

Assessing the Factors That Influence Morbidity and Mortality From Stress-Related Mental Disorders, Such as Anxiety and Depression, Among Undocumented Mexican Immigrant Male Adults in New York City

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Abstract

Undocumented immigrants make up a substantial part of the immigrant population in the United States (U.S.). Considering that most of the undocumented immigrants in the country are men and of Mexican origin, the experiences and the health outcomes of undocumented Mexican immigrant (UMI) male adults should be of particular importance to researchers, policy makers, health professionals, and American society at large. Based on the existing literature, the various interpersonal and intrapersonal stressors and systemic inequities that undocumented Latinx immigrants face on a daily basis can lead to great psychological distress and to the development of debilitating mental disorders like depression and anxiety. Since there is currently widespread anti-immigrant rhetoric (particularly aimed at Mexicans and undocumented immigrants) and exclusionary immigration policies that have already been found to increase the mental health morbidity of Latinx populations and to negatively impact the health behaviors that these groups engage in, it is vital to take a closer look at the various factors influencing the mental health of undocumented immigrant populations.

This needs assessment proposal focuses on UMI male adults in NYC. Using a holistic social ecological perspective, the proposal investigates the individual and environmental risk factors associated with increased morbidity and mortality from stress-related mental disorders, such as depression and anxiety, among this population, along with the personal determinants that influence those behavioral risk factors. Moreover, this proposal also puts forward a plan for obtaining additional primary data that would provide additional insight into what is occurring at each of the five levels of the Social Ecological Model (individual, interpersonal, organizational, community, and policy/societal) as it relates to the health problem.

As an immigrant, the health and well-being of immigrant communities across the U.S. is of particular importance to me. Considering that I have legal authorization in this country and have had the resources to access high-quality medical care, education, job opportunities, and various sources of social support, I feel a sense of responsibility to advocate for those who have not been granted the same privileges and who are unjustly targeted and directly impacted by racist, anti-immigrant policies. As such, it is my hope that the findings from this needs assessment proposal and the primary data collection methods proposed here inform the implementation of current initiatives, as well as the creation of future interventions, that seek to enhance the health of undocumented immigrant communities and promote greater health equity.

Background & Significance: At-Risk Population, Health Problem, and Setting

Undocumented immigrants are foreign-born individuals who are residing in the United States (U.S.) without legal authorization (Artiga & Diaz, 2019). Though some undocumented immigrants may have entered the country without legal authorization, others may have entered the country with lawful authorization and stayed after their visa or their lawful status expired (Artiga & Diaz, 2019). In 2017, there were a record 44.4 million immigrants living in the U.S., comprising 13.6% of the country's total population (Radford & Noe-Bustamante, 2019). Of those immigrants, 10.5 million were undocumented (Artiga & Diaz, 2019), and the majority of them were men (Baker, 2018). Thus, around 23% of all U.S. immigrants are undocumented. Latinx make up half of the immigrant population in the U.S., and half of those Latinx are of Mexican origin (Radford & Noe-Bustamante, 2019). As of 2017, the top country of origin for the U.S. immigrant population was Mexico and, though Mexicans no longer comprise the majority of undocumented immigrants in this country, they still make up 47% of all undocumented immigrants (Radford, 2019; Passel & Cohn, 2019).

In New York State (NYS) in 2017 there were an estimated 4.5 million immigrants – the majority of which were Latinx –, encompassing around 23% of the state's population (“New York: Demographics and Social,” 2019). Of these foreign-born individuals, slightly less than half are Latinx (Office of the New York State Comptroller, 2016). Furthermore, around 650,000 (14.4%) of the immigrants in the State are undocumented, with Mexicans making up 24% of this population (Passel & Cohn, 2019; “U.S. unauthorized immigrant population estimates by state, 2016,” 2019). According to the 2012-2016 5-Year American Community Survey, New York City (NYC) houses a large majority of the State's undocumented immigrants: an estimated 560,000 (Mayor's Office of Immigrant Affairs [MOIA], 2018). Though there is no clear data on which nationalities make up the bulk of undocumented immigrants in NYC, like at the national and state level Latinx represent the largest immigrant group in NYC, with Mexicans being the second largest group of Latinx immigrants (MOIA, 2018; New York City Department of Health and Mental Hygiene [DOHMH], 2017).

According to a 2019 Kaiser issue brief, the primary reasons individuals immigrate to the U.S. are: better job opportunities, to reunite with family, and for increased safety (Artiga & Diaz, 2019). Though any kind of immigration has its challenges, undocumented immigration often presents with increased risks, difficulties, and heightened stressors before, during, and after

immigration (Garcini et al., 2017). Considering that most undocumented immigrants are men, it is men who most commonly encounter these challenges (Baker, 2018). Research suggests that for many undocumented men, the reasons for leaving their home country are often “based in crisis,” including the impact of extreme poverty and the men’s resulting sense of responsibility to migrate in order to be able to provide a better life for their families (Furman, Ackerman & Negi, 2012). Additionally, according to previous studies, various types of violence are widespread among undocumented immigrants, including physical, verbal, psychological, and sexual violence (Garcini et al., 2017). Moreover, the undocumented immigrant experience in the U.S. is often filled with heightened instances of stigmatization, discrimination, exploitability, fear of deportation, and socioeconomic disadvantage (Garcini et al., 2017). Aside from these various external stressors, undocumented immigrants also face various interpersonal and intrapersonal stressors, such as identity shifts and distancing from family, all of which can lead to great psychological distress (Garcini et al., 2017).

Even though a “health advantage” is often seen among foreign-born Latinx compared to their U.S.-born counterparts – despite the foreign-born often experiencing increased stressors and socio-economic disadvantage – the literature has also shown that this health advantage often diminishes with longer time living in the U.S. (Garcini et al., 2017). One set of explanations for this “paradoxical phenomenon” proposes that immigrants’ health behaviors and social networks exert a protective effect and, that as immigrants acculturate, they lose these seemingly culture-related protective factors, thus causing their health to deteriorate (Viruell-Fuentes, 2007; Da Silva, Dillon, Rose Verdejo, Sanchez & De La Rosa, 2017). However, since this explanation ignores the well-known effect that structural systems have on well-being and health outcomes, new explanations have appeared to explain the deterioration of the health of immigrants and their descendants (Viruell-Fuentes, 2007).

Recent literature, based on qualitative research conducted with Mexican immigrants, proposes that the erosion of the health of immigrants is also due to the increased exposure to “othering messages,” which are instances in which immigrants are stigmatized or discriminated against by institutions and by individuals due to “their ascribed status as minorities” (Viruell-Fuentes, 2007). Considering that discrimination has been consistently associated with significantly higher stress responses and a greater risk for mental disorders like depression and anxiety, this revised explanation makes sense (Pascoe & Smart Richman, 2009). Further

supporting this model is research that shows that chronic stress and psychological distress triggered by cumulative exposure to discrimination and marginalization, and compounded by systemic economic, political, and social exclusion, strongly contribute to the development of depression and anxiety among Latinx immigrants (Ornelas & Perreira, 2011; Potochnick & Perreira, 2010). Additionally, though limited, research also shows that the stress associated with an undocumented legal status is an important determinant of overall psychosocial stress and poor mental health outcomes among Latinx immigrants in the U.S. (Potochnick & Perreira, 2010; Bekteshi & Kang, 2018).

According to the World Health Organization (WHO), depression is “the single largest contributor to global disability” and the major contributor to suicide deaths around the world (World Health Organization [WHO], 2017). Around 322 million people worldwide are living with depression, and it is estimated that about half of those are also diagnosed with an anxiety disorder (WHO, 2017). In total, there are around 264 million people living with anxiety disorders in the world (WHO, 2017). Depressive disorders are serious mental disorders characterized by sadness, loss of interest or pleasure, and other negative feelings, such as those of guilt and low self-worth (WHO, 2017). Anxiety disorders include a number of mental disorders characterized by strong feelings of anxiety and fear (WHO, 2017). Anxiety and depression can be severely debilitating – individuals with either or both of these disorders often experience great impairments in various quality of life domains (Brenes, 2007). In fact, research has found that depression and anxiety are both associated with greater limitations due to lower physical functioning and lower social functioning, greater bodily pain, poorer mental health, and poorer general health (Brenes, 2007).

In the U.S., anxiety disorders are the most common mental illness, with 18.1% of the population affected every year (“Facts and Statistics,” n.d.). Though depression is not as prevalent as anxiety in this country, it is still a highly common disorder. In the U.S., the most frequently diagnosed form of depression is major depressive disorder, with around 17.3 million adults (7.1% of all adults) experiencing at least one major depressive episode in 2017 (“Major Depression,” 2019). Though there is currently not much government-funded data about the rates of depression in NYS, findings from Blue Cross Blue Shield claims data puts the rate of diagnosis for depression in the State at around 4.2% (BlueCross BlueShield, 2018). It is vital to note that, since this is *diagnosis* data, the data underrepresent the true prevalence of depression.

In terms of anxiety disorders, there is no recent data on the prevalence or diagnosis of anxiety disorders at the state level. At the NYC level, a report released by NYC’s Office of the Mayor in 2015 estimated that around 8% of adult New Yorkers experience symptoms of depression each year, and indicated that major depressive disorder is the single greatest source of disability in NYC (Office of the Mayor, n.d.). Additionally, a 2008 study that analyzed data from the NYC Health and Nutrition Examination Survey (NYC-HANES), the first comprehensive community-level health examination survey in the U.S., estimated the prevalence of anxiety to be around 4% in NYC (Gwynn et al., 2008).

Despite the increased societal focus on mental health and despite the increase in anti-immigrant rhetoric (particularly aimed at Mexicans and undocumented immigrants) and exclusionary immigration policies – rhetoric and policies that have already been shown to increase the mental health morbidity of Latinx versus non-Latinx populations (Hatzenbuehler et al., 2017) –, there is very limited research surrounding the mental health of undocumented immigrants in particular (Garcini et al., 2017). This gap in research has made it challenging to determine the prevalence of mental disorders among the undocumented, a group that we know faces severe stressors and great socioeconomic inequities (Garcini et al., 2017). Furthermore, even though Mexicans have a long historical presence in the U.S. and, as discussed above, Mexico continues to be the top country of origin for the U.S. immigrant population, with Mexicans making up 47% of all undocumented immigrants in this country, the “fields of mental health and undocumented Mexican immigration rarely converge” (Sullivan & Rhem, 2005). This lack of systematic research has made it difficult to draw definitive conclusions about undocumented Mexican immigrants’ (UMIs) mental health status (Sullivan & Rhem, 2005). However, small studies conducted in various cities across the U.S. do show that stress-related mental disorders, such as depression and anxiety, are important health concerns among the undocumented immigrant population, including among those who are Mexican.

A study published in 2005 compared the diagnoses and mental health care use of undocumented Latinx immigrants with that of documented and U.S.-born Latinx treated in a mental health outpatient treatment program in NYC (Carmela Pérez & Fortuna, 2005). To do so, the researchers completed a clinical chart review of 197 outpatient adult psychiatric charts (Carmela Pérez & Fortuna, 2005). Of these 197 patients, 15% were undocumented Latinx immigrants, 73% were documented Latinx immigrants, and 12% were U.S.-born Latinx (12%)

(Carmela Pérez & Fortuna, 2005). In the study, the undocumented were more likely to be male and uninsured, and more likely to be from South America or Mexico (Carmela Pérez & Fortuna, 2005). Additionally, findings showed that the undocumented were more likely to have a diagnosis of anxiety and alcohol abuse disorders (Carmela Pérez & Fortuna, 2005). Furthermore, the undocumented also had a significantly greater mean number of concurrent psychosocial stressors than the documented and U.S.-born Latinx (Carmela Pérez & Fortuna, 2005). In terms of specific stressors, the undocumented group was significantly more likely to have psychosocial stressors related to their occupation and access to the healthcare and the legal system (Carmela Pérez & Fortuna, 2005). Despite the undocumented group having poorer mental health and greater stressors, they had a significantly lower mean number of total mental health appointments attended than the two other groups, and they also had lower rates of lifetime inpatient and outpatient treatment use (Carmela Pérez & Fortuna, 2005).

A 2017 study conducted with 248 UMIs residing in a city located in North San Diego County in California used clinical interviews to assess for psychiatric disorders, history of trauma, and distress from postmigration living difficulties among this population (Garcini et al., 2017). Using validated diagnosis tools, the study found that 21.6% of participants met criteria for a current mental disorder (Garcini et al., 2017). The most prevalent mental disorders were major depressive Disorder (14.4%), and panic disorder (8.4%) and generalized anxiety disorder, which are two major types of anxiety disorders (“What are the five major types of anxiety disorders?,” n.d.). Additionally, comorbidity of mental disorders was common among this group. In fact, some of the highest comorbidities reported were between major depressive disorder and panic disorder (81.2%), post-traumatic stress disorder and major depressive disorder (62.5%), and post-traumatic stress disorder and panic disorder (50.0%) (Garcini et al., 2017). Furthermore, the study found that meeting criteria for a disorder was significantly more likely for those with a history of traumatic events and those with greater distress from postmigration living difficulties (i.e. finances/employment; family and relationships; access to health care; discrimination/marginalization; acculturation; and stressors unique to undocumented status, such as fear of deportation) (Garcini et al., 2017). In fact, for each unit increase in mean distress from postmigration living difficulties, participants were 4.0 times more likely to meet criteria for a disorder (Garcini et al., 2017).

Though focused on Mexican immigrants in general, and not solely undocumented

immigrants, a 2011 epidemiological study also found similar results. The study used survey data on psychiatric disorders to estimate the relative odds of first onset of depressive disorders (i.e. major depressive episode, dysthymia) and anxiety disorders (i.e. generalized anxiety disorder, social phobia, panic disorder, posttraumatic stress disorder) among Mexican immigrants living in the U.S. (n=554) compared with non-immigrant Mexicans living in Mexico who have an immigrant in their immediate family (n=2519) (Breslau et al., 2011). The study found that the immigrants were more likely to be male and aged 26-45 years than the non-immigrant Mexicans and that they had significantly higher lifetime prevalence of any depressive or anxiety disorder (17.4% vs. 11.7% respectively) (Breslau et al., 2011). In discussing the results, the researchers explained that these findings highlight that “experiences as an immigrant might lead to the onset of clinically significant mental health problems in this population” (Breslau et al., 2011).

A 2006 study in North Carolina used interviews with Mexican immigrants to assess the prevalence of clinically significant depressive and anxiety symptomatology, and delineate the structural, social, and psychological stressors associated with anxiety and depression symptoms among this population (Hiott, Grzywacz, Arcury & Quandt, 2006). Using validated diagnostic tools, the study found that around 39% of participants met the criteria for “significant anxiety or a level of anxiety that may impair functioning” and almost 40% of individuals met the criteria for “potentially significant depressive symptomatology” (Hiott et al., 2006). Additionally, findings showed that greater stressors were associated with higher anxiety and depression scores among this population (Hiott et al., 2006). Moreover, several of the stressors differed between men and women. For example, among employed individuals, men worked more hours per week than women; more men reported leaving their spouse in Mexico than did women; and men “scored higher than women on perceived isolation, social marginalization, and separation from family stress” (Hiott et al., 2006). Another study conducted in North Carolina analyzed interviews with 99 predominantly Mexican, undocumented and uninsured immigrants to assess the “demands of immigration” for each individual, as well as their depression symptoms (Coffman et al., 2010). The analysis found that Mexicans had a higher mean depression score than non-Mexicans, and that there were significant correlations between scores on the depression scale and the demands of immigration subscales of “Loss,” “Novelty,” “Language,” “Not at Home,” and “Discrimination” (Coffman et al., 2010).

As seen through these studies, depression and anxiety seem to be pressing mental health

problems for undocumented immigrants, including UMIs. In addition, as these studies highlight, there is a link between the psychosocial stressors and disadvantages that undocumented immigrants experience and their mental health status.

Even though not much is known about the mental health of undocumented immigrants in NYC, we do know that, though NYC is more diverse and more progressive than most other cities in the U.S., undocumented immigrant adults in the City still face a tremendous number of disadvantages and challenges that have been linked to poor overall health (MOIA, 2018). In fact, a 2018 report from the Mayor's Office for Immigrant Affairs reveals that 63% of undocumented immigrants are limited-English proficient, 68% have a high school diploma or less, 58% do not have health insurance, 35% live in overcrowded or extremely overcrowded housing, and 58% are rent burdened or extremely rent burdened (MOIA, 2018). Additionally, even though undocumented immigrants who are 16 and older have a labor force participation rate that is *greater* than that of all other groups, including U.S.-born citizen New Yorkers (77.3% vs. 64.1% respectively), undocumented immigrants' median earnings are only \$23,175, which is significantly *lower* than the earnings of all other groups (MOIA, 2018).

Moreover, Mexicans – the second largest group of Latinx immigrants in NYC – tend to face more economic, social, and health care-related challenges than other Latinx immigrant groups in the City (DOHMH, 2017). Though health-related data is not available for UMIs in New York specifically, there is health-related data available for Mexicans in general, and the data is worrisome. Around 50% of Mexicans in NYC are foreign-born and, of the foreign born, 41% are not U.S. citizens (Bergad, 2016). In addition, according to "Health of Latinos in New York City," the DOHMH's first comprehensive report on Latinx health released in 2017, Mexicans are more socially and economically disadvantaged than other Latinx groups in important areas: while 22% of Latinx adults do not have health insurance, a staggering 54% of Mexican adults lack health insurance; though 76% of Latinx have a primary care provider, only 52% of Mexicans have one; 44% of Latinx and 31% of Mexicans can walk to fresh fruits and vegetables in five minutes or less; and though 57% of Latinx are rent-burdened, 63% of Mexicans are rent-burdened (DOHMH, 2017). Additionally, while the unemployment rate is lower among Mexicans than among Latinx overall (7% vs. 11%), Mexicans are more likely to have an income below 200% of the federal poverty level (66% vs. 56%) (DOHMH, 2017).

This needs assessment proposal focuses on UMI male adults in NYC for three primary

reasons: being undocumented is related to many psychosocial stressors that are linked to mental disorders, such as depression and anxiety; the majority of undocumented immigrants are male; and Mexicans are particularly socioeconomically disadvantaged in NYC compared to other Latinx groups.

Needs Assessment Proposal Aims

This needs assessment proposal will look at each level of the Social Ecological Model – including the individual, interpersonal, organizational, community, and policy/societal levels – as it relates to the health problem of interest: increased morbidity and mortality from stress-related mental disorders, such as depression and anxiety, among UMI male adults in NYC. This needs assessment proposal aims to:

1. Identify the key behaviors of UMI male adults and the modifiable personal determinants of these behaviors as they relate to the health problem
2. Ascertain important behaviors of key agents at the environmental levels (e.g. family members, health care organizations, the City of New York) and the modifiable personal determinants of these behaviors as they relate to the health problem
3. Identify current gaps in the literature and propose primary data collection methods to further advance our understanding of key behaviors and personal determinants that influence the health problem
4. Inform current and future plans to improve the (mental) health of undocumented immigrant communities and promote greater health equity in NYC

Overview of Needs Assessment Framework

Before delving into the needs assessment proposal, it is important to first discuss what a “need” is and what a “needs assessment” is. In this proposal, a “need” refers to the discrepancy or difference between “the present situation and a more desirable one” (Gilmore, 2012). It is a gap that needs to be closed in order for positive change to occur. As such, a “needs assessment” is a systematic process that helps identify the reported needs of individuals or groups (Gilmore,

2012). A needs assessment is a logical starting point for the development of programs that seek to address the needs and improve the health and well-being of communities (Gilmore, 2012). Though various frameworks and models can be used to organize and conduct a needs assessment, one of the most commonly used models is PRECEDE-PROCEED (Gilmore, 2012).

The needs assessment proposal discussed here utilizes the Logic of Risk (LOR) model, which is the *first* step of Intervention Mapping (IM), a 6-step theory- and evidence-based framework for planning, implementing, and evaluating interventions (Bartholomew Eldredge et al., 2016). Step 1 of IM (i.e. the LOR model) was created by adapting the PRECEDE portion of the PRECEDE-PROCEED model (Bartholomew Eldredge et al., 2016). To understand what the LOR model is, it is important to first discuss the PRECEDE model. The PRECEDE model is a population-based planning framework that helps practitioners define a problem and consider the behaviors and factors at the individual and environmental level (broadly speaking) associated with that health problem (Bartholomew Eldredge et al., 2016). The PRECEDE model encourages the inclusion of determinants that are modifiable, such as beliefs and attitudes, as well as the inclusion of determinants that are *not* modifiable, such as genetics (Bartholomew Eldredge et al., 2016). Since the public health field is interested in effecting change, PRECEDE's focus on determinants that cannot be changed poses some barriers to public health practitioners. As such, in creating the LOR model, Bartholomew Eldredge and colleagues modified the PRECEDE model to only include factors that can be modified (Bartholomew Eldredge et al., 2016). These modifiable factors were labeled "personal determinants" and include the knowledge, values, attitudes, beliefs, and skills that influence behavior at all levels of the Social Ecological Model, described below (Bartholomew Eldredge et al., 2016).

