.9
Grade 9-11	189	11.3
Grade 12/High school diploma	510	30.4
Some college	289	17.2
Vocational school	57	3.4
AA or AS degree	127	7.6
BA or BS degree/Some grad school	210	12.5
MA or MS degree	62	3.7
PhD or equivalent	18	1.1
English Proficiency (N=650)		
Very well	231	35.5
Well	143	22.0
Not well	148	22.8
Not at all	128	19.7

In Table 9, I describe the clinical physical and mental health status of the study participants. Physical health status includes general health condition and chronic health conditions of respondents. Mental health status includes psychiatric/emotional health conditions. Two thirds of study participants (n=1,122; 66.9%) indicated they had one or more chronic health conditions (e.g., asthma, diabetes, hypertension, or heart disease). As all respondents suffered from SPD, nearly all of them (n=1,603; 95.5%) had experienced one or more psychiatric/emotional health conditions.

Table 9

Clinical Health Status of Study Participants

Variables		
Clinical factors	*N*	%
Physical health status		
General health condition		
Excellent	59	3.5
Very Good	158	9.4
Good	367	21.9
Fair	550	32.8
Poor	544	32.4
Chronic health condition		
Yes	1,122	66.9
No	556	33.1
Mental Health Status		
Psychiatric/Emotional health condition		
Yes	1,603	95.5
No	75	4.5

In Table 10, I provide information on the respondents' access to care and quality-of-care status, divided into insurance status and source of health care to better understand potential barriers to respondents seeking care. Most had some form of insurance, at least for the previous year (n=1,138; 67.8%), with more than half of respondents (n=942; 56.1%) having insurance that covered mental health. Most participants (n=1,398; 83.3%) also indicated they had a usual source of care other than the emergency room or had a personal doctor; however, nearly one-half (n=808; 48.2%) reported at least some difficulty in accessing care for various reasons including trouble finding a general doctor, having insurance that was not accepted, or being unable to get an appointment in a timely manner.

Table 10

Access and Quality of Care Status of Study Participants

Variables		
Access and Quality of Care Factors	*N*	%
Insurance Status		
Uninsured	147	8.8
Medicare/Medicaid	329	19.6
Medicare/Others	138	8.2
Medicare only	57	3.4
Medicaid	665	39.6
Employment based	237	14.1
Privately purchased	73	4.4
Other public	32	1.9
Insurance covers mental health		
N/A	499	29.7
Yes	942	56.1
No	194	11.6
No insurance	43	2.6
Uninsured in past 12 months		
Skipped .ages >=65	308	18.4
Uninsured all year	101	6.0
Uninsured part year	131	7.8
Insured all year	1,138	67.8
Source of health care		
Yes	1,398	83.3
No	280	16.7
Difficulty with source of health care		
Yes	808	48.2
No	870	51.8

Statistical Assumptions

I used logistic regression as my methodology for examining the relationships between the various predictor variables of interest and the outcomes. All logistic regression assumptions, as outlined in Chapter 3, were tested. All relevant variables were included. The range of values for the dependent variable was 0 or 1 (Katz, 2011). To test for multicollinearity, the variance inflation factor (VIF) and tolerance were tested. I did this by performing a linear regression in SPSS using help-seeking behaviors as the dependent variables and loading all of the independent variables in the model at once. I used only results of the tests for multicollinearity. For all independent variables, VIF ranged from 1.0 to 2.4, thus multicollinearity was not a problem as these values were all less than 10, a threshold commonly employed for establishing possible multicollinearity. (Dormann, 2013). Tolerance levels ranged from 0.46 to 0.98, which, as a tolerance level of 0.10 or less suggests multicollinearity, also indicates that multicollinearity between variables was not an issue (Lee, 2013)

Results for RQ1

My first research question was designed to examine the general help-seeking behaviors (doctor visit, forgoing care, and delaying care) among individuals with SPD. Regarding doctor visits, 1,547 respondents (92.2%) had in the past year had a doctor visit, a preventive care visit, or care via video or telephone conversation. However, 368 respondents (21.9%) indicated that they had had to forgo care and 588 respondents (35.0%) delayed care for various reasons, including anxiety, fear, or avoidance of medical care and cost (Table 11).

Table 11

Help-Seeking Behaviors of Study Participants

Variables		
Help-Seeking Behaviors	*N*	%
Doctor visit		
Yes	1,547	92.2
No	131	7.8
Forgoing care		
Yes	368	21.9
No	1310	78.1
Delaying care		
Yes	588	35.0
No	1090	65.0

Results for RQ2-RQ4

To answer RQ2, RQ3, and RQ4, I performed three separate binary logistic regression analyses to examine the association between predictor variables, including clinical factor variables, access and quality of care factor variables, and sociodemographic factor variables to the three specific help-seeking behaviors (doctor visit, forgoing care, delaying care). The logistic regression models were generated using the Enter method, a procedure for variable selection in which all variables in block are entered in a single step (Wuensch, 2020); Model 1 included the outcome for the help-seeking behavior of doctor visits, Model 2 included the outcome of forgoing care, and Model 3 included of the outcome of delaying care. I provided details of model fit then I discussed individual model results and how they address each of RQ2, RQ3, and RQ4.

The results for Model 1 (whether the participant had a doctor visit in the past 12 months), are presented in Table 12. The model fit chi-square was significant ($X^2(19), = 130.25, p < 0.001$), indicating that the model was able to discriminate between participants who did and did not visit a doctor. The Hosmer-Lemeshow goodness of fit test had a p-value of 0.43, indicating no evidence of lack of model fit.

Table 12

Factors Associated with Doctor Visit in SPD Patients After Adjusting for Predictor Variables (Model 1)

Predictors	Beta	Standard error	Wald	Odds Ratio (95% confidence interval)	p-value
Clinical Factors					
General Health Condition	-0.14	0.14	0.97	0.87 (0.66, 1.15)	0.33
Chronic Health Condition	0.67	0.30	4.89	1.94 (1.08, 3.48)	**0.03**
Mental Health Condition	1.02	0.58	3.06	2.78 (0.88, 8.72)	0.08
Access and Quality of Care Factors					
Insurance Status	-0.12	0.07	2.66	0.89 (0.77, 1.02)	0.10
Source of Health Care	1.94	0.32	38.07	6.99 (3.77, 12.95)	**0.001**
Difficulty with Source of Health Care	0.98	0.34	8.47	2.68 (1.38, 5.19)	**0.004**
Sociodemographic Factors					
Sex	-0.24	0.31	0.61	0.79 (0.43, 1.44)	0.43
Race					
White (reference)					
Other single race	0.72	0.42	3.02	2.06 (0.91, 4.66)	0.08
American Indian/ Alaska Native	-0.26	0.72	0.13	0.78 (0.19, 3.19)	0.72
Asian	0.75	0.61	1.52	2.11 (0.64, 6.92)	0.22
African American	0.06	0.61	0.10	1.06 (0.32, 3.52)	0.92
More than one race	-0.09	0.70	0.02	0.91 (0.23, 3.57)	0.90
Age	-0.01	0.01	0.47	1.00 (0.97, 1.01)	0.50
Marital Status					

Predictors	Beta	Standard error	Wald	Odds Ratio (95% confidence interval)	p-value
Never married (ref)					
Married	-0.97	0.45	4.59	0.38 (0.16, 0.92)	**0.03**
Living with partner	-0.04	0.54	0.01	0.96 (0.34, 2.77)	0.95
Widowed/ separated/ Divorced	-0.55	0.41	1.83	0.58 (0.26, 1.28)	0.18
Education	-0.10	0.09	1.36	0.90 (0.76, 1.07)	0.24
Economic Status	0.04	0.10	0.15	1.04 (0.85, 1.28)	0.70
English Proficiency	0.00	0.11	0.00	1.00 (0.81, 1.23)	0.99

Note. Outcome variable (doctor visit) coded as 1 for *yes* and 0 for *no*. Bolded values represent significance with p<0.05 and adjusted for all other predictor variables

The results for Model 2 (whether the participant had to forgo care in the past 12 months), are presented in Table 13. As with Model 1, the model fit chi-square was significant ($X^2(19), = 63.88, p < 0.001$), indicating that the model was able to discriminate between participants who did and did not forgo care. The Hosmer-Lemeshow test yielded a p-value of 0.19, indicating no evidence of lack of fit.

Table 13

Factors Associated with Forgoing Care in SPD Patients After Adjusting for Predictor Variables (Model 2)

Predictors	Beta	Standard error	Wald	Odds Ratio (95% confidence interval)	p-value
Clinical Factors					
General Health Condition	0.10	0.08	1.33	0.91 (0.77, 1.10)	0.25
Chronic Health Condition	-0.36	0.18	3.88	0.70 (0.49, 0.89)	**0.04**
Mental Health Condition	0.52	0.51	1.04	1.68 (0.62, 4.58)	0.31
Access and Quality of Care Factors					
Insurance Status	0.13	0.05	7.87	1.13 (1.04, 1.24)	**0.005**
Source of Health Care	-0.40	0.23	3.12	0.67 (0.43, 1.04)	0.08
Difficulty with Source of Health Care	0.47	0.18	7.12	1.60 (1.13, 2.25)	**0.008**

Predictors	Beta	Standard error	Wald	Odds Ratio (95% confidence interval)	*p*-value
Sociodemographic Factors					
Sex	-0.04	0.18	0.06	0.96 (0.67, 1.36)	0.81
Race					
White (reference)					
Other single race	0.75	0.29	6.53	2.12 (1.19, 3.76)	**0.01**
American Indian/ Alaska Native	0.40	0.41	0.91	1.48 (0.66, 3.32)	0.34
Asian	1.47	0.55	7.13	4.34 (1.48, 12.76)	**0.008**
African American	1.03	0.38	7.45	2.8 (1.34, 5.86)	**0.006**
More than one race	-0.18	0.31	0.33	0.84 (0.45, 1.54)	0.57
Age	0.01	0.01	4.87	1.01 (1.01, 1.03)	**0.03**
Marital Status					
Never married (ref)					
Married	0.07	0.25	0.09	1.08 (0.66, 1.75)	0.77
Living with partner	-0.03	0.32	0.01	0.98 (0.52, 1.83)	0.94
Widowed/ separated/ divorced	0.12	0.23	0.26	1.13 (0.71, 1.78)	0.61
Education	-0.04	0.05	0.84	0.96 (0.88, 1.05)	0.36
Economic Status	-0.02	0.06	0.10	0.98 (0.88, 1.10)	0.76
English Proficiency	0.02	0.06	0.07	1.02 (0.90, 1.15)	0.80

Note. Outcome variables (forgoing care) coded as 1 for *yes* and 0 for *no*. Bolded values represent significance with p<0.05 and adjusted for all other predictor variables

The results for Model 3 (whether the participant had to delay care in the past 12 months), are presented in Table 14. The model fit chi-square was significant ($X^2(19), = 68.62, p < 0.001$), which indicates that the model was able to discriminate between participants who did and did not delay care. The Hosmer-Lemeshow test p-value was 0.91 indicating no evidence of lack of fit.