Ecological models are touted as highly rigorous and useful frameworks for analyzing and contextualizing complex health problems and health behaviors (Glanz, Rimer, Visnawath, 2015). Since these models allow for the conceptualization of multiple levels of determinants of health and health behaviors, program planners endorse using these models to design comprehensive multilevel interventions (Glanz et al., 2015). However, despite the wide agreement that

individual behaviors are influenced by proximal social influences (such as family and friends) as well as by more distal influences (such as organizations and policies) and that, as such, ecological perspectives are crucial to effectively addressing pressing health issues, the “operationalization and implementation of ecological models in research and practice is not yet consistent with the rhetoric” (Glanz et al., 2015).

While there are various ecological models, one in particular is an underpinning of IM and, thus, and underpinning of the LOR model utilized in this needs assessment proposal (Bartholomew Eldredge et al., 2016). This model is the Social Ecological Model (SEM), which was developed by Kenneth McLeory and colleagues in 1988 (Glanz et al., 2015). The SEM identifies five levels of influence on health behaviors: the intrapersonal/individual, interpersonal, institutional/organizational, community, and policy/societal levels (Glanz et al., 2015). The individual level focuses on the at-risk population, or the group with a “definable boundary or shared characteristics that has or is at risk for having certain health and quality of life problems” (Bartholomew Eldredge et al., 2016). The interpersonal level refers to individuals or groups of people with close connections to the at-risk population and who are likely to have an influence on the at-risk group’s health-related behaviors (Bartholomew Eldredge et al., 2016). The organizational level includes organizations or institutions that influence the behaviors of those individuals they come in contact with (Bartholomew Eldredge et al., 2016). The community level refers to groups of people who share similar spaces, culture, characteristics, and experiences (Bartholomew Eldredge et al., 2016). The final level, the policy/societal level, includes large systems that have the power and the means to control and dictate aspects of the lives of their “constituent systems” (Bartholomew Eldredge et al., 2016).

This social ecological perspective underpinning the LOR influences how the LOR is created and conceptualized. The LOR model used in this needs assessment proposal is developed from right to left, typically beginning with the identification of the health problem and the quality of life consequences associated with that health problem (Bartholomew Eldredge et al., 2016). After this is done, individual behavioral factors that influence the health problem, along

with the personal determinants that determine those behavioral factors, are pinpointed (Bartholomew Eldredge et al., 2016). Following the identification of the personal determinants and behavioral factors at the individual level, one moves down the model and identifies the behavioral factors (and their personal determinants) at the interpersonal, organizational, community, and policy/societal levels that can influence the behaviors of the at-risk populations (Bartholomew Eldredge et al., 2016). It is important to note that, as seen in the image below, while the environmental behavioral risk factors can contribute to and influence the health problem directly, they most commonly influence (and are influenced by) the behavioral factors at the individual level, as well as any other (lower) environmental levels (Bartholomew Eldredge et al., 2016). As such, the behavioral factors at the individual level have many influences, as may also be the case for the behavioral factors at the lower environmental levels. Once completed, the LOR model is read from left to right as a “causal model of the health problem and the quality of life” consequences associated with that health problem (Bartholomew Eldredge et al., 2016). Appendix A includes the complete LOR model for this needs assessment proposal.

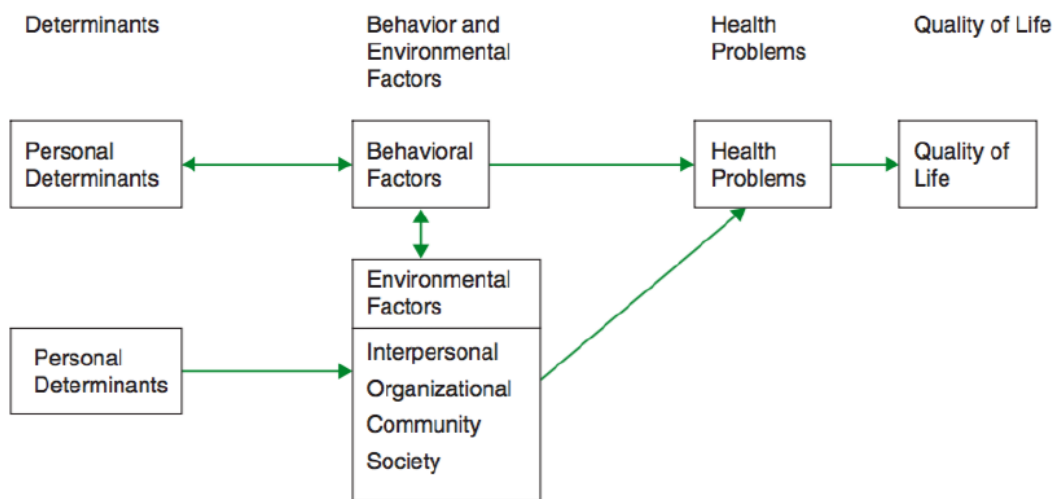


Figure 2: Logic of Risk Model from Bartholomew Eldredge, L.K., Markham, C.M., Ruiter, R.A.C., Fernandez, M.E., Kok, G., & Parcel, G.S. (February 2016) *Planning health promotion programs: An intervention mapping approach (4th ed)*. San Francisco: Jossey-Bass.

Rather than giving lip service to the SEM, this needs assessment proposal will operationalize it and provide an in-depth analysis of each level of the SEM as it relates to the at-

risk population (i.e. UMI male adults) and the health problem (i.e. increased morbidity and mortality from stress-related mental disorders, such as depression and anxiety, among UMI male adults in NYC). Specifically, this needs assessment proposal will identify essential, evidence-based behaviors and personal determinants for each behavior at each of the five levels of the SEM, as well as identify current gaps in the literature and propose primary data collection methods that could be used to fill in these gaps.

Needs Assessment Proposal Findings, Gaps, and Proposed Data Collection Methods

Overview of Needs Assessment Process

In this needs assessment proposal, I have entered the LOR model at the health problem, which is increased morbidity and mortality from stress-related mental disorders, such as depression and anxiety, among UMI male adults in NYC. Literature about the health problem is discussed in the “Background and Significance” section above. Secondary health problems associated with increased morbidity from stress-related mental disorders, such as depression and anxiety, include alcohol dependence (a shorter-term health problem) and cardiovascular disease (a longer-term problem).

In terms of alcohol dependence, a meta-analysis of depression and substance abuse conducted in 2009 found that, in clinical samples, the co-occurrence of depression and alcohol use disorders, particularly alcohol dependence, ranged from 50% to 70% (Conner, Pinquart & Gamble, 2009). Though this co-dependency is multi-faceted, research supports the idea that people with depression “are motivated to drink in an effort to cope with negative affect, a potential mechanism for development of AUD [Alcohol Use Disorder]” (Conner et al., 2009). Though not linked to depression data, data from the DOHMH points to the fact that excessive alcohol use is a significant problem among Mexicans (DOHMH, 2017). In fact, a recent report found that, while the Latinx population as a whole has a lower prevalence of drinking than non-Latinx (51% vs. 58% respectively), Mexicans who drink alcohol have a higher prevalence of binge drinking than non-Latinx who drink alcohol (DOHMH, 2017). This is an important finding as high rates of depression are common among individuals with alcohol use disorders (Conner et al., 2009).

In regard to cardiovascular disease, a study analyzing data from the Framingham study found that, in participants younger than 65, the risk of having an incident stroke or transient ischemic attack was significantly greater (4.21 times greater) in those with depressive symptoms (Salaycik et al., 2007). Additionally, studies have shown that the risk of cardiovascular events – events such as heart failure, myocardial infarction, and transient ischemic attack – is also significantly higher among individuals with anxiety disorders (Martens et al., 2010). Recently, a cross-sectional analysis of 15,864 Latinx men and women aged 18 to 74 years (40% of whom were Mexican and 83% of whom were foreign-born) studied the prevalence of depression and anxiety and their relationship to cardiovascular morbidity (Wassertheil-Smoller et al., 2014). The study found that history of CVD was associated with 77% higher likelihood of depression among this population (Wassertheil-Smoller et al., 2014). Due to the cross-sectional nature of the study, the researchers could not determine whether depression and anxiety followed or preceded the various cardiovascular events, but it is the association between depression/anxiety and cardiovascular events that remains significant (Wassertheil-Smoller et al., 2014).

After investigating the primary health problem and secondary health problems, I proceeded to identify the quality of life consequences associated with the primary health problem in my population of interest. Considering that many undocumented immigrant men come to the U.S. for increased job opportunities, important quality of life consequences of anxiety and depression are reduced work productivity and reduced wages and income (Furman et al., 2012; Wang et al, 2003). Data from the Centers for Disease Control and Prevention looking at condition-specific, 30-day activity limitations found that a “composite category of depression, anxiety, or other emotional problems” is one of the most impairing conditions among respondents 18 years of age and over (Wang et al, 2003). These activity limitations are often seen in the work place, where disorders such as depression are associated with a significant loss in productivity (Wang et al., 2003). Specifically, workers with mental disorders have a significant increased risk of “sickness absence days” as well as “work cut-back days,” which is when an individual is at work but not performing well (Wang et al., 2003).

Keeping in mind that undocumented immigrants are overrepresented in jobs that involve more risk and pay lower wages than other jobs (i.e. construction, agricultural, cleaning, and food preparation), reduced job productivity can have significant economic impacts for these workers (Orrenius & Zavodny, 2009). Research shows that many of the jobs that undocumented

immigrant men hold are increasingly using nonstandard labor practices such as “subcontracting” (Chávez & Altman, 2017). Subcontracting allows employers to circumvent the laws regulating the hiring of unauthorized workers by hiring subcontractors who then carry out the employers’ orders (Chávez & Altman, 2017). Though this certainly benefits undocumented laborers by providing a pathway for them to find work, these practices also turn undocumented workers into “nonemployees,” who can be compensated based on the number of completed tasks and *not* on the number of hours worked as is regularly the case for employees (Chávez & Altman, 2017). Accounts from undocumented Mexican laborers underline how, because of this system, missing a day of work or not being as productive during the work day due to emotional and physical problems, for example, can severely decrease workers’ wages and further increase economic insecurity for them and their families (Chávez & Altman, 2017).

Since perceived social support and quality of social interactions can buffer the negative health effects of stressors associated with the immigrant experience (Salgado, Castañeda, Talavera & Lindsay, 2012; Finch & Vega, 2003), a reduction in the perceived quality of social interactions as a result from depression and anxiety is also an important quality of life consequence for UMI male adults. Though 20 years old, research has found that, compared with non-depressed individuals, depressed individuals find their interactions with friends, family members, and romantic partners to be less enjoyable and less intimate (Nezlek et al., 2000). Additionally, work focused on how anxiety disorders affect marital quality has found that wives of husbands who have an anxiety disorder report significantly less positive and more negative perceptions of their marriages (McLeod, 1994). Similarly, husbands with anxiety disorders also give “significantly less positive marital perceptions” than husbands without anxiety disorders (McLeod, 1994). This quality of life consequence is critical as it may further worsen the mental health of UMIs.

Furthermore, increased risk of suicide is also a central quality of life consequence of depression and anxiety. According to the Department of Health and Human Services (HHS), new longitudinal data on depression suggest that around 2% of those ever treated for depression in an outpatient setting and 4% of those treated in an inpatient setting will die by suicide (“Does depression increase the risk for suicide?,” 2014). Moreover, there are striking differences between males and females when it comes to lifetime risk of suicide due to depression (“Does depression increase the risk for suicide?,” 2014). In fact, while 1% of women with a lifetime

history of depression will die by suicide, about 7% of men with a lifetime history of depression will (“Does depression increase the risk for suicide?,” 2014). Additionally, though limited, research with Mexican immigrants has shown that higher levels of depression are significantly correlated with higher levels of suicidal ideation (Hovey, 2000). To make matters worse, higher levels of stress associated with the immigration and adaptation process – which, as previously discussed, are higher among undocumented immigrants – have been found to further increase the risk for suicidal ideation (Hovey, 2000).

Once the health problem, secondary health problems, and quality of life consequences were defined, I then moved left in the LOR model to the individual behavioral risk factors and their personal determinants. Behavioral risk factors and their personal determinants at this level, as well as for each successive socioecological level, were identified by first brainstorming and then conducting a review of the literature to find supporting evidence. If evidence refuting the preliminary risk factors and personal determinants was found, model components were adjusted appropriately. Findings from the literature surrounding each of the key behavioral risk factors and personal determinants are described in the following sections. Gaps in the literature and proposed data collection methods are also discussed.

Individual Level Behavioral Risk Factors and Personal Determinants

At the individual level, the at-risk population identified are UMI male adults living in NYC. Queens County has the largest immigrant and undocumented immigrant population of all counties in NYC, and is also home to the largest Mexican population in the City (MOIA, 2018; New York City Department of City Planning, 2013). Appendix B includes some original GIS maps showing the distribution of foreign-born non-citizens, lack of health insurance, and poor mental health status in Queens County, as well as significant spatial clusters ($p=0.001$) of these variables. Overall, these great socioeconomic disadvantages that UIs face are significant barriers to health.

The two behaviors included at the individual level are:

1. UMI male adults do not routinely utilize legally accessible health care services, such as Federally Qualified Health Centers (FQHCs) and NYC Health and Hospitals (NYC Health + Hospitals) facilities that can help them with their mental health needs
2. Diagnosed UMI male adults do not correctly and/or consistently adhere to recommended treatment regimens prescribed by health care professionals (including

mental health professionals)

In relation to the first behavioral risk factor identified in this needs assessment proposal, the two major safety-net health care systems in NYC are: NYC Health + Hospitals (which is also the nation's largest local public hospital system) and FQHCs, also known as community health centers (Berlinger, Calhoun, Gusmano & Vimo, 2015). Both of these safety nets are nonprofits that offer primary, behavioral, and preventive health care, and have explicit provisions for patients who are uninsured and who cannot afford to pay for care (Berlinger et al., 2015). In these facilities, individuals are not asked directly about immigration status and staff assume that "many of their patients who are low income and are not enrolled in Medicaid are undocumented" (Berlinger et al., 2015). When an uninsured individual arrives to a NYC Health + Hospitals facility, a counselor determines whether there are possible coverage options (Berlinger et al., 2015). For those who are not eligible for any insurance coverage and who have incomes up to 400% of the Federal Poverty Level, NYC Health + Hospitals offers a sliding fee scale (Berlinger et al., 2015). FQHCs also offer health care on a sliding scale to the uninsured and those are low-income (Berlinger et al., 2015).

As of 2018, 58% of UIs in NYC did not have health insurance of any kind (DOHMH, 2017). Those who do have insurance are insured through employer sponsored coverage, private insurance purchased outside of the Affordable Care Act (ACA) marketplace, or Child Health Plus (an insurance policy only available to children) (Berlinger et al., 2015). The high proportion of uninsured UIs is due to the fact that this already vulnerable population is barred from enrolling in Medicaid and purchasing coverage through the ACA marketplaces due to their immigration status (Artiga & Diaz, 2019). Since HHC and FQHCs pride themselves on providing primary care (including mental health care) to undocumented immigrants regardless of insurance status and ability to pay, as discussed above, it is noteworthy that 52% of Mexican adults still *do not* have a regular source of primary care, especially considering that around 20.5% of Mexicans in NYC are not U.S. citizens (DOHMH, 2017; Bergad, 2016). This points to undocumented immigrants not utilizing legally accessible health care services (such as FQHCs and NYC Health + Hospitals facilities) that can address their mental health needs as often as they could. In addition, it seems that in NYC UMI male adults access health services at a lower rate than do UMI females. In fact, a 2004 study assessing access to and use of health services among 431 Mexican-born undocumented immigrants living in the City found that only 36.5% of respondents

reported access to a regular provider, and that UMI women were almost 3 times as likely as UMI men to report access to a regular health care provider (Nandi et al., 2008).

There are various personal determinants that influence UMI male adults' routine utilization of legally accessible health care services that can address their mental health needs. The first personal determinant is that UMI male adults may not believe that depression and anxiety are illnesses that require medical intervention. Focus groups conducted with 94 Latinx immigrants (including Mexicans) in New York and New Jersey found general agreement among participants that depression is "a consequence of difficult life circumstances, and therefore not always an illness" (Martínez Pincay & Guarnaccia, 2006). Additionally, a study conducted with Latinx male and female immigrants in Missouri (the majority of whom were of Mexican origin) found that, when presented with a vignette describing an individual meeting the Diagnostic and Statistical Manual of Mental Disorders' criteria for major depression, 45% of participants did *not* identify the vignette as depression (Cabassa & Zayas, 2007). Instead, these participants described an individual who was coping with economic strains (e.g. economic insecurity), interpersonal problems, and social isolation, among other external factors (Cabassa & Zayas, 2007).

Furthermore, when the researchers of this same study analyzed the data for 56 of the *men* in the larger study, they found that 61% of the men did *not* identify the vignette as depression and that the majority of them saw the person in the vignette as just someone experiencing life stressors (Cabassa, 2007). Considering the various socioeconomic challenges that Latinx immigrants, particularly undocumented male immigrants, encounter in their everyday lives, it is not difficult to see why these individuals may regard their sadness, anxiety, and hopelessness as a reflection of their environments, and not as a disorder that needs to be treated by a professional. In fact, a preponderance of the men (88%) in the vignette study agreed or strongly agreed that the situation depicted in the vignette would improve with time (Cabassa, 2007).

The second personal determinant for this behavior is that UMI male adults believe that their social networks will stigmatize them if they seek and access care for mental illness. The focus groups with Latinx immigrants discussed above also found that one of the key barriers to seeking health services that address mental health needs is the stigma associated with mental illness (Martínez Pincay & Guarnaccia, 2006). In this study, participants explained that fear that individuals will be considered crazy by those in their networks deters people from seeking services (Martínez Pincay & Guarnaccia, 2006). Similarly, focus groups with Latinx outpatients

(from the Caribbean and Mexico) receiving antidepressants revealed that participants originally feared seeking treatment for their depression due to concerns that they would be seen as “weak” or unable to deal with normal, everyday stressors (Interian, Martinez, Guarnaccia, Vega & Escobar, 2007). Participants also expressed fear of facing social separation from their social networks, including friends and family, if they sought services (Interian, Martinez, Guarnaccia, Vega & Escobar, 2007). In regard to the perceptions and beliefs of Latinx men, specifically, focus groups with health advocates and mental health service providers serving Latinx have shone light on the fact that Latinx men may be reticent to talk about feelings/emotions and to seek professional assistance for emotional problems because they are worried about how their communities and families may perceive them and their established gender roles (Shattell, Hamilton, Starr, Jenkins & Hinderliter, 2008).

The fact that UMI male adults are unaware of legally accessible health care services that can address their mental health needs and how to access them is also an important personal determinant for this behavior. Qualitative studies conducted in urban areas across the U.S. have consistently found that Latinx immigrants of varying immigration statuses cite a lack of knowledge of where to seek accessible services as a significant barrier to accessing health services, including mental health services (Martínez Pincay & Guarnaccia, 2006; Cabassa & Zayas, 2007). A 2014 study in California conducted focus groups with primarily Mexican (87%) young adults (aged 18-31) who were eligible for the Deferred Action for Childhood Arrivals (DACA) program, a federal program that can provide temporary legal status to undocumented immigrants who came to the U.S. before the age of 16 and who have been in the U.S. for at least five years (Raymond-Flesch, Siemons, Pourat, Jacobs & Brindis, 2014). Participants in these groups reported that mental health care was the greatest unmet health need and added that lack of information about health care options was a barrier to seeking and accessing care (Raymond-Flesch et al., 2014). Additionally, many participants explained that the lack of knowledge was often intergenerational – since their undocumented parents had little knowledge of how to navigate the health care system, they were unable to teach their children about their health care options (Raymond-Flesch et al., 2014). This lack of knowledge is noteworthy since California, just like New York, has done a lot of work to improve access to health care to undocumented immigrants (Raymond-Flesch et al., 2014).