Table 14

Factors Associated with Delaying Care in SPD Patients After Adjusting for Predictor Variables (Model 3)

Predictors	Beta	Standard error	Wald	Odds Ratio (95% confidence interval)	*p*-value
Clinical Factors					
General Health Condition	-0.33	0.08	16.92	0.72 (0.61, 0.84)	**0.001**
Chronic Health Condition	-0.11	0.18	0.36	0.90 (0.64, 1.27)	0.55
Mental Health Condition	0.16	0.41	0.16	1.18 (0.52, 2.65)	0.69
Access and Quality of Care Factors					
Insurance Status	0.02	0.04	0.17	1.02 (0.94, 1.1)	0.68
Source of Health Care	-0.06	0.22	0.06	0.95 (0.61, 1.47)	0.80
Difficulty with Source of Health Care	0.57	0.16	12.79	1.77 (1.3, 2.42)	**0.001**
Sociodemographic Factors					
Sex	-0.35	0.17	4.18	0.71 (0.51, 0.99)	**0.04**
Race					
White (reference)					
Other single race	0.38	0.26	2.14	1.47 (0.88, 2.44)	0.14
American Indian/ Alaska Native	-0.42	0.36	1.33	0.66 (0.32, 1.34)	0.25
Asian	0.71	0.40	3.20	2.03 (0.93, 4.42)	0.07
African American	-0.01	0.28	0.00	1.00 (0.58, 1.72)	0.99
More than one race	-0.65	0.30	4.62	0.52 (0.29, 0.94)	**0.03**
Age	0.02	0.01	7.44	1.02 (1.01, 1.03)	**0.006**
Marital Status					
Never married (ref)					
Married	-0.29	0.23	1.49	0.75 (0.48, 1.19)	0.22
Living with partner	-0.04	0.31	0.02	0.96 (0.53, 1.76)	0.90
Widowed/ separated/ Divorced	-0.51	0.22	5.60	0.60 (0.40, 0.92)	**0.02**
Education	-0.03	0.04	0.45	0.97 (0.90, 1.06)	0.50
Economic Status	0.05	0.05	0.94	1.05 (0.95, 1.17)	0.33
English Proficiency	-0.01	0.06	0.04	0.99 (0.88, 1.11)	0.84

Note. Outcome variable (delaying care) coded as 1 for *yes* and 0 for *no*. Bolded values represent significance with $p<0.05$ and adjusted for all other predictor variables

Results for RQ2

RQ2 designed to examine the independent associations between clinical factors (physical health status, mental health status) and help-seeking behaviors in individuals with SPD.

Participants with a chronic health condition had nearly twice the odds of having had a doctor visit than those who did not in multivariable analyses (adjusted odds ratio (aOR) 1.94, 95% confidence interval (CI) [1.08,3.48], p=0.03) (Table 12). The general health condition of the participant and their mental health condition were not significant predictors of a doctor visit in the past 12 months.

Participants with a chronic health condition had lower odds of forgoing care (aOR 0.70, 95% CI [0.49, 0.89], $p = 0.04$) than those without a chronic health condition (Table 13). Neither the participant's general health condition nor their mental health condition constituted a significant predictor of forgoing care.

The general health condition of participants was significantly associated with delaying care, i.e., those with a general health condition had lower odds of delaying care (aOR 0.72 95% CI [0.61, 0.84], p<0.001) (Table 14). The presence of a chronic health condition or a mental health condition (beyond the SPD) was not significantly associated with a tendency to delay care.

Results for RQ3

RQ3 was designed to look at access to and quality of care factors (insurance status, source of health care) to determine whether these factors were independently associated with help-seeking behaviors among individuals with SPD.

Those who did not report issues with access to health care had seven times the odds of having had a doctor visit (aOR 6.99, 95% CI [3.77, 12.95], p<0.001) (Table 12). The odds of having a doctor visit among those that had had issues with access to health care were 2.68 times higher than for those who did not (aOR 2.68, 95% CI [1.38, 5.19], p<0.004). Insurance status was not a significant predictor of a doctor visit.

Insurance status and issues with access to health care were significant predictors of forgoing care (Table 13). The odds of forgoing care among those that were not insured was 13% higher than for those that were insured (aOR 1.13, 95% CI [1.04, 1.24], p<0.005). The odds of forgoing care were 1.60 times as high for those who had had issues with access to health care (aOR 1.60, 95% CI [1.13, 2.25], p<0.008). However, those who did not report issues with access to health care were not significantly associated with forgoing care.

Finally, those who had had issues with access to health care had a statistically significant association with delaying care (Table 14). The odds of delaying care were 1.77 times as high for those that had had issues with access to health care than for those who did not (aOR 1.77, 95% CI [1.30, 2.42], p<0.001). Insurance status and source of health care status were not significant predictors of delaying care.

Results for RQ4

RQ4 was designed to examine the independent associations between sociodemographic factors (sex, race, age, marital status, education, economic status, English proficiency) and help-seeking behaviors in individuals with SPD.

Marital status was the only sociodemographic predictor that showed significance to doctor visit (Table 12). Those who were married had lower odds of delaying care compared to those who had never married (aOR 0.38, 95% CI [0.16, 0.92], p=0.03). Sex, race, age, education, economic status and English proficiency were not significant predictors of doctor visit.

Race and age were significant predictors of forgoing care (Table 13). Compared to those of White race, those of other single race, Asians, and African Americans had higher odds of forgoing care (aOR 2.12, 95% CI [1.19,3.76], p=0.01; aOR 4.34, 95% CI [1.48,12.76], p=0.008; and, aOR 2.80, 95% CI [1.34, 5.86], p=0.006, respectively). For age, a one-year increase increased the odds of forgoing care about 1% (aOR 1.01, 95% CI [1.01, 1.03], p=0.03). However, sex, marital status, education, economic status, English proficiency of respondents were not significant predictors of forgoing care.

Sex, race, age and marital status were significant predictors of delaying care (Table 14). Females had lower odds than males for delaying care (aOR 0.71, 95% CI [0.51, 0.99], p=0.04). For race, those of more than one race had lower odds than Whites (the reference group) of delaying care 0.52 (0.29, 0.94) (aOR 1.92, 95% CI [1.06, 3.45], p=0.03). Similar to forgoing care, an increase of a year in age increased the chances of delaying care by about 2% (aOR 1.02, 95% CI [1.01, 1.03], p=0.006). Looking at marital status, those who were widowed/ separated/divorced had lower odds of delaying care (aOR 0.60, 95% CI [0.40, 0.92], p=0.02) as those who had never married (the reference group). Education, economic status, English proficiency were not significant predictors of delaying care.

Summary

My purpose in this quantitative, cross-sectional study was the investigation of possible associations between clinical factors, factors of access to and quality of care, and sociodemographic factors and help-seeking behaviors among adults with SPD.

I found that those with a general health condition had lower odds of delaying care but their general health did not influence whether they had had a doctor visit or whether they were likely to forgo care. On the other hand, if the participants had a chronic health condition, they had significantly increased odds to have had a doctor visit or to forgo care, but not to delay care. Finally, other mental health condition (i.e., apart from SPD) did not have an impact on any of the help-seeking behavior outcomes.

Whether the respondent had health insurance statistically was significantly associated with whether they would forgo care, but did not influence whether they had had doctor visit or had increased odds to delay care. The respondents' access to health care was statistically significantly associated with whether they had had a doctor visit, but was not associated with whether they had increased odds to forgo care or delay care. Finally, respondents who had had issues with access to health care were statistically significantly higher odds to both delay or forgo care as well as to have had a visit with their doctor (suggesting that perhaps this visit had caused them to be reluctant to go to that doctor again).

With respect to sociodemographic factors, I found that men had higher odds of delaying care than women; however, sex was not associated with whether respondents had a doctor visit, nor whether they had increased odds to forgo care. When compared to their White counterparts, Asians and African Americans had statistically significantly increased odds of forgoing care. Increasing age was statistically associated with forgoing care or delaying care. Those who were married had significantly greater odds of having had a doctor visit than those who were never married; those who were widowed, separated, or divorced had significantly greater odds of delaying care. Neither education, economic status, nor English proficiency of the respondents predicted help-seeking behaviors among individuals with SPD.

In Chapter 5, I present my conclusions, including an interpretation of my findings, their relationship to the literature, implications for action, and recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Previous researchers have attempted to compare help-seeking behaviors and health-related outcomes among those with and without SPD. However, there remains a lack of understanding regarding decisions to seek healthcare made by adults with SPD. Even though the number of individuals with SPD who obtain mental health treatment has increased since the early 1990s, the majority of such individuals remain untreated or undertreated (Krupski et al., 2016; Weissman et al., 2017; Ye et al., 2012). My purpose in this quantitative cross-sectional study was to investigate reasons for seeking or not seeking healthcare among adults with SPD, as potentially indicated by an assessment of possible associations between clinical factors, quality of care, and sociodemographic characteristics.

I found that those with general health conditions had lower odds of delaying care, but their general health did not influence whether they had had a doctor visit or greater odds of forging care. If participants had chronic health conditions, they had significantly increased odds of doctor visits or forgoing care, but not delaying care. Other mental health conditions did not have an impact on help-seeking behavior outcomes.

Respondents' access to healthcare was significantly associated with whether they had had doctor visits, but not associated with whether they had higher odds of forgoing or delaying care. In addition, those who had had issues with access to healthcare were significantly associated with increased delaying or forgoing care as well as visiting with their doctor.

With respect to sociodemographic factors, I found that men had higher odds of delaying care than women; however, sex was not associated with whether respondents had had a doctor visit, nor whether they had higher odds of forgoing care. When compared to their White counterparts, Asians and African American were positively associated with forgoing care. Increasing age was significantly associated with forgoing care or delaying care. Those who were married had significantly greater odds of having had a doctor visit than those who were never married; those who were widowed, separated, or divorced had significantly greater odds of delaying care. Education, economic status, and English proficiency of respondents did not predict help-seeking behaviors among individuals with SPD.

In this chapter, I discuss interpretations of my findings, limitations of results, recommendations for future research, implications for social change resulting from my findings.

Interpretation of Findings

As part of my work, I have descriptively characterized individuals with SPD in California and attempted to determine how these characteristics are associated with help-seeking behaviors. I used Mechanic’s definition of help-seeking behaviors for psychological distress, which include obtaining resources such as advice, information, support, and assistance from family, friends, and healthcare professionals. I specifically examined whether individuals sought help from healthcare professionals in the previous 12 months, forewent or delayed seeking care.

RQ1

RQ1 was: What are the general help-seeking behaviors of individuals with SPD? As detailed in Chapter 3, I conducted a descriptive statistical analysis of my population for categorical variables as well as measures of central tendency and spread for continuous variables. I attempted to address complex decision-making processes involved in deciding to seek as well as obtain help by assessing interactions with doctors in the previous 12 months. I further classified those who indicated no interaction with any doctor to understand the behavior of those who indicated “no” to having seen a doctor or healthcare professional.