In NYC, this lack of knowledge is also an issue. A 2015 Report from the NYC Mayor’s

Task Force on Immigrant Health Care Access recommended that more efforts be directed toward enhancing “consumer outreach, education, training, and engagement on the various available care and coverage options for immigrant New Yorkers,” thus highlighting that even the City government is aware that immigrants, including undocumented immigrants, do not know which (mental) health care services are legally accessible to them or how to access them (The Mayor’s Task Force on Immigrant Health Care Access, 2015).

Another relevant personal determinant for this behavioral risk factor is that, even if they know about them, UMI male adults perceive that legally accessible health care services will be unaffordable. Structured face-to-face interviews with low-income Latinx male and female immigrant patients (the majority of whom were of Mexican origin) at a healthcare clinic in St. Louis, Missouri, found that one of the most common access barriers to mental health services is perceived inability to pay for services (Cabassa & Zayas, 2007). Considering that the individuals interviewed were *already* patients at a low-income clinic, it is noteworthy that the perceived high cost of services was still a barrier for them. Additionally, in the aforementioned study involving predominantly Mexican young adults eligible for DACA, participants also identified cost as a barrier to health care access (Raymond-Flesch et al., 2014). Not only did these participants worry that they would be unable to pay for services at the point of care, but they also worried that the bills would be so large that individuals would find themselves in medical debt (Raymond-Flesch et al., 2014). In NYC, research done by the Mayor’s Task Force on Immigrant Health Care Access sheds light on the fact that many immigrants are not aware and lack “knowledge about... sliding fee scale programs” such as those offered at NYC Health + Hospitals facilities and FQHCs (The Mayor’s Task Force on Immigrant Health Care Access, 2015). If people do not know that they can receive financial assistance to help pay for health care services, they may avoid seeking services due to their perceived unaffordability.

Moreover, another personal determinant is that UMI male adults believe that legally accessible health care services will not be available in their preferred language. In the U.S., over 23.5 million people (ages 5 and over) have limited English proficiency (LEP), which is a limited ability to read, write, speak, or understand English (Nathenson, Saloner, Richards & Rhodes, 2016). About 80% of the LEP population is foreign-born and, of the foreign-born Latinx population in the U.S., nearly two-thirds are LEP (Nathenson et al., 2016). In NYC, almost half of all immigrants are LEP, and 63% of undocumented immigrants are LEP (MOIA, 2018). As

such, it is clear that many Spanish-speaking undocumented immigrants require health care services in Spanish. However, the belief that health care services will not be available in Spanish deters people from seeking and accessing care. In fact, focus groups conducted with Latinx immigrants in northeastern states, including New York, found that a perceived lack of Spanish-speaking staff is a barrier to participants accessing healthcare services for mental health issues such as depression (Martínez Pincay & Guarnaccia, 2006). Additionally, NYC-based research shows that immigrants “fear obtaining health services because they believe that they will have trouble understanding resultant diagnoses and treatment options” due to language barriers between them and health care providers (The Mayor’s Task Force on Immigrant Health Care Access, 2015). Findings from a 2019 community needs assessment conducted by NYC Health + Hospitals in the area serviced by NYC Health + Hospitals/Elmhurst found that a pressing challenge to seeking health care services for respondents was language barriers (New York City Health + Hospitals, 2019). This finding is particularly pertinent because Elmhurst, Corona, and Jackson Heights have the highest number of Mexicans in the City (New York City Department of City Planning, 2013).

Aside from believing that the health care system will not meet their linguistic needs, UMI male adults also perceive that health care professionals will not effectively meet their larger cultural needs. A paper summarizing several qualitative studies examining barriers to care, highlights that perceived cultural clashes between Latinx individuals and their health care providers are a barrier to Latinx seeking care. The author explains that focus group participants’ expectations for meetings with providers, such as psychotherapists, were “in line with the strong emphasis on sociality in Latino culture; that if I unburden myself and share my emotions with you, I will get a warm and emotional response in turn,” but this is not always what Latinx encounter in the doctor’s office (Martínez Pincay & Guarnaccia, 2006). The relative “coldness” of providers deterred people from going back to receive care (Martínez Pincay & Guarnaccia, 2006). Another study exploring Mexican immigrant women’s perceptions of health care access for stigmatizing illnesses, such as mental illness, found that, from a cultural perspective, most women thought that obtaining care in the U.S. was difficult (Horwitz, Weiss Roberts & Warner, 2008). According to the women, this difficulty stemmed from the “formal and less personal nature” of the doctor-patient relationship in the U.S. (Horwitz et al., 2008). Thus, it seems that not only is linguistically competent care essential to immigrants seeking health care services for

conditions like mental illness, but so is culturally competent care. In NYC, the Mayor’s Task Force on Immigrant Health Care Access has called for expanding “capacity of the New York City health care system to provide culturally and linguistically competent primary and preventive health care services to immigrants,” further highlighting its importance (The Mayor’s Task Force on Immigrant Health Care Access, 2015).

The final personal determinant identified that deters UMIs from routinely utilizing legally accessible health care services that can help them with their mental health needs is the fear that they will face unwanted consequences due to their undocumented status. A published review of the existing literature on UMIs found that fear of deportation is a common factor that often prevents UMIs from seeking medical care (Sullivan & Rehm, 2005). For example, a study drawing on data collected in clinical practice and through ethnographic fieldwork found that, even if they are injured, undocumented Latinx day laborers in San Francisco avoid contact with health services “fearing that they might attract the attention of law enforcement or the INS [Immigration and Naturalization Services]” and face legal sanction (Walter, Bourgois & Margarita Loinaz, 2004). Additionally, studies show that UIs do not just fear the consequences that they will face personally, but also those that their families will face. In fact, focus groups with predominantly UMIs have underscored that these individuals often fear that disclosing their documentation status to health care providers will put their families at risk of deportation (Raymond-Flesch et al., 2014). Aside from the fear of deportation, research shows that non-U.S. citizens may also fear that accessing health care services will put their and their families’ “future security,” such as residency or citizenship applications, in jeopardy (Pitkin Derose, Escarce, & Lurie, 2007; Bernstein, McTarnaghan & Gonzalez, 2019).

Though fear of deportation and other legal sanctions has always been an issue, data show that the harsh immigration policies and anti-immigrant rhetoric under the Trump administration are leading to “substantially increased fears” among immigrants, and that “these fears are leading families to turn away from utilizing programs and services for themselves as well as their children, who are primarily U.S. born” and, thus, may legally qualify for services (Artiga & Diaz, 2019).

The second behavioral risk factor identified at the individual level is that diagnosed UMI male adults do not correctly and/or consistently adhere to recommended treatment regimens prescribed by health care professionals (including mental health professionals). A 2010 study

using data from three nationally representative studies looked at depression prevalence estimates, age of onset, severity, associated disability, and disaggregated treatment use (pharmacotherapy and psychotherapy) and treatment guideline concordant use for 14,710 respondents across the country (González, Tarraf, Whitfield, & Vega, 2010). In examining the data by ethnic subgroup, the researchers found that compared to non-Latino Whites, African Americans and Mexicans had “significantly higher depression chronicity” but yet “significantly lower depression care use and guideline concordant use than Whites” (González et al., 2010). Moreover, data from a national probability survey of Latinx in the U.S found that 7% of respondents had taken an antidepressant in the preceding 12 months, but that 33.3% had stopped taking antidepressants by the time of interview (Hodgkin, Volpe-Vartanian & Alegría, 2007). Additionally, 18.9% of those who had discontinued use had done so *without* input from their health care provider (Hodgkin et al., 2007). It is noteworthy that *uninsured* individuals were more likely to have stopped taking antidepressants and to have done so prior to medical input, and that patients who reported good or excellent English proficiency were less likely to stop at all (Hodgkin et al., 2007). These last two findings are highly relevant to this needs assessment proposal since, as discussed previously, UIs are more likely to be uninsured and more likely to have limited English proficiency (LEP) than other immigrant groups.

Based on the existing literature, there are various personal determinants that influence this behavioral risk factor. The first personal determinant identified for this behavior is that diagnosed UMI male adults have negative attitudes toward the treatments prescribed by health care professionals. A study exploring perceptions of depression and attitudes toward depression treatments among 56 Latinx immigrant men (predominantly of Mexican origin) found that most men preferred counseling over antidepressants (Cabassa, 2007). While 93% of men agreed or strongly agreed that counseling would restore depressed individuals to their normal level of functioning, only 54% of men reported the same attitudes toward antidepressants (Cabassa, 2007). Additionally, 61% of men agreed or strongly agreed that antidepressants were addictive (Cabassa, 2007). These findings suggest that if health care providers prescribe antidepressants to Mexican men, men may not adhere to the treatment due to their negative attitudes toward them.

Even though the literature points to Latinx being uncomfortable with psychotropics and preferring non-medical treatment modalities, such as psychotherapy or counseling, it is important to note that Latinx immigrants may also have negative attitudes toward counseling in a U.S.

setting. This is due to the perceived “coldness” of and lack of reciprocity from providers in this country, which challenges Latinx perceptions that therapy should provide “a context for sharing emotions and for building new supportive relationships” (Martínez Pinca & Guarnaccia, 2006).

Another personal determinant is that diagnosed UMI male adults do not understand the treatment regimen that has been prescribed by the health care professional. A telephone survey conducted with 1,200 Californians in 11 different languages (including Spanish) explored the relationship between English proficiency and medical comprehension (Wilson, Hm Chen, Grumbach, Wang & Fernandez, 2005). The study found that almost half of the respondents were limited English proficient (LEP), and that LEP respondents were “significantly more likely than their English-proficient counterparts to report problems understanding a medical situation... confusion about how to use medication...trouble understanding a medication label...and a bad reaction to medication due to problems understanding the instructions” (Wilson et al., 2005). Though not understanding treatments is certainly related to patients not receiving care in their preferred language, it is also tied to *how* health care providers speak to patients about treatment. In fact, research has found that patients who report seeing providers who use more collaborative interaction styles and who engage in “information-giving” and “question-asking” about medications were more adherent to antidepressant regimens (Sleath, Rubin & Huston, 2003). Unfortunately, research points to Latinx not having these types of collaborative interactions with their providers. In fact, a study using a data set of audiotapes and transcripts of 98 medical visits, as well as medical and pharmacy records, found that Hispanic patients were significantly less likely to be given information about their antidepressants than non-Hispanic White patients, and that Hispanic patients who were on antidepressants stated less information to their physicians about their antidepressants than non-Hispanic White patients (Sleath et al., 2003). This poor communication between providers and Hispanic patients can lead to a lack of understanding of treatment and, thus, poor medication adherence among Latinx (Sleath et al., 2003).

In addition, another personal determinant for this behavior is that diagnosed UMI male adults believe that their undocumented status is a barrier to engaging in health-promoting behaviors, scheduling and attending follow-up visits, accessing medications and other services prescribed by a health care professional, and using these medications and services as prescribed. Studies have shown that, throughout history, states’ exclusionary immigration policies have increased fears among UIs that they will not receive medical services because of their

undocumented status and have increased the likelihood that UIs will report unmet needs for medical services, such as prescription drugs (Berk & Schur, 2001). Most recently, due to the increased presence of Immigration and Customs Enforcement (ICE), health care providers and advocates have reported that immigrants are missing scheduled health appointments “due to their fear of being stopped en route by police and reported to ICE” (Hacker, Chu, Arsenault & Marlin, 2012). These are not just anecdotes. In fact, a quantitative study analyzing missed appointment rates at a network of safety-net health centers in Massachusetts prior to and following immigration policy changes in January 2017 found that there was a significant difference in the rate of missed appointments among non-English speakers (Jirmanus, 2019). This finding is important as missing health appointments can delay the provision of care and treatment and worsen health outcomes.

Furthermore, as a result of the Trump administration’s 2018 proposed expanded public charge rule, research has found that Spanish and English-speaking immigrants are foregoing use of vital social services and medical care due to their immigration status (Bernstein et al., 2019a). In fact, 25 in-depth interviews with immigrant families conducted by the Urban Institute in March 2019 found that reduced access to medical care was one of the most prevalent impacts of the proposed public charge rule among these respondents (Bernstein et al., 2019a). Researchers noted that individuals who dropped medical care were forgoing treatment for existing chronic conditions (Bernstein et al., 2019a). In addition, the study found that many respondents had stopped using services like SNAP, for themselves and their children (Bernstein et al., 2019a). Those who stopped SNAP participation reported a decreased ability to engage in health-promoting behaviors (e.g. consuming nutritious food), an increase in financial insecurity, and a decrease in mental health status (Bernstein et al., 2019a).

Moreover, two additional personal determinants for this behavior are that diagnosed UMI male adults believe that cost *and* time are barriers to engaging in health-promoting behaviors, scheduling and attending follow-up visits, accessing medications and other services prescribed by a health care professional, and using the medications and services as prescribed. A literature review found that some of the most common challenges that Latinx from low SES backgrounds face in adequately utilizing mental health treatment are: limited availability of time to seek services, inability to afford services, and difficulties with transportation (Kouyoumdjian, Zamboanga & Hansen, 2006). Additionally, since for many Latinx it may be too costly to take

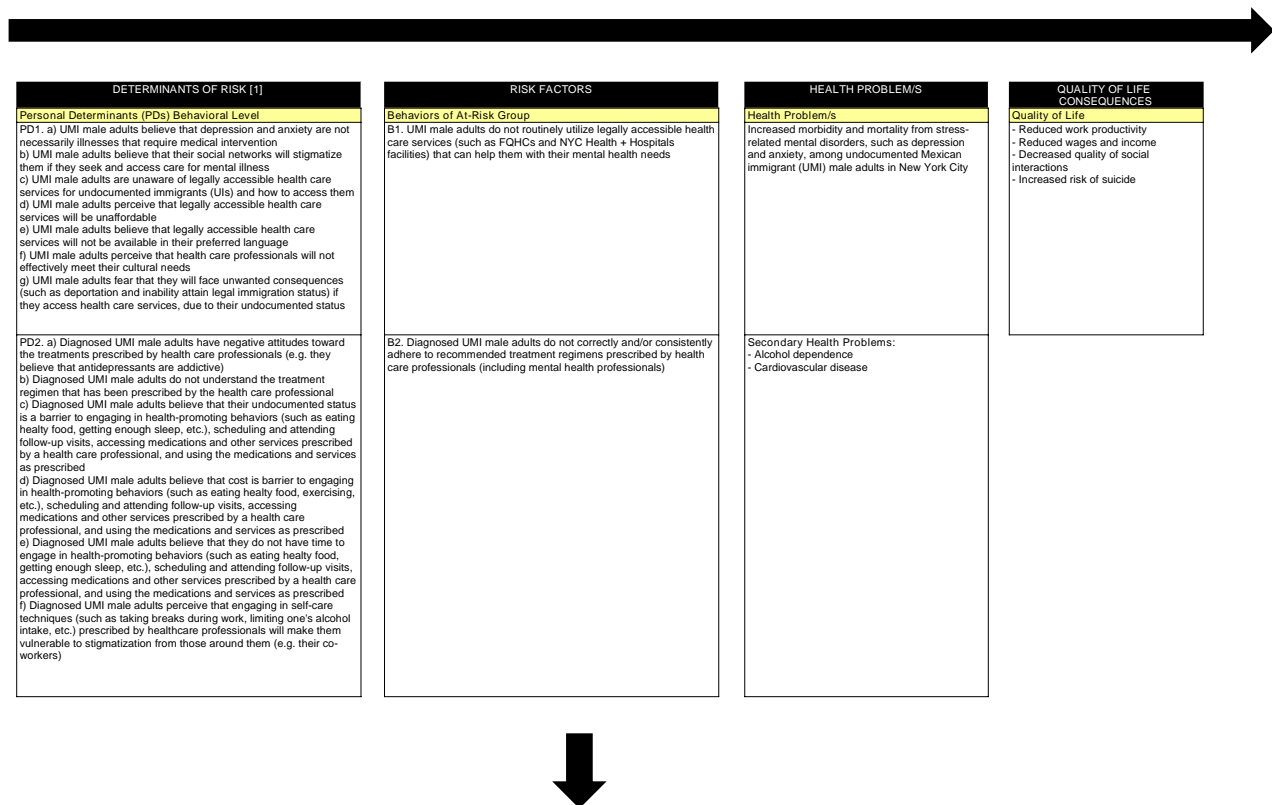
time off from work to attend all required treatment sessions, Latinx are more likely to completely and “prematurely terminate from therapy” (Kouyoumdjian et al., 2006). Moreover, interviews with predominantly Mexican, undocumented Latinx young adults have also highlighted that financial and time stressors limit this populations’ ability to engage in healthy activities that are typically recommended by health care providers (Raymond-Flesch, 2014). Illustrative quotes from these interviews include: “I don’t have time...to do exercise. It’s not in my priorities because of work and family responsibilities that I have to take care of, lack of money, lack of transportation,” and “When I get sad, I want to eat. When I want to eat, there’s no money to eat something good. So, it’s fast food. So, it’s just like a chain of things that just lead to poor health” (Raymond-Flesch, 2014). Overall, as seen from the literature, cost and time are both barriers to correctly and consistently adhering to healthy behaviors and treatment regimens recommended by health care professionals.

The final key personal determinant for this behavior is that diagnosed UMI male adults perceive that engaging in self-care techniques and in treatments prescribed by healthcare professionals will make them vulnerable to stigmatization from those around them (e.g. their co-workers). As previously discussed, undocumented immigrant men are overrepresented in jobs that involve a significant amount of risk (Orrenius & Zavodny, 2009). Additionally, many of these jobs, such as jobs in the construction and the roofing industry, value “profit and productivity over safety” and are jobs “in which men ascribe to masculine ideals in order to adapt to the hazards and demands of the job and to work alongside coworkers who enforce these norms” (Chávez & Altman, 2017). Considering that one out of every two workers in roofing is Latinx, a 2017 study used in-depth interviews with 40 undocumented Mexican roofers to examine the occupational experiences of these men (Chávez & Altman, 2017). The study found that since each worker’s remittances depend on the *collective* labor of the entire crew, workers engaged in a lack of self-care and denial of pain in order to maximize earnings and express their masculinity to other men (Chávez & Altman, 2017). The respondents reported skipping breaks and skipping meals, working through pain and injuries, rejecting safety practices, and even avoiding the doctors “who...would recommend rest” (Chávez & Altman, 2017). Additionally, many roofers also reported drinking *excessively* in their spare time “as a way to deal with loneliness, to reward themselves for working hard, and to bond with fellow roofers” (Chávez & Altman, 2017). Aside from engaging in these behaviors as a way to bond with their coworkers,

men also reported doing them in order “avoid being emasculated with taunts or jokes for not partaking” (Chávez & Altman, 2017). This highlights how fear of stigmatization can deter UMI male adults from engaging in self-care techniques and in treatments prescribed by healthcare professionals.

Though, as seen in this section, the literature supports the two behavioral risk factors at the individual level, as well as their personal determinants, it is important that more primary data be collected from UMI male adults (including those who have been diagnosed with depression and/or anxiety) in NYC in particular. Specific data collection methods are discussed following this section.

Below is the completed LOR for the individual level. All behavioral risk factors and personal determinants discussed above are included in this LOR. A horizontal arrow at the top of the LOR has been included to indicate how the personal determinants influence the behavioral risk factors and how the behavioral risk factors influence the health problem, which in turn influences the quality of life consequences. A vertical arrow has also been included to indicate how the behavioral risk factors at the individual level can influence the behavioral risk factors at the higher environmental levels.



Proposed Data Collection and Analysis Methods for the Individual Level

Focus Groups with UMI Male Adults

To fill in the gaps identified at the individual level, focus groups should be held with UMI male adults in NYC to develop a better understanding of the barriers and facilitators that influence their use of legally accessible health care services, such as FQHCs and NYC Health + Hospitals facilities, that can help them with their mental health needs. Information gathered from these focus groups will provide insight into UMI male adults' values, knowledge, attitudes, beliefs, and skills as related to accessing health care services.

Participants for the focus groups should be recruited and enrolled through community-based organizations (CBOs) in NYC that serve Latinx immigrants, including undocumented immigrants. Examples of CBOs include: Make The Road New York, Voces Latinas, New York Immigration Coalition, Northern Manhattan Coalition for Immigrant Rights, Mexicanos Unidos de Queens, faith-based organizations (e.g. churches), among others. Working with CBOs is key as community members may feel more comfortable in these community-based settings that they may already be familiar with. Aside from recruiting through CBOs, snowball sampling should also be used so focus group participants can refer those in their networks to the groups. Considering the current anti-immigrant rhetoric and exclusionary policies, the anonymity and confidentiality of the focus groups should be widely advertised to potential participants.