SPD is an important individual and public health burden, but a significant number of individuals do not seek professional help. According to Weissman et al. (2017), even though the number of SPD-affected individuals obtaining mental health treatment has increased since the early 1990s, the majority of such individuals remain untreated or undertreated. Weissmann et al. said compared to adults without SPD, those with SPD were more than twice as likely to experience delays in care. I found that 368 respondents (21.9%) did not obtain care at all, while 588 respondents (35.0%) delayed care for various reasons, including anxiety, fear, and avoidance of medical care and cost. Ye et al. (2012) said stigma and fear of the medical establishment reduced use of healthcare services, and SPD was positively associated with fear of having a serious illness and thoughts of mortality. I was not able to study fear and stigma of the medical establishment in my study, but looked at other factors and found that costs were associated with not obtaining timely care. Increased healthcare use and costs tended to cause respondents to either forgo or delay mental health care.

RQ2- RQ4

For RQ2, I asked: Are clinical factors associated with help-seeking behaviors among individuals with SPD? For RQ3, I asked: Are access and quality of care factors associated with help-seeking behaviors among individuals with SPD? For RQ4, I asked: Are sociodemographic factors associated with help-seeking behaviors among individuals with SPD?

To answer these questions, I conducted logistic regression analyses. More specifically, I performed three separate binary logistic regression analyses to examine the association between predictor variables, including clinical factor, access and quality of care factor, and sociodemographic factor variables and three specific help-seeking behaviors (doctor visit, forgoing care, delaying care). Logistic regression models were generated using the enter method, a procedure for variable selection in which all variables are entered in a single step; Model 1 included outcomes of help-seeking behaviors of doctor visits, Model 2 includes outcomes of forgoing care, and Model 3 includes outcomes of delaying care.

I defined individuals with at least one chronic health condition (asthma, diabetes, hypertension, or heart disease) as having a chronic health condition. Results indicated that these individuals had greater odds of having had a doctor visit and lower odds of forgoing care. Individuals with chronic health conditions may have higher odds of using healthcare services and lower odds of forgoing care. Many individuals with chronic health conditions require ongoing care so they may be more aware of understanding and using health literacy to make informed decisions about healthcare planning compared to their counterparts who may have low health insurance literacy and therefore do not use appropriate services (Sartorious, 2013; Smith, Langan, McLean, Guthrie, & Mercer, 2013). Forgoing care may result in unnecessary morbidity or mortality and greater severity of illness, and can be particularly damaging for those with diseases such as asthma, diabetes, and hypertension; diagnosis and treatment during early stages may prevent further complications and prolong survival (Sartorious, 2013; Serrano et al., 2011). Promoting access to high-continuity care is therefore an essential strategy for improving chronic disease care and outcomes.

I also found that those with a general health condition were less prone to delaying care. Respondents who self-reported their health as fair or poor had lower odds of delaying care than those that replied their general health condition to be excellent, very good or good. Delayed care may result in a more serious illness for the patient, a worse prognosis or a longer or avoidable hospital stay, which may all lead to seeking appropriate care in a timely fashion because they want to avoid more complications to their preexisting conditions (Addington, 1999; Brumley et al., 2007; Robert Wood Johnson Foundation, 2020). However, even if patients self-report their health as fair or poor, difficulty with their source of health care was a significant predictor of the respondents forgoing care or delaying care. According to Shen and Lee (2018), long appointment wait times are emerging as major impediments to a quality patient experience, as nearly one in five patients have switched providers when a wait time has become too long. The report, based on a survey of nearly 700 patient respondents, included a review of the state of patient wait times between 2008 and 2017. 84% of those respondents stated that a reasonable wait time was somewhat or very important to a quality patient experience (Shen et al., 2018). Patients who reported limited access to care (53%) had higher odds to leave appointments due to a long wait time signifying that positive patient care experiences are generally associated with greater provider adherence to recommended maximum wait times (Shen et al., 2018).

Researchers have also reported an inappropriate use of emergency departments (EDs) for nonemergency conditions. O'Malley (2004) and Tsai et al. (2018) found that an inappropriate use of EDs for nonemergency conditions may also result in less effective preventive care and chronic disease management, as well as higher health care costs, although there is significant debate about how precisely to measure the appropriateness of an ED visit. ED care is more expensive than other types of care, as confirmed by Fay (2019), who reported that the average cost of an ED visit for a common condition such as a sore throat is about \$525 compared to a cost of about \$53 for an office visit. My finding corroborates that of Stockbridge et al. (2014), i.e., that SPD was not associated with increasing numbers of ED visits in individuals with one or more visits. Alhussain et al. (2017) said more than half of adults with multimorbidity and SPD used the ED in the past 12 months, compared to nearly a quarter of adults with multimorbidity and no SPD used the ED in the past 12 months. Patients who visit hospital EDs had problems that could have been managed appropriately in a general primary care practice (Arnett, Thorpe, Gaskin, Bowie, & LaVeist, 2016; Tsai et al., 2018).

I found that 83.3% of individuals in my sample had some primary source of healthcare. I found that the odds of having a doctor visit among those who had issues with access were 2.68 times higher than for those who did not, suggesting that, even with difficulty, if a respondent deemed that he or she needed to be seen by a doctor, then they would see a doctor even if that means seeing a doctor in ED. With a growing number of care options available (a positive step forward for patient care access), such as at a clinic, a micro-hospital, an urgent care center, or numerous other emerging treatment facilities, it is essential that medical providers deliver the proper patient education useful for patients to identify the appropriate facility for their needs.

MacKichan and colleagues (2017) explored patients' decisions about where to seek care, which is a complex, multistage process. Their data supported the findings of previous researchers who noted that perceptions of a mismatch between the patient and provider frequently induce the patient to seek care elsewhere. Furthermore, they demonstrated how the patient's decision to seek care is informed by their cumulative past experience, where seemingly minimal past experiences such as being placed on hold while attempting to schedule an appointment or enduring a lengthy wait for a routine check-up may cause the patient to form a global view of primary healthcare as an inappropriate source of urgent care. This corroborates my finding that, although most participants (83.3%) had a usual source of care other than an ED or had a personal doctor, nearly one-half (48.2%) reported at least some difficulty in accessing care. These participants reported different causes for this problem, including trouble finding a general doctor, having insurance that was not accepted, or being unable to get an appointment in a timely manner.

Many studies have also shown that a timely delivery of appropriate care may reduce the mortality and morbidity associated with a variety of medical conditions, for example, mental health conditions, addiction issues, and kidney disease (Gallucci et al., 2005; Hoffman et al., 2011; Smart and Titus, 2011). Reducing wait times for mental health services is critically important as evidence show that the longer a patient must wait for such services, the greater the likelihood that the patient will miss the appointment (Kehle et al., 2011; Pizer and Prentice, 2011). Patients respond best to mental health services when they first realize that they have a problem (Kenter et al., 2013). But because primary care providers need to refer patients to mental health service specialists, the delayed time from seeing the appropriate provider may worsen one's condition or continue until treated. Thus, long wait times may produce poorer health outcomes and greater financial burdens due to not obtaining care at the intended provider which can increase morbidity or mortality and can decrease the patient's quality of life (Kaplan et al., 2015; Pizer, & Prentice, 2011).

I also found that insurance status was a significant predictor of increasing odds of forgoing care, which may suggest that patients either do not know or do not decide where to go for care until it is too late, as almost 80% of the respondents (942 out of 1,179) indicated their insurance covered mental health visits but only about six percent of the study population (101 out of 1,678) indicated that they utilized the different mental health services. Researchers have also shown that individuals who are covered through

Medicaid or other state insurance programs have increased odds than those with private insurance to be forced to wait more than one month to access services, even for serious medical problems (Bisgaier and Rhodes, 2011; Rhodes et al., 2014). I did not find any significant association between mental health condition apart from SPD (which I defined, as I stated in Chapter 3 using questions on the interference of a respondent's emotions with their work performance, with household chores, with their social life, or with their relationships with family or friends) and having had a doctor visit, forgoing care or delaying care. I also found no association between the existence of a mental health condition besides SPD and either having had a doctor visit, forgoing care and delaying care. I found that a majority of those with a mental health condition besides SPD had had a visit with a doctor (92%) and did not have to forgo care (78%) or delay care (70%).

In terms of sociodemographic factors, marital status constituted a significant predictor for doctor visits. Those who were married had lower odds of delaying care than those who had never married. Married individuals are believed to benefit from a protection and selection effect that leads to better health and greater access (Wood et al., 2007). It is possible that the moderating effects of marriage are more relevant to health prevention and management of poor health. A major survey of 127,545 American adults indicated that married men were healthier than men who were never married or whose marriages ended in divorce or widowhood (Eglitis & Chambliss, 2019). Men with marital partners also lived longer than men without spouses and the longer a man remained married the greater his survival advantage over his unmarried peers (Eglitis et al., 2019). Among the most cited papers looking at mortality differences by marital status was by

Gove (2015), who paid particular attention to the adverse mortality outcomes for single men relative to women. Gove (2015) argued that these differences in mortality can be attributed to the patients' characteristics associated with their psychological state (their emotions or feelings). Men living alone have greater odds to be lonely than women living in the same condition (de Jong Gierveld, 2003). Murphy, Grundy and Kalogirou (2017), in their recent cross-national analysis, found that the mortality advantage of married persons continued up to the oldest age groups (85–89) and that the largest absolute differentials in mortality levels between marital statuses were at greater ages. This finding parallel other work which suggests the powerful and pervasive health benefits of marriage at older ages (Pienta et al., 2000, p. 583; Eglitis et al., 2019).

Race was a significant predictor of forgoing care and delaying care. Compared to those of White race, those of other single race, Asians and African Americans had higher odds of forgoing care; however, those of more than one race had lower odds of delaying care than those of White race. According to Braveman and Gottlieb (2014), Black and Latino adults have greater odds of living in disadvantaged neighborhoods which tend to produce lower educational attainment and quality in inadequately resourced schools (Braveman, & Gottlieb, 2014). Although I found that neither education, economic status nor the English proficiency of the respondents were predictive for any of the help-seeking behaviors among individuals with SPD, we cannot overlook that individuals with lower levels of education have higher odds of having insufficient access to care (Nunes et al., 2014). These factors can also lead to racial and ethnic minorities experiencing higher rates of chronic and disabling illnesses, infectious diseases, and higher mortality than White American.

In the United States, the federal poverty level (or line) is indicated by an annual pre-tax amount of income earned by a household, indexed by household size and age of household members. For example, in 2015, the federal poverty line was $12,331 for a household comprising a single individual younger than 65 years of age and $24,036 for a family of four. More than half of my study population had an annual income of less than $20,000.00 (see Table 8), thus their finances may have caused them to prioritize their physical health (e.g., buying groceries) over their mental health care needs.