To be able to more effectively cater to UMI male adults needs, the focus groups should be conducted in Spanish and English (depending on participants' language preference) by highly-trained facilitators who speak Spanish (specifically, Mexican Spanish) and English fluently. Facilitators should have experience moderating focus groups in both languages. If it is deemed appropriate that CBO staff conduct the focus groups, staff should be trained well and should have the opportunity to practice moderating pilot focus groups prior to the actual focus groups. Regardless of who moderates the focus groups, the groups should be held at CBO offices to ensure that participants feel comfortable. Focus groups should include 6-10 participants, and should last around 60 minutes. They should also be held at various points in the day, including in the late evening, as participants may have highly different work schedules. Moreover, participants should be compensated for their time and provided with a meal or snacks during the groups. Throughout the focus groups, the facilitator should remind participants that everything

will remain anonymous and confidential. The facilitator should also encourage participants to speak to one another and remind them that disagreement is welcome and that there are no right or wrong answers. Additionally, the facilitators should ask probing questions and ask for clarification as needed, and not share their own opinions.

All focus groups should be audio recorded and transcribed for review and analysis. After each focus group, members from the research team and the focus group facilitator should meet to debrief. Each focus group transcript should be reviewed by team members and a codebook should be generated based on the transcripts. The codebook should be continually refined until consensus is reached. Once the codebook is finalized, all transcripts should be coded and analyzed using a qualitative data analysis software package, such as NVivo or ATLAS.ti. Focus groups should ideally be conducted until saturation is reached.

A proposed focus group guide, informed by select constructs from the Health Belief Model, is provided in Appendix C. The Health Belief Model (HBM) is an individual level theory containing constructs that predict whether and why people will engage in a health-related behavior (Glanz et al. 2015). The 6 constructs in the HBM include: perceived susceptibility (the belief about the likelihood of getting a condition), perceived severity (the belief about the seriousness and the consequences of getting a condition), perceived benefits (the belief about the positive aspects of performing a health behavior to reduce a threat), perceived barriers (the belief about the obstacles to and negative aspects of engaging in a health behavior), cues to action (internal or external factors that prompt a health behavior), and self-efficacy (the belief and confidence about successfully performing a health behavior) (Glanz et al. 2015).

Though the focus group guide in Appendix C is in English, the focus group guide will also be needed in Spanish. To ensure the Spanish version is appropriate and elicits meaningful responses, the guide should be first translated into Spanish and then back-translated into English. Additionally, to the extent possible, the focus group guide should be reviewed by and pre-tested with members of the at-risk population as well as by other stakeholders (such as CBO staff) prior to administration.

Focus Groups with Diagnosed UMI Male Adults

Focus groups should also be held with UMI male adults in NYC who have been diagnosed with depression and/or anxiety to gain a better understanding of the barriers and

facilitators that influence this population's correct and consistent adherence to recommended treatment regimens (for depression and/or anxiety) prescribed by health care professionals. Information gathered from these focus groups will provide insight into UMI male adults' values, knowledge, attitudes, beliefs, and skills as related to depression/anxiety treatment adherence.

Participants for the focus groups should be recruited and enrolled through NYC Health + Hospitals facilities and FQHCs throughout the City. Participants should be referred by their healthcare professionals or other relevant staff, as well as be self-referred via recruitment flyers and other recruitment methods. Just like for the previously proposed focus groups, the anonymity and confidentiality of the focus groups should be widely advertised to potential participants. Similarly, the focus groups should also be conducted in Spanish and English by highly-trained facilitators who speak Spanish (specifically, Mexican Spanish) and English fluently.

These focus groups should be held at NYC Health + Hospitals or FQHC facilities, or at immigrant-serving CBOs located in the participants' communities as participants may already be familiar and more comfortable with these spaces. The size, duration, and timing of these focus groups should be similar to those of the previously proposed groups. These participants should also be similarly compensated for their time and effort and be provided with a meal or snacks during the groups. The data analysis for these focus groups should be the same as the data analysis for the previously proposed focus groups.

A proposed focus group guide, informed by select constructs from the Theory of Planned Behavior (TPB), is provided in Appendix D. The TPB focuses on exploring people's beliefs regarding a health behavior to determine the likelihood of people actually performing the health behavior (Glanz et al. 2015). In the TPB, the most important determinant of behavior is behavioral intention, which is the perceived likelihood of performing the behavior (Glanz et al., 2015). The three determinants of behavioral intention in the TPB are: attitude (feelings about and evaluation of the health behavior), subjective norms (beliefs about whether most important people approve or disapprove of the health behavior), and perceived control (perceived control over performing the health behavior) (Glanz et al., 2015). Though the focus group guide in Appendix D is in English, the focus group guide will also be needed in Spanish. To ensure that the questions in Spanish are appropriate and elicit meaningful responses, the Spanish guide should be back-translated. Additionally, to the extent possible, the focus group guide should be reviewed by and pre-tested with members of the at-risk population as well as by other

stakeholders (such as health care professionals) prior to administration.

Interpersonal Level Behavioral Risk Factors and Personal Determinants

The next level is the interpersonal level. The interpersonal level is the first of the four environmental levels, and it refers to individuals or groups of people that are closely connected to the at-risk population and are likely to have an influence on their health-related behaviors or on the health problem directly (Bartholomew Eldredge et al., 2016). The two key agents identified at this level were family members and colleagues of UMI male adults.

The three behaviors included in this level are:

1. Family members do not provide the appropriate or adequate social support (i.e. emotional, instrumental, informational, and appraisal support) needed to encourage and facilitate UMI male adults' (including UMI male adults experiencing stress-related mental disorders, such as depression and anxiety) utilization of legally accessible health care services (such as FQHCs and NYC Health + Hospitals facilities) that can help with mental health needs
2. Family members do not facilitate adherence to recommended treatment regimens prescribed by health care professionals among UMI male adults diagnosed with stress-related mental disorders, such as depression and anxiety
3. Colleagues do not promote healthy behaviors (e.g. seeking routine medical care, abstaining from inappropriate amounts of alcohol) that can help alleviate stress and prevent exacerbation of stress-related mental disorders, such as depression and anxiety, among UMIs

Family Members

Regarding the first behavioral risk factor identified at this level, the literature shows that social support is related to positive health outcomes (Glanz et al., 2015). In fact, a recent meta-analysis found that individuals reporting greater social support had a 50% increased odds of survival relative to individuals lacking social support (Glanz et al. 2015). Additionally, though social support can have a direct health-enhancing effect on individuals, it can also *indirectly* influence health by acting as a buffer and diminishing the negative health effects of stress (Glanz et al. 2015). This stress-buffering interaction is highly relevant to our at-risk population since, as

previously described, UMIs face severe stressors.

However, UMIs may often lack social support as many have severed family ties due to their restricted mobility and inability to go back to Mexico to visit family, and as they are routinely ostracized by American society (Sullivan & Rhem, 2005; MOIA, 2018). A study published in 2005 reviewed 197 outpatient adult psychiatric charts in a Latinx mental health outpatient treatment program in NYC to explore patterns of mental health care use, psychiatric diagnoses, and psychosocial problems among the undocumented population (Carmela Pérez & Fortuna, 2005). This study found that, compared to documented immigrant Latinx or U.S.-born Latinx, the undocumented (who were mostly from South America or Mexico) had a greater number of psychosocial stressors including lack of family supports (Carmela Pérez & Fortuna, 2005). Another study with Latinx family members of adults with serious and persistent mental illness living in a predominantly Latinx- and Mexican-descent city in the Southwest found that lack of family support was a barrier to obtaining mental health treatment for their relatives with mental illness (Marquez & Ramírez García, 2013).

There are various personal determinants that influence family members' inadequate or inappropriate provision of social support needed to encourage and facilitate UMI male adults' utilization of legally accessible health care services. The first personal determinant is that family members believe that depression and anxiety are normal consequences of UMI male adults' life circumstances. A study using interviews with Latinx immigrants, some of whom had family members who had been diagnosed with depression, found that many participants believed that depression was a result of situations and hardships of everyday life (Martinez Tyson et al., 2016). As a result of this belief, about 41% of respondents stated that depression could *not* be prevented (Martinez Tyson et al., 2016). Furthermore, a study using a convenience sample of 56 Latinx immigrant men, 24 of whom were patients at a primary health care clinic and 32 of whom were family members of those patients, found that most men saw depression as resulting from an array of normal life stressors, such as romantic or marital problems, economic strains, and other problems and pressures associated with being a Latinx immigrant man (Cabassa, 2007).

Since depression and anxiety may be seen as normal consequences of life, family members may also perceive mental illness to be something that UMI male adults have the ability to surmount on their own. Focus groups with Latinx immigrants found that, across all immigrant subgroups (Puerto Rican, Cuban, Mexican, and Colombian), participants held the belief that

depression could be “overcome by working through problems and having the self-motivation to ‘get out of it’ ” (Martinez Tyson et al., 2016). About 40% of these focus group participants had family members who had been diagnosed with depression (Martinez Tyson et al., 2016). Moreover, another focus group study with Latinx immigrants (including Mexicans) in New York and New Jersey found that participants placed great value in trying to deal with mental health concerns on one’s own before seeking professional help (Martínez Pincay & Guarnaccia, 2006). Those who were unable to deal with these kinds of issues on their own may be seen as “weak” or “useless” (Interian et al., 2007). Not only do family members expect individuals to handle mental health issues on their own, but they may even actively stop them from seeking help (Ishikawa, Cardemil & Falmagne, 2010). In fact, a study examining help-seeking pathways and help-receiving experiences among Latinx with a history of mental illness noted that family members sometimes dissuaded relatives from seeking mental health support from “outsiders,” like therapists or other mental health professionals (Ishikawa et al., 2010). This lack of support from family members may result in individuals believing that their suffering is not severe and does not require attentions, further exacerbating their distress (Ishikawa et al., 2010).

Even if family members do want their suffering relatives to receive professional assistance, family members also may not necessarily know where they can take their UMI male adult relatives to receive health care services (including mental health care services) that can address their mental health needs. A study assessing immigrant Latinx’s knowledge of community resources for young adults with mental health concerns, like suicidal ideation and depression, found that fewer than 1 in 4 respondents knew of a place or a resource for those contemplating suicide, and less than 1 in 5 respondents knew of a place in the community that could help with depression (García, Gilchrist, Vazquez, Leite & Raymond, 2010). More than 85% of the study participants were Mexican (García et al., 2010). Furthermore, another study using data from the National Survey of America’s Families (NSAF) found that, compared to U.S.-born citizens, noncitizens were at the highest risk of not being aware of health and community resources for health and social needs, followed by naturalized citizens (Yu, Huang, Schwalberg & Kogan, 2005). Though 15 years old, this finding may still be noteworthy as it highlighted that immigrant family members of varying immigration statuses may not be aware of services that can benefit others in their households. Due to the limited research on this topic in NYC, this is an area for future primary data collection. A questionnaire could be distributed to

mixed-status families (i.e. families where at least one person is undocumented) and Mexican families in NYC to help us get a better sense of family members' knowledge of available and accessible health care services for undocumented relatives facing mental health concerns. Specific data collection methods for this survey will be discussed following this section.

Family members may also fail to provide the necessary social support needed to encourage and facilitate UMI male adults' utilization of legally accessible health care services due to a belief that there are more pressing priorities and needs requiring their attention and time. Researchers conducted 120 interviews with foreign-born Latinx (including Mexicans) in West Central Florida to explore perceptions of depression and access to mental health care (Martinez Tyson, Arriola & Corvin, 2016). During the interviews, participants discussed “how support from family...was vital and would help motivate a person to get care,” but they also mentioned that family members would have difficulty helping because of their own life stress (e.g. working two jobs) and due to other “demands of living in the United States” (Martinez Tyson et al., 2016). Similarly, focus groups with Latinx immigrants have highlighted that family members “may not be aware or be able to be sensitive to the problems a person is facing” since they are often working long hours and dealing with their own burdens (Martínez Pincay & Guarnaccia, 2006). Overall, the literature points to families with undocumented individuals often facing “scarce financial resources” that “place medical and mental health needs below food, shelter, and education” (Raymond-Flesch et al., 2014).

The final personal determinant for this behavior is that family members fear that, if UMI male adults access health care services, other members of the household will be put at risk. A published review of the existing literature on UMIs specifically noted that, even when just *one* member of family is undocumented, the entire family may deny themselves needed health care due to fear that they will become targets of an Immigration and Naturalization Services (INS) investigation (Sullivan & Rhem, 2005). The literature also makes clear that mixed-status families are likely to avoid government benefits or services due to a fear that family members will be deported, that families will be separated, and that “immigrant parents will be taken from their children” (Menjívar & Gómez Cervantes, 2016; Aranda, Menjívar & Donato, 2014). Information is lacking about how this plays out among mixed-status families and Mexican families in NYC in particular. As such, this an area for future primary data collection. The previously proposed questionnaire could also include some questions that can enhance our understanding of how fear

impacts family members' ability to encourage and facilitate UMI male adults' utilization of legally accessible health care services, such as FQHCs and NYC Health + Hospitals facilities. Specific data collection methods for this questionnaire will be discussed following this section.

The second behavioral risk factor identified at the interpersonal level is that family members do not facilitate adherence to recommended treatment regimens prescribed by health care professionals among UMI male adults diagnosed with stress-related mental disorders, such as depression and anxiety. Research with Latinx adults who have mental illnesses has found that supportive behaviors on the part of family members and caregivers are related to higher usage of medications and treatments (Marquez & Ramírez García, 2013). However, family members may not always facilitate adherence. In fact, a study with Latinx caretakers caring for family members with mental illness found that 50% of caretakers reported a lack of family support for treatment and that this lack of family support was a barrier to continuing mental health treatment for their relatives (Marquez & Ramírez García, 2013). Additionally, a study focused on a group of Latinx (including Mexicans) receiving antidepressants in a community mental health clinic in an urban area of New Jersey found that 30% of participants described encountering family influences that were “treatment discouraging” – participants explained that family members often disagreed with the concept of medications as treatment for mental health issues and, thus, discouraged their relatives from using them (Martinez, Interian, & Guarnaccia, 2012). Considering that poor adherence to mental health treatments is common among the Latinx population (including the Mexican population) and keeping in mind that interventions to increase family involvement have been shown to increase this population's adherence to treatment, it is important to explore why family members do not facilitate adherence to recommended treatment regimens prescribed by health care professionals among UMI male adults.

The first personal determinant for this behavior is that family members do not believe that a treatment regimen, as prescribed by a health care professional, will be effective in treating the UMI male adult's stress-related mental disorders. Some Mexican families in the U.S. may believe in more traditional folk healing practices, in which healing is focused on addressing “the religious or spiritual dimension or spirit, the affective-emotional dimension or soul, and the somatic processing dimension or body” (Loera et al., 2009). In folk healing, the spirit plays a vital role in the understanding of mental illnesses, and massages, herbal treatments, prayer, meditation, and counseling are believed to help people “regain emotional balance” (Loera et al.,

2009). In present day Mexico, the belief in folk healing practices is usually confined to small towns that do not have access to medical care or other public health services and to places with large indigenous populations (Loera et al., 2009). This is particularly noteworthy because the majority of Mexicans in NYC are from the Mexican state of Puebla, where almost 20% of the population is indigenous, and, thus, they may hold some of these traditional healing beliefs (Loera et al., 2009). The literature shows that believing in folk healing practices does play a role in treatment adherence in the U.S. In fact, a study exploring Mexican caregivers' views and experiences related to treatment usage processes by their adult relatives with mental illness (SPMI) in the U.S. found that a substantial portion of caregivers "conceptualized their relatives' problems as having a spiritual, religious, or supernatural explanation" and "reported that use of folk healers was a barrier to [formal] service usage" (Marquez & Ramírez García, 2013).

Aside from believing that traditional healing practices may be better, family members may also perceive certain kinds of "Western" treatments to be more effective than others. A study that included interviews with family members of (predominantly) Mexican immigrant patients at a primary health care clinic found that over 90% of participants preferred counseling over antidepressants as counseling was perceived to be more effective in helping individuals with mental disorders regain normal functioning (Cabassa, 2007). This finding is notable since research has shown that if family members hold beliefs about treatment (e.g. counseling is better than medication) that are incongruent with what physicians prescribe (e.g. medications), patients "may have difficulty even forming a willingness or intention to adhere" to what their physician recommends (Martin, Williams, Haskard & DiMatteo, 2005). Though there is support for this personal determinant, this is an area for future primary data collection as we need to better understand the extent to which family members of UMI male adults in NYC believe that a treatment regimen, as prescribed by a health care professional, can be effective in treating disorders like depression and anxiety. Focus groups with family members of diagnosed UMI male adults would allow us to gather this information. Specific data collection methods for these focus groups will be discussed following this section.

Family members may also not facilitate adherence to treatment because they do not understand the treatment regimen that has been prescribed to the UMIs by the health care professionals. A report from the U.S. Department of Health and Human Services (HSS) found that members of racial/ethnic minorities are more likely to be misinformed about psychological

and pharmacological treatments for mental health issues, such as depression (Jang, Chiriboga, Herrera & Martinez Tyson, 2011). As such, they may hold misconceptions about mental health medications, such as that they are addictive (Jang et al., 2011). These types of misconceptions are common among Latinx immigrants, including Mexican immigrants (Cabassa, 2007). In the light of this lack of knowledge, it is striking that, compared to non-Latinx families, Latinx patients and families are less likely to be provided with information about treatments from health care professionals, including information about treatment purpose, dose, duration, side effects, and addiction potential (Sleath et al., 2003). Without this information, Latinx families are unable to ensure that their relatives are correctly adhering to treatment. Research with Mexican men has found that having family actively involved in depression treatment can enhance patients' acceptance of care. Other interventions have found that educating family members about the course of treatment results in family members reporting an improved management of their ill relative's behavior, as well as actual improvements in treatment adherence among their ill relatives (Dwight Johnson, Apesoa-Varano, Hay, Unutzer & Hinton, 2013; McDonald, Garg, & Haynes, 2002). Future data collection in NYC should also be done to explore family members' understanding of their diagnosed relatives' treatment regimens, and how this understanding impacts their ability to facilitate proper adherence to these treatments among their relatives. The previously mentioned focus groups would be a good way to gather this information. Specific data collection methods will be discussed following this section.

Another personal determinant for this behavior is that family members fear that if their loved ones engage in mental health treatment they and their families will be stigmatized by their social networks. Research with Mexican caregivers caring for adults with mental disorders, including depression, found that a large portion of caregivers identified *vergüenza* ("shame") and *el "que dirán?"* ("what will others say?") as barriers to receiving formal mental health services and to treatment retention for their relatives with mental illness (Marquez & Ramírez García, 2013). The researchers noted that there was a widespread preoccupation with "what others will think of their family" (Marquez & Ramírez García, 2013). Furthermore, a study exploring the perception of stigma among Latinx receiving antidepressants found that "family members were described as exerting a direct influence on whether the medications should be taken" and that family members feared that taking medications and utilizing mental health clinics would subject individuals and families to negative evaluation and negative behaviors from others (Interian et

al., 2007). The widespread stigma and negative associations linked to mental health issues, such as depression and anxiety, in Latinx culture can help explain why family members may not encourage and facilitate adherence to treatment among their relatives.

The last personal determinant that may contribute to family members not facilitating adherence to prescribed treatment regimens among their UMI male adult relatives is that family members believe that long-term treatment is unaffordable for the family. In a study with low-income, predominantly Mexican immigrant patients and family members at a primary health care clinic, researchers found that a large portion of respondents did not believe that they could afford prescription treatments for depression (Cabassa & Zayas, 2007). Similarly, research conducted with Mexican-descent caregivers of individuals with mental disorders found that cost of services and lack of insurance that would help cover these services was a barrier to continuous treatment for their ill relatives (Marquez & Ramírez García, 2013). The cost of the services themselves is not the only issue, but so is the cost of transportation needed to access these treatments. Investigators exploring the unmet needs of Latinx older adults struggling with mental health issues conducted interviews and focus groups with key informants (including family members) and found that transportation (and its associated cost) restricts access to mental health services and treatments among Latinx older adults and their caregivers (Barrio et al., 2008). As such, Latinx patients are unable to keep their medical appointments (Barrio et al., 2008). Considering that public transportation is expensive in NYC and that, even in FQHCs, finding affordable (mental) care is a significant problem when a patient is uninsured and needs specialty services, one can see how cost would severely limit family members' ability to facilitate adherence to recommended treatment regimens among their UMI male adult relatives (Berlinger et al., 2015).