Minority populations have more difficulty than the majority population in locating a usual source of medical care; in particular, Black and Hispanic adults report greater difficulty than Whites in obtaining medical care at a consistent location (Braveman et al., 2014; IOM, 2002; AHRQ, 2017). My study also found that when compared to their White counterparts, those who were of the other single race group, Asian or African American were positively associated with forgoing care relative to White American. The recent annual National Healthcare Quality and Disparities Report (QDR) provided an overview of the quality of health care received by the U.S. population and highlights continued disparities in care experienced by different racial and socioeconomic groups (AHRQ, 2017). The QDR indicated that disparities were lessening from 2000 through 2014–2015 but that disparities persist, especially for poor and uninsured populations.

Finally, I found that a one-year age increase increased the odds of forgoing care by about 1% and delaying care by about 2%. Contrary to my statistically significant findings, most studies report that aging is associated with an increase in functional limitation and in the prevalence of chronic conditions. As people age, they tend to use more hospital services and prescription medicines. Approximately 25 percent of 18–44 years old reported low back pain compared with 35 percent of people 45–64 years old (Freid et al., 2012; NCHS, 2017). However, most previous analyses were based on general population samples, not specifically persons with SPD, thus the discrepancy may be due to the differences between these groups. It is noteworthy that the relationship between aging (or any correlate of utilization) and overall health care utilization is not a direct one. Increased longevity can be a result of the postponement of disease onset or a steady rate of functional loss (Freid et al.,2012). This discrepancy may bring further insight as to which vital characteristics to focus on when developing initiatives to reach those who forgo, delay, or have trouble accessing care. It also suggests that the influences on help-seeking behavior for individuals with SPD are complex and multifactorial.

Interpretation of Research Questions to the Theoretical Framework

As mentioned in Chapter 2, I used the SEM as the theoretical foundation for my work. The SEM is composed of the complex interplay between individual, relationship, community, and societal factors (Glanz et al., 2008). Including multiple levels of influence can lead to the development of more comprehensive intervention approaches useful in systematically targeting mechanisms of change potentially operating at several levels of influence (Glanz et al., 2008).

For my research, I began with the four critical SEM constructs: individual-level influences that increase the likelihood of people seeking help for their condition, relationship-level influences that can affect the decision for or against seeking help, community-level factors such as social environments that may influence the decision to seek care, and societal or macro-level factors such as religious beliefs or cultural practices that may influence health action towards or against seeking help for their psychological distress. Since significant and dynamic interrelationships exist between these different levels of health determinants, interventions are likely most effective when they address determinants at all levels.

Although the model contextualizes individuals' behaviors using dimensions such as intrapersonal, community and public policy to provide a framework for describing the interactions between these levels, no one model can describe all risk factors across these diverse domains. Also, the factors can span levels and therefore the boundaries between levels may need to be understood as nondistinctive rather than distinctive. But for the purpose of my paper, with respect to the first level (individual-level influences that may alter the likelihood of help-seeking among individuals with SPD, I found that those with a general health condition (individual-level factor) had lower odds of delaying care but their general health did not influence whether they had had a doctor visit or whether they had higher odds of forgoing care. On the other hand, if the participants had a chronic health condition (relationship-level factor), they had greater odds of having had a doctor visit or forgoing care, but not delaying care. Other mental health conditions (i.e., apart from SPD) did not have an impact on any of the help-seeking behavior outcomes.

The respondents' access to health care (individual-level factor) was statistically significantly associated with whether they had had a doctor visit but was not associated with whether they had greater odds of forgoing care or delaying care. In addition, those who had had issues with access to health care (community-level factor and societal-level factor) was associated with increased odds of delaying care or forgoing it entirely.

With respect to sociodemographic factors (individual-level factor), I found that men had higher odds of delaying care than women, however, sex was not associated with whether respondents had had a doctor visit nor whether they had greater odds of forgoing care. When compared to their White counterparts, those who were either Asian or African American was associated with increased odds of forgoing care. None of the sociodemographic factors was associated with whether respondents had had a doctor visit. Increasing age was statistically significantly associated with forgoing care or delaying care. Those that were married had significantly greater odds of having had a doctor visit than those who were never married; those who were widowed/ separated/ divorced had significantly greater odds of delaying care. Neither education, economic status nor the English proficiency of the respondents predicted any of the help-seeking behaviors among individuals with SPD.

This paper used a model to characterize and visualize the various layers of help-seeking behaviors among individuals with SPD. However, one of the unique challenges of conceptualizing a model in public health is the adjustable nature of these levels. For example, I listed mental health insurance coverage as a social level variable, but since each respondent answered the question with respect to his/her own personal coverage, the variable is with respect to a single person’s coverage even though it can be seen at a societal level since there is a connection that a society that does not provide routine mental health coverage can impact the health of any one individual. The flexibility in interpretating the model need to be adapted to better understand the dynamics of help-seeking behaviors among individuals with SPD.

Limitations of the Study

My study has several limitations. First, because I used data from California, my results may not be generalizable to other states or the US nation as a whole. In the future, a large, nationally representative survey should be conducted to investigate the relationship between patient factors and help-seeking behaviors among adults with SPD. Second, the characteristics that I used as independent variables were based on the literature and items that were available in CHIS 2015 database. Depending on the variables used for different clinical factors, access to and quality of care, and sociodemographic characteristics may result in different findings. For example, I used Mechanic's (2002) definition of help-seeking behaviors for psychological distress as behaviors to obtain various resources such as advice, information, support and assistance from family, friends and health care professionals. Specifically, I explored help-seeking behavior as seeking help from health care professionals. As there are various measures of help-seeking, the lack of standardization makes comparison between studies difficult, future investigators should examine different levels of help-seeking behavior that may help explain the association between different patient factors.