Colleagues

The third behavioral risk factor identified at the interpersonal level is that male colleagues do not promote healthy behaviors that can help alleviate stress and prevent exacerbation of stress-related mental disorders, such as depression and anxiety, among UMIs. Research shows that gender is one of the most important sociocultural factors that is associated with and influences health-related behavior (Courtenay, 2000). In fact, an extensive review of studies, meta-analyses, and national data found that males of all ages are more likely than females to engage in over 30 behaviors that increase the risk of disease, injury, and death (Courtenay,

2000). A theory of men's health from a social constructionist and feminist perspective developed by Dr. Will H. Courtenay proposes that “health behaviours are used in daily interactions in the social structuring of gender and power... the social practices that undermine men's health are often signifiers of masculinity and instruments that men use in the negotiation of social power and status” (Courtenay, 2000). Though men as a whole are less likely to partake in behaviors that are linked with good health and a long life, factors like ethnicity, education level, economic status, and social context “influence the type of masculinity that men construct and contribute to differential health risks among men in the United States” (Courtenay, 2000). For men who are socially disadvantaged, such as UMI male adults, rejecting health behaviors that are deemed to be “feminine,” denying weakness or vulnerability, embracing risk, and dismissing help “are readily accessible means of enacting masculinity” (Courtenay, 2000). Studies conducted with undocumented Latinx laborers in the U.S. support these theories – these studies highlight that undocumented men are often forced to ascribe to highly masculine ideals in order to adapt to the hazardous demands of the jobs that are available to them and effectively “work alongside coworkers who enforce these norms” (Chávez & Altman, 2017).

The first personal determinant for this behavior is that colleagues believe that masculinity inherently involves risk-taking and dangerously exerting oneself. Studies with Mexican men have shown that one way in which these men enact their masculinity is by “migrating to the United States due to economic and cultural expectations tied to men and the life course” (Chávez & Altman, 2017). These studies have noted that, though dangerous, migration is often seen as a rite of passage and those who “do not attempt it are seen as lazy, unenterprising, and undesirable as potential mates” (Chávez & Altman, 2017). Once in the U.S., Mexican men often work jobs that require them to be tough and emotionally detached so as to increase productivity, which is frequently tied to wages (Chávez & Altman, 2017). A study comprised of 40 in-depth interviews with undocumented Mexican roofers noted that roofers constantly push each other to work harder and faster, and that they use workplace productivity to affirm or threaten other workers’ masculinity (Chávez & Altman, 2017). Roofers also mentioned that they expect others to work through injuries and pain so that the crew’s productivity and, thus, their wages, do not suffer (Chávez & Altman, 2017). Similarly, a study with Latinx day laborers in San Francisco found that the highest respect day laborers use for one another is “very hard worker” and that, among Mexican day laborers, a masculine identity emphasizes physical strength and working oneself

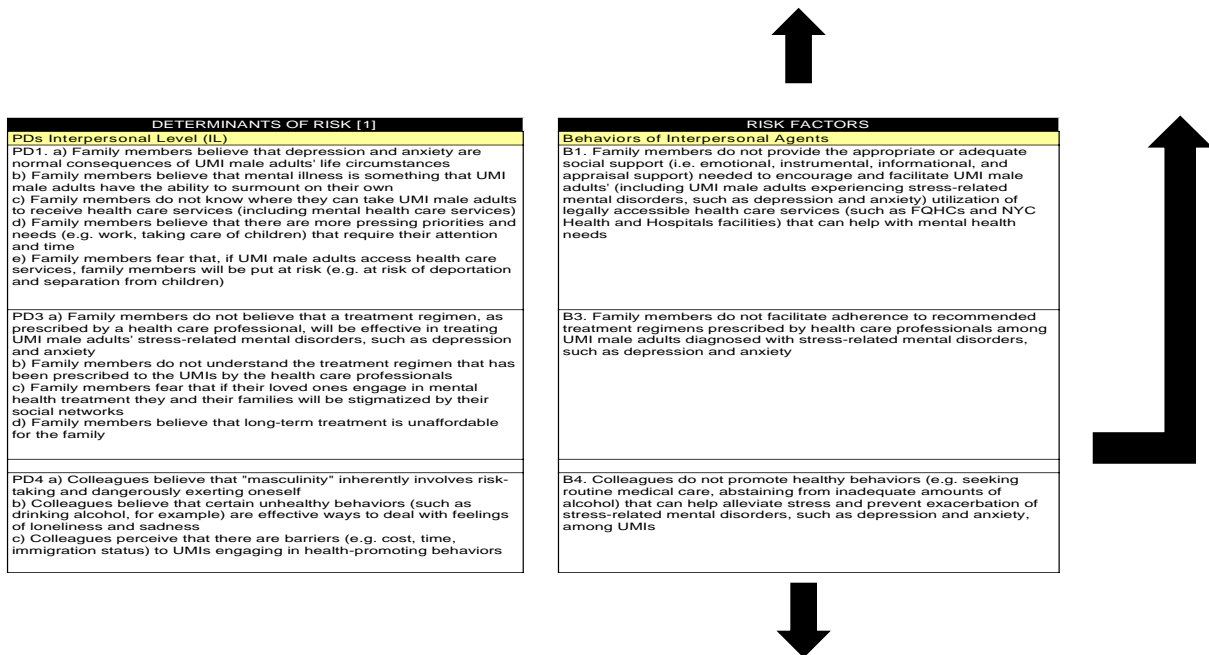
“to the bone” (Walter et al., 2004). If workers are unable to work hard (due to injuries, for example) their male identity is questioned, and they are regarded by colleagues to be “soft” or “lazy, good-for-nothing” (Walter et al., 2004). A primary care doctor who has spent more than 15 years serving the undocumented Latinx day laborer population in San Francisco has seen how detrimental occupational risk-taking, overexertion, and the resulting “assault” on their male identity can be to these men – she diagnosed a high incidence of depression, anxiety, and substance abuse connected to injury and disability (Walter et al., 2004).

Not only do colleagues believe that masculinity inherently involves risk-taking and dangerously exerting oneself, but they also believe that certain unhealthy behaviors are adequate ways for UMI male adults to deal with feelings of loneliness and sadness. A study with undocumented Mexican roofers draws attention to how workers’ masculine ideals influence the adoption of negative behaviors by crew members; negative behaviors include using alcohol, abstaining from an adequate amount of sleep, and consuming unhealthy diets (Chávez & Altman, 2017). Similarly, studies with Latinx laborers have noted that workers routinely utilize negative mechanisms for coping with stress and depression – these negative mechanisms include abstaining from talking about or acknowledging feelings of sadness, and drinking alcohol or using other substances (Winkelman, Chaney & Bethel, 2013; Organista, 2007; Chávez & Altman, 2017). Some studies have found that these negative behaviors are normalized and encouraged by coworkers and employers, and are regarded as a way to relieve boredom and stress and to self-medicate for aches and injuries (Organista, 2007). The widespread use and normalization of these maladaptive strategies is problematic as inadequate sleep and excessive use of alcohol, for example, exacerbate existing stress and mental disorders (Conner et al., 2009).

Similarly, colleagues also perceive that there are barriers to UMIs engaging in health-promoting behaviors. Studies with undocumented Mexican laborers have found that when coworkers get injured or are sick, men are not encouraged to go to the hospital or to see a doctor due to cost barriers (Chávez & Altman, 2017). An interview quote that illustrates this point is: “Well, we are cheap labor . . . We don’t use doctors in the US” (Chávez & Altman, 2017). Not only does cost prevent laborers from seeking care for themselves and for each other, but immigration status is also a barrier. During an interview, a Mexican day laborer explained that “You can’t get sick because if you do get sick, you don’t have anyone to help you get out of your sickness... therefore, it is prohibited for an illegal [immigrant] to get sick in the US” (Chávez &

Altman, 2017). Cost barriers do not only hinder access to care, but they also affect nutritional habits. Studies with Latinx farmworkers have found that hunger and food insecurity is common among workers, and that workers reduce food variety or consume less food in order to make money last longer (Quandt, Arcury, Early, Tapia & Davis, 2004). This is noteworthy as hunger is an adverse experience that can contribute to mental health problems (McIntyre, Williams, Lavorato & 2013). Additionally, work crews may also not promote getting adequate hours of sleep each night as their limited time and busy work schedules make getting sufficient sleep impossible. In fact, in a study with Mexican roofers, many of them complained that “by the time they arrived home from work, ate, and showered, it was usually around midnight,” which left them with maximum of six hours of sleep before having to get up for work (Chávez & Altman, 2017). These barriers related to cost, time, and immigration status hinder the ability of colleagues to promote healthy behaviors among UMI male adults; healthy behaviors that can help lessen stress and prevent mental disorders, such as depression and anxiety, from getting worse.

Below is the completed LOR for the interpersonal level. All behavioral risk factors and personal determinants discussed above are included in this LOR. Arrows have been included to indicate how the behavioral risk factors at the interpersonal level influence the behavioral risk factors at the individual level as well as the behavioral risk factors at the higher environmental levels. In addition, the arrow on the right side of the LOR indicates how the interpersonal behavioral risk factors can contribute to and influence the health problem directly.



Proposed Data Collection and Analysis Methods for the Interpersonal Level

Preliminary Questionnaire for Mixed Status, Mexican Families

To fill in the gaps identified at the interpersonal level, a brief questionnaire should be distributed to Mexican, mixed status families (i.e. families where at least one person is undocumented). This questionnaire would provide insight into family members' knowledge and awareness of available and accessible health care services for undocumented relatives with mental health concerns, as well as insight into how fear of negative consequences impacts family members' willingness and ability to encourage and facilitate UMI male adults' utilization of these services. Though the responses to the questionnaire will fill gaps in the literature as they relate to these two personal determinants, it will also further our understanding of other personal determinants that influence family members' behaviors. These personal determinants include: family members' belief that mental disorders, such as depression and anxiety, are normal consequences of UMIs' life circumstances, and family members' belief that mental disorders are something that UMIs have the ability to surmount on their own. Moreover, the questionnaire may also help identify other personal determinants that may not have been identified in the literature.

Since NYC Health + Hospitals and FQHCs are the two major safety-net health care systems in NYC – serving individuals who are undocumented, uninsured, and low-income – (Berlinger et al., 2015), the brief questionnaire should ask questions specific to these facilities. A proposed questionnaire focused on NYC Health + Hospitals facilities is included in Appendix E. This proposed questionnaire only includes questions about NYC Health + Hospitals facilities since NYC Health + Hospitals is the largest public hospital system in NYC. The proposed questionnaire also only focuses on NYC Health + Hospitals facilities in Queens as Queens has the largest undocumented immigrant population in NYC and as it is also home to the largest Mexican population in the City (MOIA, 2018; New York City Department of City Planning, 2013). Thus, there is a higher probability of finding members of the population we seek to target with this questionnaire if data collection is conducted in Queens. Additional questionnaires focused on FQHCs or on other NYC Health + Hospitals facilities could be developed by the research team, if necessary.

To identify individuals living in Mexican, mixed status families, researchers should work

closely with CBOs in Queens that serve Mexican immigrants, including undocumented immigrants. Examples of these CBOs are provided in the “Proposed Data Collection and Analysis Strategies for the Individual Level” section. Additionally, researchers could also approach supermarkets, bodegas, and restaurants that serve this population to explain the purpose of the questionnaire and see whether these venues would be able to assist in recruiting people to fill out the questionnaire. Aside from recruiting through CBOs and other venues, snowball sampling should also be used so those participating in the questionnaire can refer those in their networks.

Just like for the previously proposed focus groups, participants should be adequately compensated for their time and effort. Considering the current anti-immigrant rhetoric and policies, the purpose of the questionnaire and the confidentiality and anonymity of information should be clearly and widely advertised to potential participants. Additionally, the questionnaire should be self-administered. Self-administration is preferred as the questionnaire asks questions that can be stigmatizing to participants and, compared to personal interviewing, a self-administered approach offers greater privacy to participants sharing this type of information (Aday & Cornelius, 2006). Additionally, the questionnaires should ideally be filled out on a tablet so as to make the data collection process more confidential and anonymous, and to save researchers the time from having to enter the data manually onto a computer for data analysis.

To analyze the data, the responses from the questionnaires should be entered into a statistical software package (like STATA, SPSS, or SAS) and descriptive statistics should be used to analyze the results. Response frequencies for each question will provide critical information about factors that influence family members’ willingness and ability to encourage and facilitate UMI’s use of NYC Health + Hospitals facilities that can help them with mental health needs. In addition, for the few open-ended questions (i.e. questions where respondents can write in their answers), very simple qualitative data analysis would also need to be conducted. For these questions, researchers should read through the responses, create categories for the responses, and fit the responses into these categories (Gilmore, 2012). Researchers should also indicate how many people offered each type of response (Gilmore, 2012). A program like Excel or NVivo can be used to do this.

The proposed questionnaire in Appendix E has been informed by select constructs from the previously discussed Health Belief Model (HBM). Though the questionnaire in Appendix E

is only in English, the questionnaire will also be needed in Spanish. As such, the proposed questionnaire should be translated into Spanish and back-translated into English to ensure that the questions make sense and elicit meaningful responses. Additionally, to the extent possible, the questionnaire should be reviewed by and pre-tested with members of the target audience as well as by other stakeholders (such as NYC Health + Hospital staff) prior to administration.

Focus Groups with Family Members of Diagnosed UMI Male Adults

Focus groups should also be held with family members of UMI male adults who have been diagnosed with depression and/or anxiety (and of UMIs in general) to gain more insight into the personal determinants associated with family members *not* facilitating adherence to prescribed treatment regimens. These focus groups would create organic discussions around family members' understanding of the treatment regimens that have been prescribed to their relatives and their beliefs about how effective these treatments will be in addressing UMI male adults' mental disorders. Though the focus groups would help fill in these gaps, they would also provide more information about family members' perceptions of the social acceptability of formal mental health treatment and barriers to facilitating adherence among their relatives.

Just like for the focus groups with diagnosed UMI male adults discussed in the "Proposed Data Collection and Analysis Strategies for the Individual Level" section, participants for these focus groups should be recruited and enrolled through NYC Health + Hospitals facilities and FQHCs throughout the City. Family members of the diagnosed UMI male adults who participated in the previously discussed focus groups should be recruited first as they may already have a general idea about the research being conducted and, thus, may feel comfortable participating. These focus groups should also be held at NYC Health + Hospitals or FQHC facilities where families receive care as participants may already be familiar and more comfortable with these spaces. The size, duration, and timing of these focus groups should be similar to those of the previously proposed focus groups. The participants should also be adequately compensated for their time and effort and provided with a meal or snacks during the groups. The focus groups should be carried out and the data should be analyzed using the methods discussed in the "Proposed Data Collection and Analysis Strategies for the Individual Level" section.

A proposed focus group guide, informed by select constructs from Social Cognitive

Theory (SCT), is provided in Appendix F. In SCT, personal cognitive factors, the physical and social environment, and behavioral factors all interact to influence human behavior (Glanz et al., 2015). This interaction is called reciprocal determinism (Glanz et al., 2015). Some SCT constructs that have been informed the creation of this focus group guide include: knowledge (understanding of the risks and benefits of a health practice, and other necessary information to effectively perform a behavior); outcome expectations (judgements about the likely physical and social consequences of actions); normative beliefs (cultural norms and beliefs about the social acceptability of a behavior and the prevalence of that behavior); social support (perceptions of the support that one receives from one's social network); and barriers and opportunities (qualities of one's social or physical environment that facilitate or hinder a behavior) (Glanz et al., 2015).

Though the focus group guide in Appendix F is in English, the focus group guide will also be needed in Spanish. To ensure that the questions in Spanish are appropriate and elicit meaningful responses, the Spanish guide should also be back-translated. Additionally, to the extent possible, the focus group guide should be reviewed by and pre-tested with members of the target audience as well as by other stakeholders (such as health care professionals) prior to administration.

Organizational Level Behavioral Risk Factors and Personal Determinants

The next level is the organizational level, which is the second of the four environmental levels. It refers to organizations or systems that have formal decision-making processes and influence the behaviors of those in the lower levels of the socioecological model, including the behaviors of the at-risk population (Bartholomew Eldredge et al., 2016). Agents at this level may also influence the health problem directly (Bartholomew Eldredge et al., 2016). The three key agents identified at this level were health care professionals, health care organizations legally accessible to UMIs, and CBOs legally accessible to UMIs. Health care professionals have been included in this level, and not in the interpersonal level, as they are employees of health care organizations and, thus, have to abide by their rules and standards.

The five behaviors included in this level are:

1. Health care professionals do not provide a timely and accurate diagnosis to UMI male adults experiencing stress-related mental disorders, such as depression and anxiety
2. Health care professionals do not recommend state of the art treatment regimens in a

- literacy-appropriate way to UMI male adults suffering from stress-related mental disorders, such as depression and anxiety
3. Health care organizations legally accessible to UMIs (such as FQHCs and NYC Health + Hospitals facilities) do not adequately train their staff to provide literacy-appropriate care to UMIs, including UMI male adults suffering from stress-related mental disorders, such as depression and anxiety
 4. Health care organizations legally accessible to UMIs (such as FQHCs and NYC Health + Hospitals facilities) do not have adequate partnerships with legally accessible CBOs which have experience addressing social determinants of health issues that exacerbate stress and stress-related mental disorders, such as depression and anxiety, among UMIs
 5. CBOs legally accessible to UMIs (e.g. food pantries, educational services, housing assistance, etc.) do not provide the populations they serve with sufficient mental health resources (e.g. mental health screenings, mental health education, referrals to mental health providers, etc.)

Health Care Professionals

Regarding the first behavioral risk factor identified at this level, a 2001 report of the Surgeon General reported that there are disparities in mental health care in the U.S., with Latinx being less likely than White Americans to “receive care that is consistent with guidelines established by recognized psychiatric and psychological organizations” (Department of Health and Human Services, U.S. Public Health Service, 2001). While this study is close to 20 years old, this low receipt of evidence-based has been hypothesized to be due to Latinx being at a higher risk of having their mental health problems go undetected by medical providers (Hodgkin et al., 2007). According to the Surgeon General report, not only were Latinx less likely to receive a timely and accurate diagnosis, but *men* were also less likely to receive one. In fact, since then, studies have in fact found that “clinicians are less attuned to diagnosing traditionally feminine symptoms in male patients” and, thus, may be more prone to having their behavioral health problems go undetected (Smith, Mouzon & Elliott, 2018).

There are various personal determinants that may influence this behavioral risk factor. The first personal determinant identified is that health care professionals hold implicit biases

against minorities and against males when it comes to mental disorders. Research on how medical professionals' perceptions of and beliefs about patients are affected by the patient's race has shown that physicians tend to perceive minority patients more negatively than White patients. In fact, a systematic review published in 2018 aiming to synthesize the current knowledge on the role of implicit bias in healthcare disparities, found that 31 of the 37 articles reviewed "found evidence of pro-White or light-skin/anti-Black, Hispanic, American Indian or dark-skin bias among a variety of HCPs [health care providers] across multiple levels of training and disciplines" (Maina, Belton, Ginzberg, Singh & Johnson, 2018). For example, a study conducted with medical and nursing students in the Southwest, where "healthcare personnel are likely to have frequent contact with Hispanic and American Indian patients," found that these health professionals associated Hispanic and American Indian patients with "noncompliance, risky health behavior, and barriers to effectively communicating health-related information" (Bean et al., 2014). Findings like these are significant as they highlight that implicit biases are already present and entrenched early on in health care professionals' careers.

Implicit bias also plays a role in the way that *men* are seen by health care professionals. The existing literature sheds lights on the fact that throughout the world, including in the U.S., medical education and practice "feminize" depression and anxiety – meaning that depression and anxiety are taught to be almost exclusively female problems (Smith et al., 2018). As a result, physicians inadequately assess men's experiences and tend to overlook or minimize their distress (Smith et al., 2018). These implicit biases and the differential treatment resulting from these biases, "may lead to underestimates of men's mental health problems" (Smith et al., 2018). Considering that UMIs are Latinx, (typically) low SES, and male, medical professionals may have poorer perceptions of them and their behavioral disorders than other populations, thus affecting how these men are diagnosed and treated.