Third, CHIS data are self-reported, not clinically validated and as such are subject to recall and social desirability biases. For example, due to the stigma associated with mental disorders, people who actually had SPD may not have responded accurately to the questions comprising the K6 scale (thus reducing my effective sample size or altering the strength of the associations I found by indicating possibly spuriously that they felt better than they actually did) or may have been excluded from the study due to missing data on these questions. This self-reported data can also be influenced by recall bias which can lead to informational content being over or under reported by study participants (Shokara, Vernon, & Carlson, 2011). Further, participants may also underreport any problems they may experience due to social desirability bias (Beck, Guignard, & Legleye, 2014; Lofters, Moineddin, Hwang, & Glazier 2011). As I intended my analysis primarily to document general associations rather than to determine causality, any underreporting or overreporting could have skewed the associations I examined.

Recommendations

Based on my findings, it is imperative to highlight the concept of a holistic approach in understanding help-seeking behavior in individuals with SPD. Seeking help in a timely manner can positively impact the delivery of health care as well as its effects, thus enhance individual wellbeing. I investigated the reasons (as indicated by clinical, care-related, and sociodemographic factors) for seeking (or not seeking) health care in adults with SPD.

Barriers that prevent people from seeking help were manifold. Some specific barriers to seeking professional help for their condition included stigma, unavailability of resources with which to seek help, a lack of awareness about SPD, a lack of knowledge as to how to seek help, a lack of support from others to seek help, and fear concerning the help they might receive (Beck et al., 2014; Freid et al., 2012; Johnson et al., 2020;

NCHS, 2017; Weissman et al., 2017). Some of the other, albeit infrequently reported, barriers include financial and time constraints and fear about the side effects of medication. Clement, Schauman and Graham (2015) indicated that treatment-related stigma tended to diminish efforts at help-seeking and issues related to disclosure were a common concern. Self-reliance was reported by participants in a National Comorbidity Survey as a major reason to drop out of treatment or to not seek help (Mojtabai et al., 2011). Although the economic status of the respondents did not predict any of the help-seeking behaviors among individuals with SPD in my study, concerns relating to money and time have been commonly reported in previous studies (Johnson et al., 2020; Salaheddin & Mason, 2016). This suggests that the treatment gap can be reduced by increasing the number of trained mental health professionals available for service delivery, deepening the involvement of non-specialist care providers in mental health settings, and eliciting the active participation of people affected by mental disorders. In turn, decreasing the treatment gap will highlight more accessible and user-friendly services.

Johnson and colleagues (2020) found that services provided in a community-based well-being center instead of a crowded hospital setting was a significant factor that encouraged continued engagement with mental health services. The community-based well-being center offered easy access to interventions and a short waiting time in a pleasant, less crowded outpatient care environment. All these factors contributed to higher user satisfaction, de-stigmatization, and reiterate the need for organization of mental health services in a user-friendly manner (Johnson et al., 2020).

As mentioned, I only examined seeking help from medical professionals. There is a dearth of studies assessing support from family members and friends as an important enabler to professional help-seeking. Eglitis and Chambliss (2019) used a qualitative approach to determine that family support and supportive interactions help patients to understand the emotional concerns that their family members hold, which further motivate the patients to seek help. Social support, therefore, may act as a deterrent or facilitator for the decision about or the pursuit of mental health services, depending on the need of the distressed individual and the type or quality of family support available.

Finally, in this era of technology (and especially during the current pandemic), digital platforms may be a useful means for reaching out to individuals with SPD who are unwilling to seek face-to-face help (due to situational or personal barriers) provided by medical professionals. Johnson et al. (2020) found that individualized feedback and various other proposed components were perceived as likely to be useful in breaking barriers to seeking professional help. As a result, future investigators can examine whether the use of digital platforms reduce the barriers to seeking professional help among individuals with SPD.

Implications for Social Change

My results have positive social change implications for health and clinical practice. Health intervention developers, educators, psychiatrists, psychologists, physicians, nurses and other clinicians may find my findings useful in the creation and utilization of holistic interventions intended to improve help-seeking behaviors among individuals with SPD. Progression of SPD may be delayed and complications relating to

SPD may likely be prevented, thereby benefitting patients and their families through reduced financial burden, decreased morbidity and lessened mortality. In a larger spectrum, managing patients' SPD will have a positive effect on health care payers and the entire society.

In addition, my findings may help to identify groups at greater risk for SPD thus should enable better targeting of interventions. The SEM model of help-seeking behavior for individuals with SPD provides a potentially comprehensive framework for organizing risk and protective factor knowledge. By delivering a multi-level approach, researchers can provide a framework to understand how upper-level factors may moderate the influence of lower-level factors and vice versa. My statistical model identifies statistically significant factors that can be tracked over time in the population. Data about these characteristics are easily available to public health departments, healthcare providers and stakeholders with an interest in developing intervention programs. By being able to identify those at risk early on providers could potentially reduce the frequency of subsequent complications in their patients, which would prove useful in testing targeted strategies for optimizing utilization and reducing the barriers to quality healthcare among those with SPD.

Conclusion

The scientific body of evidence I and others have presented illustrates the importance of seeking help in a timely manner for individuals with SPD. To promote positive health outcomes and prevent disease, it is important to devise optimal intervention programs that incorporate factors associated with healthcare seeking decisions by adults with SPD. The pursuit of a better understanding of the impact of help-seeking behaviors among individuals with SPD and its association with clinical factors, healthcare-related factors, and sociodemographic factors is essential for promoting positive health outcomes and preventing disease.

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