Similarly, health care professionals also have negative attitudes toward mental health disorders. A recent meta-analysis of changes in public attitudes towards people with mental illness in the past 20 years illustrates that attitudes have not improved significantly (Kopera et al., 2014). Even among health care professionals, negative attitudes toward individuals with mental disorders continue to exist (Wahl & Aroesty-Cohen, 2010). A study including 29 psychiatrists and psychotherapists and 28 first-year medical students found that even though both groups self-reported positive explicit attitudes toward those with mental illness, they both had

negative implicit attitudes toward the mentally ill (Kopera et al., 2014). Professionals and students were more likely to associate mental illness with negative than positive attributes in automatic association tests (Kopera et al., 2014). The fact that all participating psychiatrists and psychotherapists had at least two years of clinical experience working with mentally ill patients also highlights that long-term contact with individuals with mental disorders may not always modify negative implicit attitudes among medical professionals (Kopera et al., 2014). Negative appraisals of the abilities of individuals with certain mental disorders affect the way health care professionals handle diagnosis and care (Wahl & Aroesty-Cohen, 2010). For example, a review of empirical studies of the attitudes of psychiatric professionals toward mental disorders, including depression, found that some psychiatrists may not inform patients of their mental health diagnoses if they believed that, due to their disorder, patients would not understand the meaning of the diagnosis (Wahl & Aroesty-Cohen, 2010). This decision to not divulge the diagnosis in a timely manner can have important repercussions.

Finally, health care professionals may also not provide a timely and accurate diagnosis to UMI male adults experiencing stress-related mental disorders, such as depression and anxiety, as they do not fully understand the underlying causes of mental illness among UMI male adults. Research has shown that chronic and cumulative exposure to discrimination and marginalization, in combination with systemic economic, political, and social exclusion strongly contribute to the development of depression and anxiety among Latinx immigrants in the U.S. (Ornelas & Perreira, 2011; Potochnick & Perreira, 2010). Additionally, new research also shows that the stress associated with an undocumented legal status is an important determinant of psychosocial stress and poor mental health outcomes among Latinx immigrants (Potochnick & Perreira, 2010; Bekteshi & Kang, 2018). However, health care professionals do not always have the ability to discern how attitudes, symptoms or diseases represent the “downstream implications of a number of upstream decisions about such matters of health care and food delivery systems, zoning laws, urban and rural infrastructures” and to think of ways to intervene – an ability that has been termed “structural competence” (Metzl & Hansen, 2014). In fact, focus groups with primarily Mexican (87%), undocumented young adults have highlighted that UMI’s health care providers often lack a proper “understanding” and “sensitivity” about the undocumented immigration status and “what it means” for the patients’ livelihoods and health (Raymond-Flesch et al., 2014). Moreover, interviews with service providers, including medical professionals, who serve

Latinx immigrants reveal that providers tend to rely solely on cultural interpretations when describing the psychosocial circumstances facing immigrant youth and, in the process, reproduce stereotypes, assumptions, and biases about them (Olcoń & Gulbas, 2018). The researchers of this study noted that the providers “found themselves lacking a frame to integrate their diverse and multiple interpretations (individualized/generalized; cultural/structural), particularly in reference to the perceived underlying causes for mental health challenges” (Olcoń & Gulbas, 2018). By letting culture take precedence over structural barriers, providers limit their understanding of UMI’s mental health issues and, thus, hinder their ability to diagnose them and intervene appropriately.

The next behavioral risk factor identified at this level is that health care professionals do not provide timely, state of the art treatment regimens in a literacy-appropriate way to UMI male adults suffering from stress-related mental disorders, such as depression and anxiety. Evidence suggests that racial and ethnic minorities in the U.S. are less likely to receive needed mental health care and are more likely to receive poor-quality care when treated (McGuire & Miranda, 2008). In fact, after entering care for depression and anxiety, minority patients are less likely than Whites to receive the “best available treatments” for these conditions (McGuire & Miranda, 2008). Furthermore, a study exploring information-giving during medical encounters found that, among patients who were provided an initial or refill antidepressant prescription during the medical encounter, Latinx patients were less likely to be provided with proper information about medication purpose, dose, duration, side effects, and addiction potential (Sleath et al., 2003). This lack of information on the part of the provider may increase negative beliefs and attitudes toward medications (Cabassa, 2007).

Even if Latinx patients are provided with information, it may not always be delivered in a way that they can understand. In NYC, there is currently a highly “uneven geographic distribution of qualified providers who have the linguistic skills and cultural knowledge needed to serve the City’s diverse undocumented community” (Berlinger et al., 2015). Moreover, the NYC Mayor’s Task Force on Immigrant Health Care Access has found that limited English proficiency (LEP) patients in the City “often do not receive adequate interpretation services, with particularly significant gaps in outpatient primary care (both hospital- and clinic-based) and outpatient mental health services” and, as such, patients cannot always understand their treatment (The Mayor’s Task Force on Immigrant Health Care Access, 2015). All of this is problematic as

studies have found that LEP patients are more likely to experience serious adverse events, such as medication errors, when compared to English-proficient patients (Wu & Rawal, 2017). The root cause of the adverse events often faced by LEP patients are communication errors as “language barriers prevent effective communication between patients and healthcare providers” (Wu & Rawal, 2017). However, it is also important to keep in mind that even if patients are receiving information in their preferred language, the types of words used may still be difficult for patients to understand if the literacy level of the information given does not match the literacy level of the individual receiving that information.

A personal determinant that influences this behavior is that health care professionals hold implicit biases against males and against minorities when it comes to treating mental disorders. The beliefs and assumptions about what it means to be a man and to be masculine in this country are also common in the medical profession. Researchers have argued that the medical model has “singled out women for special professional attention” and has helped construct a culture where health care is deemed “feminine” and not “masculine” (Courtenay, 2000). In fact, studies have shown that medical professionals treat men and women differently during medical appointments: men receive less time in their health visits, men receive fewer services during these visits, men are provided with fewer and briefer explanations during medical encounters, and men receive less advice about how to change risk factors for disease (Courtenay, 2000). This differential treatment on the part of medical professionals reveals implicit biases about the care and attention that men, and their disorders, require. Additionally, even though many psychological and counseling interventions tailored to men with mental disorders have been recommended in the past 20 years, very few interventions are designed to address the behavioral factors and risks that can make men susceptible to mental health issues in the first place, which also points to implicit biases about the type of treatment that they may need (Courtenay, 2000).

Professionals may also hold implicit biases against minorities when it comes to actually treating their mental disorders. A study published in 2019 utilized Medicaid claims data from 2008 through 2011 to assess racial and ethnic differences in the receipt of adequate depression care among Medicaid-enrolled youth diagnosed with major depression (Cummings, Ji, Lally & Druss, 2019). This study found that Black and Latinx patients had a significantly lower likelihood “of receiving minimally adequate psychotherapy and/or minimally adequate pharmacotherapy” (Cummings et al., 2019). Additionally, the percentage of Black and Latinx

patients who received no treatment was significantly larger than the percentage of non-Latinx White patients who received no treatment (Cummings et al., 2019). “Minimally adequate treatment” was determined by the American Academy of Child and Adolescent Psychiatry’s (AACAP) guidelines (Cummings et al., 2019). Older studies with adult Medicaid recipients have also found that minorities were less likely to receive a prescription for psychotropic medication than Whites, and were also less likely to receive *newer* antipsychotic medications (that had fewer side effects) and more likely to receive incorrect doses of these medications (Snowden, 2003). Researchers have pointed to providers’ “biases about the mental health status of or treatment expectations for ethnic minority clients” and beliefs that “clients from certain backgrounds are unreceptive to treatment, hostile, naive, superstitious, or otherwise unpromising” as likely explanations for disparities in treatment (Snowden, 2003). In the current political climate, the opinion that undocumented immigrants are “less deserving” of publicly-provided medical services and treatments is also not uncommon. In fact, interviews conducted with primary care providers working in San Francisco’s public safety net system have shed light on the fact that even some health care professionals in highly liberal settings view legal citizens as more deserving of medical resources than “illegal” individuals, especially in tightening fiscal climates (Marrow, 2012). These biases against the undocumented can affect the medical treatments that they receive.

The second personal determinant that influences this behavioral risk factor is that health care professionals are not aware of coverage options and treatments that are legally and financially accessible to UMIs. A report by the New York Immigration Coalition and the Hastings Center describes that health care professionals, including those at NYC Health + Hospitals facilities and FQHCs, sometimes have “insufficient or inaccurate knowledge about care and coverage options for the undocumented uninsured” and, as a result, patients may experience delays in treatment for their medical conditions (Berlinger et al., 2015). Additionally, a report by the NYS Health Foundation has also explained that, due to the disconnect between federal and New York State rules regarding the types of health care benefits accessible to DACA recipients (a large part of whom have significant mental health concerns), a sizable portion of the DACA population in New York missed out on insurance coverage (NYS Health Foundation, 2018). As a result, DACA recipients were unable to receive necessary treatments since the professionals that serve them were unaware of the benefits that New York State had granted

DACA recipients (NYS Health Foundation, 2018). These findings are mirrored in the data from focus groups with undocumented, Mexican young adults. In these focus groups, respondents explained that their medical providers sometimes offer services and treatments that “don’t work for you because you’re not eligible for them” and, as such, they have missed out on opportunities to receive timely, evidence-based treatments (Raymond-Flesch et al., 2014).

Health care professionals may also not provide timely, state of the art treatments in a literacy-appropriate way to UMI male adults suffering from stress-related mental disorders because they perceive barriers to engaging in health literacy-appropriate practices. A recent study with four FQHCs and one Federally-funded Community Health Center (CHC) in geographically diverse areas throughout the U.S. sought to understand the challenges and barriers to providing care that met the communication needs of low-literacy patients (Barrett, 2013). Based on interviews with health care providers, the researchers found that providers’ self-described biggest challenges in addressing the health care needs of individuals with low health literacy are: 1) not knowing how to explain a disease diagnosis in lay terms and how to verify that patients understand what is being communicated to them, and 2) not knowing how to ensure that patients know what medications they should take, why they are taking them, and how they should be taken (Barrett, 2013). In addition, unlike front desk and triage staff, many of the physicians reported being unsure of *how* to translate health literacy into their daily interactions with patients (Barrett, 2013). These are all barriers related to knowledge and skills. Moreover, this same study found that health care professionals also believe that they lack the resources and the time to practice health literacy during their encounters with patients. In fact, according to the participating clinicians, some of the biggest barriers they face in practicing health literacy are “lack of time and resources” (Barrett, 2013). Clinicians explained that the 11-minute time constraint for the average patient encounter is limiting and that, due to this time constraint, they were unable to properly educate patients with low literacy issues (Barrett, 2013). Additionally, the physicians expressed needing and wanting tangible tools and strategies that they could easily incorporate into their appointments with low-literacy patients, thus highlighting their perceived lack of resources currently available to help them (Barrett, 2013).

Health Care Organizations

The third behavioral risk factor identified at this level pertains to health care

organizations – the organizations in which healthcare professionals practice. The behavioral factor identified is that health care organizations legally accessible to UMIs (such as FQHCs and NYC Health + Hospitals facilities) do not adequately train their staff to provide literacy-appropriate care to their patients, including UMI male adults suffering from stress-related mental disorders, such as depression and anxiety. In September 2019, Matilde Roman – the Chief Diversity and Inclusion Officer for NYC Health + Hospitals – testified at the New York City Council Oversight Hearing on the “The Delivery of Culturally Competent & Equitable Health Care Services in New York City Hospitals” and her testimony was published on NYC Health + Hospital’s website (Roman, 2019). Though she stated that part of NYC Health + Hospitals’ mission is to provide “accessible, culturally, *linguistically* appropriate services” and discussed initiatives that have been implemented to ensure these types of services are provided, the terms “health literacy” or “literacy” were not mentioned at all during her testimony (Roman, 2019). This is especially surprising since health literacy is a big part of the provision of linguistically appropriate care. When talking about linguistically appropriate services, the testimony merely emphasized NYC Health + Hospitals’ ability to offer “free language services 24 hours a day, 7 days a week, 365 days a year in over 200 languages and dialects” (Roman, 2019). Though this is certainly something to celebrate, having interpretation services does not necessarily mean that patients are receiving information and materials that match their literacy level (even if the information is in their preferred language) from healthcare professionals. Moreover, though Ms. Roman stressed that a lot of work is being done to ensure that employees have “year-round” trainings on how to provide “competent” care, the trainings discussed focused solely on cultural competency, implicit bias, and interreligious awareness (Roman, 2019). There was no mention of trainings designed to ensure that healthcare professionals are able to communicate with patients in *lay terms* and that they are able to use communication strategies that make medical information easier to understand.

There are a couple of personal determinants that may influence this behavioral risk factor. The first personal determinant identified is that administrators at these health care organizations perceive they personally lack the skills and knowledge necessary to provide their staff with appropriate health literacy training. In the aforementioned study focusing on the challenges faced by FQHCs and Community Health Centers (CHCs) when addressing the communication needs of low-literacy patients, researchers found that though many administrators had had an “Aha

Moment” in which they realized the need for and importance of initiating health literacy practices and activities, most of them were still “unsure of how or where to begin, including how to train staff” (Barrett, 2013). During interviews, administrators expressed uncertainty about “which training was the best or which tools or practices could most efficiently bring desired results” and expressed a desire for evidence-based practices and tools to use with their staff (Barrett, 2013). Though research supports this personal determinant, this is still an area for future primary data collection. A questionnaire distributed to administrators of NYC Health + Hospitals facilities and of FQHCs could help us get a better sense of administrators’ skills and knowledge regarding health literacy and how this influences their ability to train their staff to appropriately communicate with low-literacy patients. Specific data collection methods for this survey will be discussed following this section.

Another personal determinant for this behavioral risk factor is that administrators do not believe they have big enough budgets to provide their staff with appropriate health literacy training. Research conducted with administrators of public safety net facilities in the U.S. has found that health literacy training is sometimes tied to available budgets (Barrett, 2013). As such, if administrators do not perceive there to be sufficient funds, health literacy trainings might be reduced or eliminated entirely (Barrett, 2013). In fact, this research found that health literacy training is “often the first activity to be eliminated due to budgetary cuts regardless of its perceived importance” by administrators (Barrett, 2013). Furthermore, a paper highlighting the experiences of three healthcare organizations that have explicitly made health literacy an organizational priority sheds light on the fact that even organizations who are great champions of health literacy face limitations on what they can get done due to “competing priorities” (Brach, 2017). These limitations include limited “funding to develop training and tools” related to health literacy (Brach, 2017). Though the literature supports this personal determinant, more research is needed about how this plays out in NYC specifically. As such, this is an area for future primary data collection. The previously proposed questionnaire for administrators of NYC Health + Hospitals facilities and FQHCs could also include some questions about this topic to enhance our understanding of how funds and other barriers impact administrators’ ability to implement effective and sustainable health literacy trainings for their staff. Specific data collection methods for this questionnaire will be discussed following this section.

The next behavioral risk factor identified is that health care organizations legally

accessible to UMIs (such as FQHCs and NYC Health + Hospitals facilities) do not have adequate partnerships with legally accessible CBOs that can address social determinants of health issues that exacerbate stress and stress-related mental disorders, such as depression and anxiety, among UMIs. In April 2014, NYS and the Centers for Medicare and Medicaid Services (CMS) reached an agreement to reform the Medicaid delivery and payment system (New York State Department of Health Medicaid Redesign Team, 2018). They agreed to do so primarily through a Medicaid Roadmap to Value Based Payment initiative and a Delivery System Reform Incentive Payment (DSRIP) program – a program aiming “to reduce avoidable hospital use by 25 percent over five years [2015-2020], while financially stabilizing the State’s safety net” by promoting greater integration and collaboration between health care systems and CBOs (New York State Department of Health Medicaid Redesign Team, 2018). One mechanism by which DSRIP promotes greater integration and collaboration is through the *requirement* that participating health care organizations/systems actively engage CBOs in addressing specific social determinants of health relevant to the communities they serve (New York State Department of Health Medicaid Redesign Team, 2018). The recent implementation of this program highlights the current lack of widespread clinical-community partnerships.

Currently, NYS is still piloting and evaluating aspects of the DSRIP program. As such, recommendations and guidelines for how health care systems and CBOs should work together are slowly beginning to appear. Under DSRIP, NYC Health + Hospitals created OneCity Health – a Performing Provider System (PPS) that is working to implement the DSRIP program and bridge the gap between health care providers, CBOs, and health systems in NYC (Partnerships to Transform Care and Improve Health, n.d.). Though the creation of OneCity Health and the various OneCity Health projects that have been implemented are certainly great progress, not enough time has passed for NYC Health + Hospitals to have a fully consolidated and integrated system that routinely addresses social determinants of health and connects patients to the social services they need. As of 2017, the Commission on Healthcare for Our Neighborhoods – convened by NYC’s First Deputy Mayor and the Deputy Mayor for Health and Human Services – maintained the position that NYC Health + Hospitals needs to “foster new partnerships with community-based organizations and City agencies” so it can effectively address “the social determinants of health on the individual level and at the community level” (Berwick et al., 2017).

The first personal determinant that influences this behavior is that health care professionals believe their time will be better spent if they focus solely on their patients' medical needs and not on their social needs. A recent qualitative study explored the perspectives of Veteran Administration health providers regarding screening for housing instability and their role in addressing their patients' housing status (Chhabra et al., 2019). The interviews with providers revealed that, even though administering a housing screening tool broadened most providers' understanding of housing instability and "alerted them to less obvious or visible cases of housing instability," there were mixed opinions on whether "it was the role of providers to directly administer the screening" (Chhabra et al., 2019). Providers felt that, as medical professionals, they should focus solely on managing medical problems (Chhabra et al., 2019). Illustrative quotes include "my time probably could be spent doing other things that I am more trained to do. There is nothing special about my medical training that allows me to help them with their homelessness necessarily" and "if somebody answers 'yes' to that question, it's like suicidality. If you're really going to take this seriously as opposed to just checking off a box...that could hijack the whole visit" (Chhabra et al., 2019). As seen from these quotes, providers would rather focus purely on the "medical aspects of care," especially as they already face time constraints during patient visits. Though providers did not necessarily want to be personally involved in addressing social needs, it is important to note that they did think that *someone* in their healthcare organization should be in charge of doing so (Chhabra et al., 2019).

The second personal determinant that influences this behavioral risk factor is that staff at health care organizations lack knowledge of CBOs in the community that may be able to address UMI's social needs. A 2018 New York Academy of Medicine (NYAM) study conducted various focus groups with NYC-based hospitals and Performing Provider Systems (PPSs) implementing DSRIP, as well as with CBOs that primarily provide social services (Griffin, Nelson, Realmuto & Weiss, 2018). In the focus groups, CBO staff voiced the opinion that hospital staff often "didn't know what was going on in the community. Everything stopped at the hospital door when they discharged somebody" (Griffin, Nelson, Realmuto & Weiss, 2018). Information shared by hospital and PPS staff supports this perception, In fact, according to the NYAM report, analysis from the hospital and PPS focus groups revealed that though health care staff could identify particular community needs, they "lacked basic information about CBOs in their local communities and their relevant services" (Griffin et al., 2018). This lack of knowledge may be

seen at the national level, as well. A recent Robert Wood Johnson survey found that 85% of the primary care providers and pediatricians that were polled agreed with the statement that “unmet social needs are leading directly to worse health for all Americans” but at the same time agreed that they do not “feel confident in their capacity to meet their patients’ social needs” (Metzl & Hansen, 2014). This lack of knowledge about what to do in order to address patients’ social needs can greatly impede health care organizations from providing effective care and treatment (Metzl & Hansen, 2014). However, more data on this personal determinant as it pertains to NYC Health + Hospitals facilities and FQHCs in particular would be beneficial. The previously proposed questionnaire for administrators of NYC Health + Hospitals facilities and FQHCs would be an appropriate data collection tool. Specific data collection methods for this questionnaire will be discussed following this section.

Apart from this lack of knowledge, health care organizations also do not expect that they will benefit financially from partnering with CBOs to address their patients’ social needs. NYC Health + Hospitals currently operates with a structural budget deficit in order to offer services to patients who lack health insurance and, as such, these facilities do not have funds to spare on what they perceive to be “unnecessary” (Berlinger et al., 2015). Other safety net facilities, including FQHCs, also have limited financial resources and find themselves having to make tough choices (Marrow, 2012). Interviews conducted with Performing Provider Systems (PPS) staff in NYC illustrate that staff are concerned about developing and formalizing partnerships with CBOs under DSRIP because this will force health care organizations to allocate funding at levels that are “unrealistic” (Griffin et al., 2018). Since even the NYS Department of Health knows that health care organizations do not believe they will “see savings” by collaborating with CBOs and addressing social determinants of health, it plans to financially reward organizations that create successful partnerships (New York State Department of Health Medicaid Redesign Team, 2018). Though, as described, the literature does support this personal determinant, more primary data focused on NYC Health + Hospitals facilities and FQHCs would deepen our understanding of these topics. The same questionnaire discussed above could be an appropriate data collection tool. Specific data collection methods will be discussed following this section.

CBOs

The fifth and last behavioral risk factor identified at the organizational level is that

CBOs legally accessible to UMIs do not provide the populations they serve with adequate and sufficient mental health resources and supports, such as mental health screenings, mental health education, and referrals to mental health providers. Considering that socially and economically disadvantaged populations (such as refugees and undocumented immigrants) may often frequent CBOs to receive social assistance, researchers claim that there is a “compelling rationale for leveraging the potential of CBOs to promote mental health for immigrant families” (Rusch, Frazier & Atkins, 2014). However, CBOs often do not provide their clients with sufficient mental health supports and resources (Simmelink & Shannon, 2012). Based on a survey administered to 31 staff members at 27 CBOs in a Midwestern state, the investigators found that, though 93.5% of respondents see refugees with mental health issues, only 48.4% of respondents actually assess these refugees for mental health symptoms either through informal conversation or using a standardized questionnaire (Simmelink & Shannon, 2012). The same problem exists in NYC. As a result, an initiative called Connections to Care, or C2C, was launched in 2015 (Connections to Care: Increasing Mental Health Services for New Yorkers, n.d.). C2C is one of the 54 initiatives of ThriveNYC (a larger initiative that will be discussed at the policy level) and has, as its main goal, the integration of “mental health support into the work of community-based organizations (CBOs) that serve low-income New Yorkers and populations at-risk of having unmet mental health needs” (Connections to Care: Increasing Mental Health Services for New Yorkers, n.d.). To ensure that NYC CBOs provide mental health resources to their vulnerable clients, C2C provides CBOs with “training, ongoing coaching, and support from an MHP [mental health provider] to implement four core C2C mental health services...: mental health screening, mental health first aid, motivational interviewing, and psychoeducation” (Dunbar, Towe, Ayer & Martineu, 2017).

A personal determinant that influences this behavioral risk factor is that CBO staff believe they lack the knowledge and skills needed to provide mental health support and resources to the populations they serve. In the above-mentioned study examining the mental health skills of refugee-serving CBOs in a Midwestern state, the researchers found that when respondents were asked to rate “how knowledgeable their staff is in understanding and serving the needs of war trauma and/or torture survivors” on a Likert scale from 0 (Not at all knowledgeable) to 3 (Extremely knowledgeable), only 44% of respondents rated their staff as being “knowledgeable or extremely knowledgeable” (Simmelink & Shannon, 2012). This perceived lack of knowledge

and skills about serving the mental health needs of clients is also seen in NYC-based CBOs. Currently, the RAND Corporation is evaluating the results of the aforementioned C2C initiative and, as such, it has conducted interviews with CBO leadership to learn about the CBOs' experiences implementing C2C (Dunbar, Towe, Ayer & Martineu, 2017). Across 35 interviews with 15 CBOs most respondents raised concerns regarding their staffs' confidence and ability to deliver mental health services (e.g. screenings, mental health first aid, motivational interviewing, and psychoeducation) to clients experiencing a mental health issue (Dunbar, Towe, Ayer & Martineu, 2017). According to one CBO leader, when the CBO first started to offer mental health supports to clients under C2C "it was a little scary [for staff]... some would say 'we're not a mental health organization'" (Dunbar, Towe, Ayer & Martineu, 2017). This quote highlights the worry that the CBOs and their staff members do not have the skills and knowledge to provide mental health supports and resources to the populations they serve (Dunbar, Towe, Ayer & Martineu, 2017).

Another personal determinant that influences CBOs' inability to provide the populations they serve with sufficient mental health supports is that CBO staff perceive that they do not have enough resources (i.e. staff and money) to do so. A study conducted with 40 organizational leaders representing 34 immigrant-serving nonprofit organizations in the Washington D.C. metropolitan area found that many CBOs reported having limited budgets and limited staff capacity (de Leon, Maronick, De Vita & Boris, 2009). During interviews, respondents said that they could not afford to hire additional staff and, thus, relied on volunteers to "provide key services such as language curricula and citizenship classes" (de Leon, Maronick, De Vita & Boris, 2009). If organizations do not believe they have enough staff members to provide the *key* services that immigrants come looking for, one can see how providing mental health supports that individuals *do not* come looking for may not be a priority. In addition, even in organizations that do have a large number of volunteers, volunteers may "not have the training or background to perform certain specialized services" and, as such, the CBOs are "unable to fill critical positions with volunteers" (de Leon, Maronick, De Vita & Boris, 2009). Considering that providing effective and adequate mental health support requires a certain degree of training and expertise, it is clear why these positions may not be easily filled. Moreover, even if organizations do have staff and funding, the money that they can direct to undocumented immigrants may be limited. In fact, one of the main issues identified by the CBOs in the study was that most funding

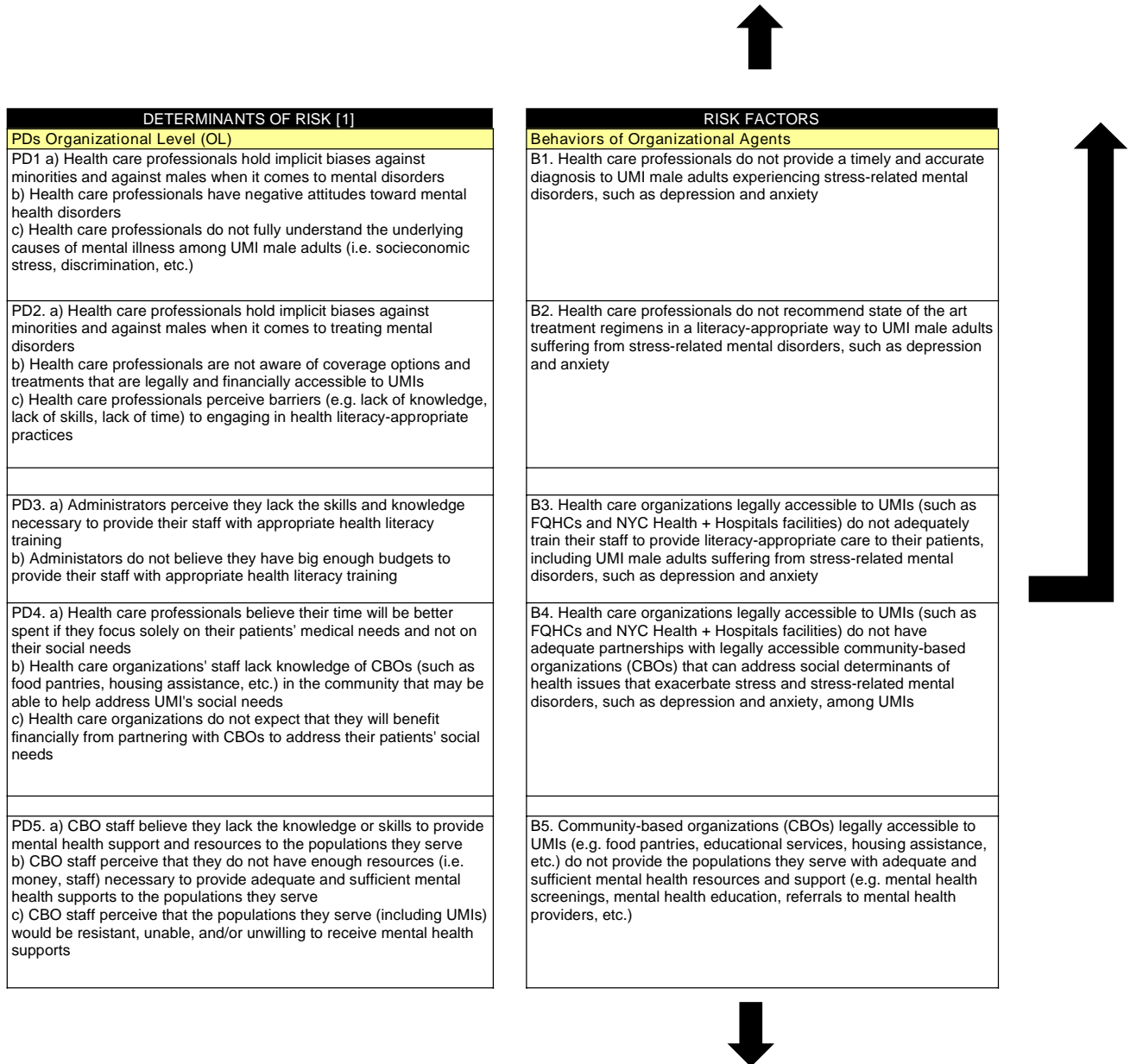
sources that immigrant-serving CBOs rely on (i.e. government grants and private contributions) “stipulate that grant dollars be made available to those who can provide adequate documentation” (de Leon, Maronick, De Vita & Boris, 2009). Due to these limited resources, CBOs have to struggle to meet the complex needs of those who are undocumented.

The last personal determinant linked to CBOs’ inadequate and insufficient provision of mental health resources and supports is that CBO staff perceive that the populations they serve (including UMIs) would be resistant, unable, and/or unwilling to receive mental health supports. The previously discussed interviews conducted with CBOs as part of RAND’s evaluation of the NYC C2C initiative have highlighted that CBO staff perceive barriers to engaging clients in C2C activities (Dunbar, Towe, Ayer & Martineu, 2017). According to staff members across 15 sites, CBO clients decline mental health screenings due to concerns about “confidentiality and privacy” (Dunbar, Towe, Ayer & Martineu, 2017). Additionally, staff members have also expressed concerns that clients are not using the mental health services that C2C has referred them to due to “resistance around going for treatment” and “stigma” (Dunbar, Towe, Ayer & Martineu, 2017). Additionally, many interviewees also brought up “logistical barriers” that clients may face to completing mental health referrals (Dunbar, Towe, Ayer & Martineu, 2017). According to staff, barriers that clients may face include travel to services, lack of insurance, and child care needs (Dunbar, Towe, Ayer & Martineu, 2017). In discussing these barriers, respondents mentioned that the undocumented and uninsured may disproportionately face these obstacles and, as such, CBOs may have to work harder and spend more money to support these populations (Dunbar, Towe, Ayer & Martineu, 2017).

Though, as seen above, the literature supports the behavioral risk factor and the three personal determinants pertaining to CBOs, it is important that more primary data be collected from immigrant-serving CBOs in NYC in particular. A questionnaire distributed to staff at these CBOs would allow us to better understand how (if at all) CBOs address mental health needs among the populations they serve, as well as the beliefs, attitudes, values, and perceptions that influence CBOs’ provision of mental health resources and supports. Specific data collection methods for this questionnaire will be discussed following this section. Proposed data collection methods to obtain information from administrators of NYC Health + Hospitals facilities and of FQHCs will also be discussed.

Below is the completed LOR for the organizational level. All behavioral risk factors and

personal determinants discussed above are included in this LOR. Again, arrows have been included to indicate how the behavioral risk factors at the organizational level influence the behavioral risk factors at the lower levels well as the behavioral risk factors at the higher levels. In addition, the arrow on the right side of the LOR indicates how the organizational behavioral risk factors can contribute to and influence the health problem directly.



Proposed Data Collection and Analysis Methods for the Organizational Level

Preliminary Questionnaire for NYC Health and Hospitals and FQHC Staff

To fill in the gaps identified at the organizational level, a brief questionnaire should be distributed to administrators and other high-level staff involved in decision-making processes at NYC Health + Hospitals facilities and FQHCs across NYC. NYC Health + Hospitals facilities and FQHCs located in areas of the City with large populations of immigrants and Mexicans should be targeted first to ensure that the findings are most relevant to this needs assessment proposal. This questionnaire could provide insight into why these organizations may not adequately train their staff to provide literacy-appropriate care to UMIs, as well as why these organizations may not develop adequate partnerships with CBOs that can address the social determinants of health affecting UMIs. These two topics should be broached in the same questionnaire as they both relate to the organizations' "structural competence" – their ability to recognize how structural factors shape patients' health and to think of ways to intervene (Metzl & Hansen, 2014).

The questionnaire should ask questions that deal with whether administrators believe they have the necessary knowledge and skills to provide their staff with appropriate health literacy training, and whether they see funding as a barrier to providing their staff with this type of training. Aside from knowledge, skills, and funding, the questionnaire should also ask questions that can help us see what other barriers and factors are linked to health care organizations not training their staff to provide literacy-appropriate care to UMIs. The other section of the questionnaire should ask questions that can provide insight into whether healthcare organizations believe they should play a role in addressing patients' social needs, whether staff know of CBOs in the community that may be able to help address UMI's social needs, and what healthcare organizations expect will happen if they partner with CBOs to address social needs. Though the responses to the questionnaire can help fill gaps identified in the literature, it can also further our understanding of other personal determinants that may not have been identified in this proposal.

To identify the administrators and staff that should complete the questionnaire, researchers should work closely with the leaders of the selected NYC Health + Hospitals facilities and FQHCs. If allowed by the organizations, participants should be adequately compensated for their time and effort. The questionnaire should be self-administered preferably via a computer or tablet, and the data from these questionnaires should be analyzed using similar methods to those discussed in the "Proposed Data Collection and Analysis Strategies for the Interpersonal Level" section.

A preliminary questionnaire, informed by select constructs from the previously discussed Social Cognitive Theory (SCT), is provided in Appendix G. Though the questionnaire in Appendix G is only in English, the questionnaire will also be needed in Spanish. As such, the proposed questionnaire should be translated into Spanish and back-translated into English to ensure that the questions make sense and elicit meaningful responses. Additionally, to the extent possible, the questionnaire should be reviewed by and pre-tested with members of the target audience as well as by other stakeholders (such as NYC Health + Hospital staff) prior to administration.

Preliminary Questionnaire for Immigrant-Serving CBO Staff

A questionnaire should also be administered to staff at CBOs in NYC that serve Latinx immigrant populations, including undocumented individuals. This questionnaire could provide insight into reasons why these CBOs may not provide the populations they serve with adequate and sufficient mental health resources and supports. Specifically, information gathered from the questionnaire could allow researchers to better understand staff's knowledge, skills, values, and perceptions as related to mental health and the provision of mental health supports. Though the responses to the questionnaire could help fill gaps identified in the literature, they could also further our understanding of other personal determinants that may be at play that were *not* identified in the literature.

In terms of participants, the questionnaire should be completed by low-level, mid-level, and high-level staff at CBOs in NYC that serve Latinx immigrants. Examples of these CBOs have been included in the "Proposed Data Collection and Analysis Strategies for the Individual Level" section. Some of these CBOs would have already worked with the researchers to recruit and enroll participants in the previously-mentioned focus groups and questionnaires and, as such, relationships and trust would already exist. These questionnaires should be conducted and the data should be analyzed using the methods that have been discussed in the "Proposed Data Collection and Analysis Strategies for the Interpersonal Level" section. If allowed by the organizations, participants should also be adequately compensated for their time and effort.

A preliminary questionnaire, informed by select constructs from the previously discussed Social Cognitive Theory (SCT), is provided in Appendix H. Though the questionnaire in Appendix G is only in English, the questionnaire will also be needed in Spanish. As such, the

proposed questionnaire should be translated into Spanish and back-translated into English to ensure that the questions make sense and elicit meaningful responses. Additionally, to the extent possible, the questionnaire should be reviewed by and pre-tested with members of the target audience as well as by other stakeholders (such as immigrant-serving CBO staff) prior to administration.

Community Level Behavioral Risk Factors and Personal Determinants

The next level is the community level. This level refers to groups of people bound together by similar characteristics, values, beliefs, habits, agendas, and/or experiences (Bartholomew Eldredge et al., 2016). As such, communities do not only encompass groups that share geographical boundaries (Bartholomew Eldredge et al., 2016). The two key agents identified at this level were UMI community norms and Mexican community norms.

The two behaviors included in this level are:

1. Undocumented communities' norms do not promote the use of government services and programs (e.g. hospitals, U.S. welfare programs), even those that are legally accessible to UIs
2. Mexican communities' norms do not encourage open and honest discussions about mental health issues affecting men

Undocumented Communities

Regarding the first behavioral risk factor, in 2016, the Bipartisan Policy Center (BPC) published a literature review stating that “most research into immigrants’ benefits usage finds that individual immigrants use public benefits at lower rates and at lower levels than native-born Americans” (O’Shea & Ramón, 2016). In addition, a 2018 Urban Institute survey with nonelderly adults who were foreign born or lived with one or more foreign-born family members found that respondents often avoided routine activities because they did not “want to be asked or bothered about citizenship status” (Bernstein et al., 2019b). These routine activities included visiting a doctor or clinic using public transportation (Bernstein et al., 2019b).

Specifically, the survey found that while 5.6% of adults who lived in households where all foreign-born family members were permanent residents or naturalized citizens reported that they or someone in their family avoid seeing a doctor or going to a clinic because they did not want to be asked or bothered about citizenship status, 7.8% of adults who live in households

where one or more foreign-born family members were *not* permanent residents or naturalized citizens did (Bernstein et al., 2019b). Additionally, while 4.7% of adults who live in households where all foreign-born family members were permanent residents or naturalized citizens reported that they or someone in their family avoided using public transportation because they did not want to be asked or bothered about citizenship status, but 10.1% of adults who lived in households where one or more foreign-born family members were *not* permanent residents or naturalized citizens did (Bernstein et al., 2019b). This survey also found that Latinx adults were nearly three times more likely (24.2%) than non-Latinx White adults (8.5%) to report avoiding some routine activities (Bernstein et al., 2019b). Overall, these findings are highly relevant to this behavioral risk factor as they highlight that among Latinx communities with more vulnerable immigration statuses (e.g. undocumented communities) it is more common to avoid the use of government services and programs, including health care services, than it is among other immigrant communities. The data on avoidance of public transportation is also of particular relevance to this needs assessment proposal since the primary mode of transportation in NYC is public transportation and, as such, one can infer that most people use public transit to access necessary health care services.

There are a few personal determinants that influence these undocumented communities' norms. The first personal determinant is that undocumented communities are not aware and do not have a clear understanding of which government services and programs, including health care and health-related services, are legally accessible to them. A 2019 study by Urban Institute – a study conducted *before* the passing of the expanded public charge rule – indicated that there was “great uncertainty and confusion” among immigrant communities regarding the proposed expansion of the public charge rule (Bernstein et al., 2019a). Interviews conducted with immigrants of varying immigration statuses revealed that people did not understand what public programs would be considered under the rule and who the rule would apply to (Bernstein et al., 2019a). In addition, interviews also revealed that immigrant respondents had been encouraged and “told to avoid public programs because of the uncertainty around the rule” by their networks (Bernstein et al., 2019a). As a result of this confusion and misunderstanding, there was a huge drop in enrollment from public programs (even programs not covered by the public charge rule) in immigrant communities (Bernstein et al., 2019a). More generally, heads of community-based organizations in NYC have also indicated that immigrant communities in the City often do not

know which services and programs are accessible to them. Mario Russell, the Director of Immigrant Refugee Services for Catholic Charities in the Archdiocese of New York, has recently said that, in response to this lack of knowledge and understanding, organizations such as his hold sessions for undocumented immigrants once a week to help them find services that are accessible to them (Castaneda, 2016).

Undocumented communities may also perceive government services and programs to be untrustworthy and, as such, community norms do not promote the use of these services. Research on Latinx immigrants of Mexican descent has found that as these individuals become more aware of the widespread racism and discrimination in the U.S., they become more cynical and distrusting of the government (Michelson, 2003). The literature also points to the fact that the expansion of anti-immigrant practices and rhetoric deters undocumented and documented immigrants from using public services because they are afraid to share personal information that would allow the government and, thus, the immigration authorities to find them (Cruz Nichols, LeBrón & Pedraza, 2018). In fact, a 2018 study found that “immigration enforcement is significantly associated with distrust in health-related information from the government, but only among Latinos” (Cruz Nichols, LeBrón & Pedraza, 2018). The authors of this study argue that “a major consequence of expanding immigrant policing is its trickle-down effect on how individuals view public institutions charged with the provision of public goods” (Cruz Nichols, LeBrón & Pedraza, 2018). Keeping this in mind, it is then not hard to envision how Trump’s increased calls for more deportations and for the elimination of sanctuary cities’ protections for undocumented immigrants – as recently heard during his February 4th State of the Union address, for example – will create further distrust of governmental services among immigrant communities even in places like NYC. This increased distrust will result in immigrant communities being less likely to encourage the use of public programs among its members, thus leading to lower utilization rates as have already been seen in light of the public charge rule (Bernstein et al., 2019a).

Mexican Communities

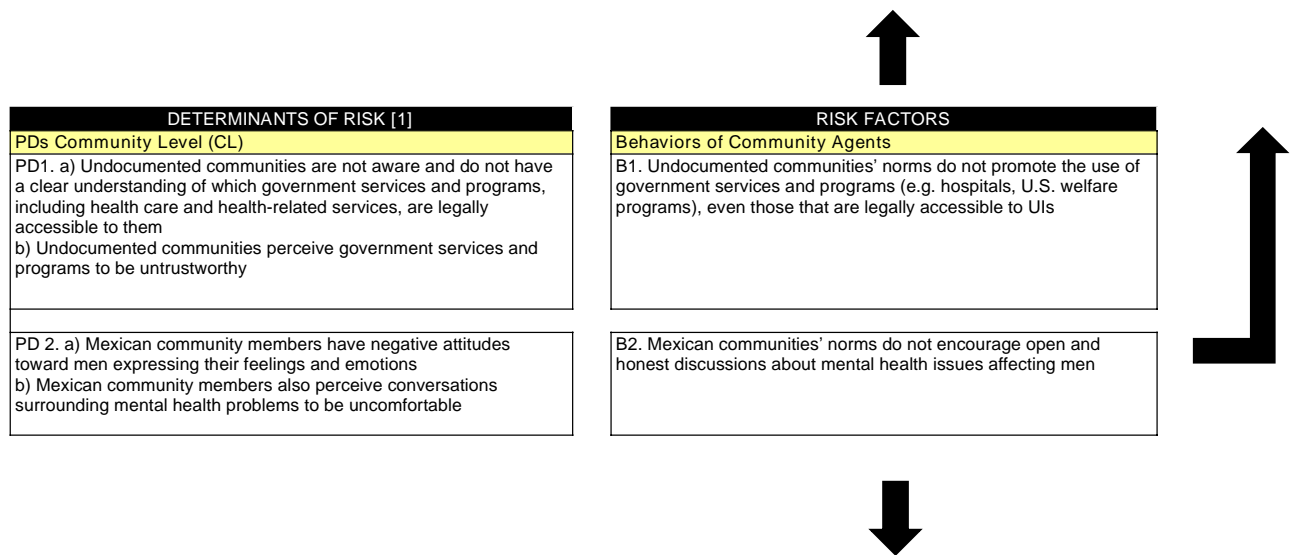
The next behavioral risk factor is that Mexican communities’ norms do not encourage open and honest discussions about the mental health issues affecting men. One of the factors that impacts this behavior is that Mexican community members have negative attitudes toward men

expressing their feelings and emotions. Though norms are certainly changing, it is still the case that in many areas of the world, including Latin America, individuals are socialized in a way that reinforces rigid gender role stereotypes (Fragoso & Kashubeck, 2000). In Latinx culture, including Mexican culture, men have been socialized to be strong, to be an authority, and to be a provider (Fragoso & Kashubeck, 2000). These ideas about what being a *macho* means have helped create a culture where people do not openly talk about men's weaknesses, vulnerabilities or challenges as these conversations would undermine their masculine identity and social status (Courtenay, 2000). In fact, more recent research has shed light on the fact that, in Latinx communities, expressing feelings and emotions are often seen as a "sign of femininity" and "vulnerability" and, thus, not something that men should do or should be encouraged to do (Sáens, Bukoski, Lu & Rodriguez, 2013). Additionally, research focused on Latinx men, including Mexican men, has illustrated that men may be reticent to talk openly about their feelings and emotions and to seek help for emotional and mental problems due to worry and fear that their communities will not approve and will see them differently because of it (Shattell et al., 2008). As can be seen, Mexican community members' negative attitudes toward men expressing their feelings and emotions have influenced and may be continuing to influence the community's promotion of open and honest discussions about mental health issues affecting men.

Aside from having negative attitudes toward men's expression of feelings and emotions, Mexican community members also perceive conversations surrounding mental health problems to be uncomfortable. This lack of comfort can be seen through the way in which mental distress and mental health issues are discussed by community members. According to the literature, it is common for Latinx populations, including Mexicans, to somatize their mental health problems (Apesoa-Varano et al., 2015; Escobar, Hoyos Nervi & Gara, 2000). Somatization refers to providing a physical presentation and description of psychological symptoms (Apesoa-Varano et al., 2015). Though sometimes the vocabulary and idioms that people use to describe their depression, for example, do match DSM depression criteria, other times they do not (Apesoa-Varano et al., 2015). As such, researchers hypothesize that somatization may be a factor that leads to the misdiagnosis or under-diagnosis of depression in certain populations (Apesoa-Varano et al., 2015). Qualitative and quantitative research exploring the idioms of distress that are used by White, non-Mexican men and by Mexican-origin men found that Mexican men were more likely to use "general malaise" (which is not part of established depression criteria) to

describe their depression and distress than were the White, non-Mexican men (Apesoa-Varano et al., 2015). General malaise terms used by Mexican men to explain their distress included: “I felt sort of sick,” “I felt bad,” and I had “pains here and there” (Apesoa-Varano et al., 2015). This lack of explicit mention of mental health and mental health issues may reflect cultural discomfort discussing these issues. In fact, researchers explain that stigma surrounding mental illness among certain groups can result in patients using somatic symptoms as a way to normalize their experiences and attribute non-psychological causes to them (Tylee & Gandhi, 2005). Overall, the perception that conversations surrounding mental health problems are uncomfortable and the use of non-specific, general terms to refer to emotional distress make it harder for Mexican communities to have open and honest discussions about mental health issues affecting men.

Below is the completed LOR for the community level. All behavioral risk factors and personal determinants discussed above are included in this LOR. The arrows indicate how the behavioral risk factors at the community level influence the behavioral risk factors at the lower levels as well as the behavioral risk factors at the higher levels. In addition, the arrow on the right side of the LOR indicates how the community behavioral risk factors can contribute to and influence the health problem directly.



Proposed Data Collection and Analysis Methods for the Community Level

Since the literature supports the community-level behavioral risk factors and their personal determinants, no primary data collection methods will be proposed at this level. However, it is important to note that questions regarding how Mexican communities talk about

depression (including as it relates to men) would be part of the focus groups that have been proposed at the individual and interpersonal levels. As such, data gathered from those focus groups could also inform the behaviors and personal determinants at the community level.

Policy/Societal Level Behavioral Risk Factors and Personal Determinants

The next, and last, environmental level is the policy/societal level. This level focuses on the systems that possess “the means to control several aspects of the lives and development of their constituent systems” (Bartholomew Eldredge et al., 2016). The key agents identified at this level were: the City of New York, the NYC Department of Health and Mental Hygiene (DOHMH), and the NYS government. Though the federal government and its policies certainly affect the livelihood of UIs, this agent has not been formally included in this needs assessment proposal since it is unlikely that, under Trump, federal policies that benefit UIs will actually be implemented. However, as has been noted throughout this proposal, it is important to keep in mind that the federal government and its policies inevitably affect agents at all levels.

The three behaviors included in this level are:

1. The City of New York and the DOHMH do not direct sufficient resources (e.g. money, staff, etc.) toward addressing UI populations’ mental health issues, including depression and anxiety
2. The City of New York and the DOHMH do not effectively publicize health care services that are legally accessible to UIs
3. NYS government limits the healthcare coverage and health care services that are accessible to UIs

The City of New York and the DOHMH

Regarding the first behavioral risk factor, six years ago, NYC did not have a clear plan to address mental health and the mental health issues plaguing New Yorkers (The City of New York, 2016). However, in November 2015, First Lady Chirlane McCray and Mayor Bill de Blasio launched ThriveNYC, a “roadmap designed to begin changing the way people think about mental health and the way City government and its many partners deliver services” (The City of New York, 2016). With 54 initiatives, a budget of around \$850 million over four years (three quarters of which is funded by City funds), and the backing of the DOHMH, ThriveNYC was

envisioned to be “the most comprehensive mental health plan of any city or state in the nation” (The City of New York, 2016; New York City Independent Budget Office, 2016). However, in looking at the plan, it becomes clear that at least one highly vulnerable population was neglected: the UI population. In fact, even though the ThriveNYC website claims that one of its 6 goals is to provide “new services to vulnerable populations” and lists various examples of vulnerable populations, immigrants or undocumented immigrants are not included (“ThriveNYC Initiatives,” n.d.).

Additionally, based on ThriveNYC’s Year One Update (released in 2016) and its Year 2 update (released in 2017) – the only two update reports that are available thus far –, it is clear that not much work has been done to address the needs of immigrants in the City. In fact, the only mention of the word “immigrant” in the Year One Update was included in a short paragraph explaining that an initiative called the Virtual Learning Center (VLC), a free and publicly available online learning center offering mental health education and skills-building tools to community organizations, would be launched in 2017 (The City of New York, 2016). The paragraph added that the initial target users of the VLC would include faith-based leaders and *immigrant* community leaders (The City of New York, 2016). Similarly, the word “immigrant” only came up twice during the Year Two Update. Though this report stated that ThriveNYC is “breaking down silos between city agencies, community- and faith-based organizations, and *immigrant* communities as well as academic and research institutions,” it did not explain *how* ThriveNYC is actually working with or for immigrant communities (The City of New York, 2016). In fact, the only other mention of “immigrant” in the report came up during the discussion of the previously mentioned VLC initiative, when the report explained that the public website had successfully launched in April 2017 and that skill-building resources “for advanced learners, including faith- and *immigrant*-community leaders” would be launched in 2018 (The City of New York, 2017). Even though immigrants were mentioned briefly, it is clear that immigrants’ and undocumented immigrants’ mental health needs are not being targeted directly.

One would have thought that with the 2018 launch of Latinx Thrive – the Mayor’s Office’s and the DOHMH’s effort to promote mental health and wellness in the Latinx community – these entities would have taken the opportunity to put forth their plans to meet the mental health needs of Latinx immigrants, especially considering that Latinx represent the largest immigrant group in the City (MOIA, 2018). However, this was not done as well as

expected. Though the City’s press release about Latinx Thrive talked about decreasing the barriers that keep Latinx New Yorkers and “Spanish-speaking New Yorkers” from accessing available behavioral health services and it acknowledged that “the current political climate has created a culture of fear among the Latino, Latina, and Latinx community, traumatizing its members and further isolating them from needed resources,” it failed to mention immigrants or undocumented immigrants explicitly (The City of New York First Lady Chirlane McCray Launches Effort to Promote Mental Health and Wellness in the Latino Community With the Launch of "Latinx Thrive," 2018). This is a big problem since immigrants and undocumented immigrants often face more complex barriers to accessing care and services and they have also been disproportionately targeted by Trump and his policies. Overall, ThriveNYC and Latinx Thrive serve as examples that elucidate how the Mayor’s Office and the DOHMH have neglected and excluded Latinx UIs and their mental health issues from the City’s “most comprehensive mental health plan” (The City of New York, 2016).

A personal determinant for this behavior is that the City of New York and the DOHMH believe that there are more pressing behavioral health issues (other than depression and anxiety) and more vulnerable populations that deserve greater attention and resources. On ThriveNYC’s website there is a section that describes how ThriveNYC is benefitting “vulnerable populations” (“ThriveNYC Initiatives,” n.d.). The following populations are listed in this section: victims of crime, veterans, runaway and homeless youth, youth in detention, seniors, families experiencing homelessness, and individuals with developmental disabilities (“ThriveNYC Initiatives,” n.d.). The inclusion of these populations and the exclusion of undocumented immigrants points to the City of New York and the DOHMH believing that certain populations are more vulnerable and needier and, thus, deserving of more programming and resources. Moreover, based on the Council of the City of New York’s review of the DOHMH’s Fiscal 2019 Executive Budget, it is also apparent that the Mayor’s Office and the DOHMH perceive there to be more pressing behavioral health issues, other than depression and anxiety. In fact, the report makes clear that the opioid epidemic is the DOHMH’s “major agency issue” and that, as such, HealingNYC – the City’s plan to tackle this epidemic – would be receiving additional money and staff from the City in the new fiscal year (The Council of the City of New York, 2018a).

Though the DOHMH may itself perceive that there are needier populations and more pressing behavioral health issues, it is important to note that the DOHMH is also constrained by

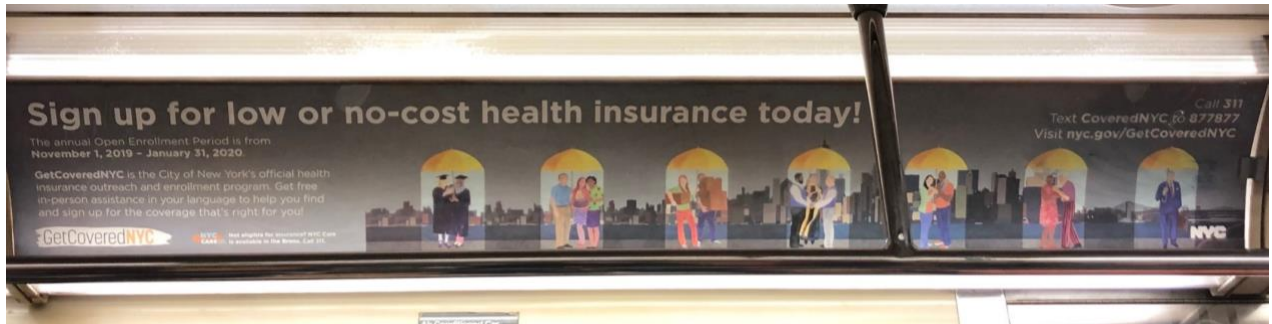
the funding it receives from the City of New York, specifically from the NYC Mayor's Office of Management and Budget. Consequently, another personal determinant for this behavior is that the DOHMH does not believe it receives the adequate funding and resources from the City of New York to effectively address mental health issues, such as depression and anxiety, among Latinx UI populations. Based on the Council of the City of New York's Fiscal 2019 Adopted Expense Budget, the DOHMH only received \$50,000 from the City of New York (as part of the City's Immigrant Health Initiative) to support programs, including mental health programs, "that decrease health disparities among foreign-born New Yorkers by: improving access to health care, addressing cultural and language barriers, and targeting resources and interventions" (The Council of the City of New York, 2018b). However, other entities, such as New York Lawyers for the Public Interest, Inc. and New York Legal Assistance Group, Inc. received \$350,000 and \$300,000, respectively, from the City of New York as part of its Immigrant Health Initiative (The Council of the City of New York, 2018b). The limited funds, earmarked specifically for immigrant-focused programming, that the DOHMH received from the City have the potential to restrict the quantity and quality of (mental) health services that the DOHMH can provide to Latinx immigrants, including those who are undocumented.

Moreover, by examining the Council of the City of New York's review of the DOHMH's Fiscal 2019 Executive Budget, it is also clear that the DOHMH is in fact constrained by the funding it receives from the City of New York. This document states that, though the City Council called on the City's "Administration to allocate \$9.6 million in capital funding for three new Health Action Centers in Queens and in Staten Island," the Administration did not do so (The Council of the City of New York, 2018a). Health Action Centers are part of the DOHMH "investment in key neighborhoods" and they provide "direct clinical services, including behavioral and mental health services, as well as connections to neighborhood-based social services" to community members (The Council of the City of New York, 2018a). Considering that Queens has the highest number of undocumented individuals and the largest Mexican population in the City, this population would have greatly benefitted from a Health Action Center in its borough (MOIA, 2018; New York City Department of City Planning, 2013). The City's decision to not provide the necessary funding to create a Health Action Center put a roadblock in the DOHMH's efforts to promote greater health equity among these vulnerable groups.

The second behavior at the policy/societal level is that the City of New York does not effectively publicize (mental) health care programs and services that are accessible to UI populations, such as NYC Care, in its public advertisements. On August 1, 2019, the City of New York launched NYC Care, a new health access program that is “a key component of Mayor Bill de Blasio’s commitment to guarantee health care for all New Yorkers” (De Blasio Administration Launches NYC Care in the Bronx, Key Component of Mayor's Guaranteed Health Care Commitment, 2019). NYC Care complements the City’s health insurance outreach and enrollment program (called GetCoveredNYC), but goes further by guaranteeing access to affordable health care at NYC Health + Hospital facilities to individuals who are *not* eligible for or *cannot* afford health insurance, including UIs (De Blasio Administration Launches NYC Care in the Bronx, Key Component of Mayor's Guaranteed Health Care Commitment, 2019). According to the NYC Care website, as members of the program, individuals get access to a primary care provider of their choosing, receive preventive care (e.g. vaccinations and routine screenings), obtain mental health support and substance abuse services, get access to low-cost prescription medications, among others (About, n.d.). In order to enroll, individuals only need to provide proof of identification, NYC residency (for at least 6 months), household income, and household size (Enroll, n.d.). Though this program is currently only available in the Bronx, it is expected to be implemented in all five boroughs by the end of 2020 (De Blasio Administration Launches NYC Care in the Bronx, Key Component of Mayor's Guaranteed Health Care Commitment, 2019).

According to the Mayor’s Office, the City’s NYC Care public awareness campaign currently consists of advertisements in English and Spanish (advertisements in additional languages are forthcoming) in target neighborhoods in the Bronx and near all NYC Health + Hospital facilities, including advertisements in public transportation, neighborhood locations, and LinkNYC terminals (De Blasio Administration Launches NYC Care in the Bronx, Key Component of Mayor's Guaranteed Health Care Commitment, 2019). Apart from these print advertisements, the City also has a dedicated website where people can learn about the program and, in the future, there “will also be significant multilingual digital advertisement and ethnic and community media engagement to reach those eligible for NYC Care” (De Blasio Administration Launches NYC Care in the Bronx, Key Component of Mayor's Guaranteed Health Care Commitment, 2019). Below are three images of advertisements for NYC Care. The first image

was taken from Google images, while the third and second images are photographs that I took earlier this year as I rode the subway and the bus.



Even though part of the population that NYC Care is hoping to reach is the UI population, it is noteworthy that the advertisements that I have come across (including those in the images above) do not reference immigration status at all. In fact, while the ads address the financial barriers that many face when accessing insurance or accessing health care services by using words such as “low cost” or “no cost,” the ads do not use words that can help assure people that their immigration status will not pose a barrier to them enrolling in NYC Care. By solely looking at the advertisements, UIs (and those who have undocumented relatives and friends) would not know right away that NYC Care services are legally accessible to them. Moreover, even though the advertisements do provide a phone number and encourage people to call to receive more information, it is vital to consider whether a large segment of the UI population would actually call to ask questions. This is an important consideration since, as has been discussed throughout this needs assessment proposal, many UIs (as well as their family members and friends) are already distrustful of government services and are accustomed to not having easy access to health care services. Overall, seeing as the NYC Care website already explicitly states that NYC Care is accessible to everyone “regardless of immigration status” and assures individuals that they can “seek care without fear” because “we do not record information regarding your immigration status,” the print advertisements should also include this information (About, n.d.). Making these facts visible to the public has the potential to make the advertisements more effective in attracting the attention of UIs and making them (and their networks) aware that these low-cost services are open to them.

A personal determinant that may be linked to the City of New York not effectively publicizing (mental) health care programs and services that are accessible to UI populations, such as NYC Care, in its public advertisements is that the City of New York perceives that its staff already knows what is effective when advertising health care programs and services to UIs. As such, UIs and community-based organizations serving these individuals may not be as involved as they should be in the decision-making processes regarding public advertisements. According to the Mayor’s Office, the public awareness campaign for NYC Care was developed by the Mayor’s Creative Council, NYC Health + Hospitals, and Area 23, a top health advertising agency (De Blasio Administration Launches NYC Care in the Bronx, Key Component of Mayor's Guaranteed Health Care Commitment, 2019). Together, these entities developed the concepts that NYC Care is “the key to the city’s health care” and that New Yorkers need to

“unlock” their right to health care with “dignity” (De Blasio Administration Launches NYC Care in the Bronx, Key Component of Mayor's Guaranteed Health Care Commitment, 2019).

There is no mention, however, of UIs being part of these conversations and decisions. This may point to staff perceiving that they have a good enough understanding of what it is that UI populations want and need and, thus, a belief that their input is not vital. Considering that the City of New York has already contracted with a handful of CBOs to conduct “direct, grass-roots outreach to targeted populations in a culturally appropriate and sensitive manner and make appointments with NYC Care enrollment staff,” it would not be too challenging for the City to involve these organizations and their UI clients in conversations regarding the appearance and messaging of the advertisements (De Blasio Administration Launches NYC Care in the Bronx, Key Component of Mayor's Guaranteed Health Care Commitment, 2019). It is important to note, nonetheless, that the target populations may have actually been involved in the decision-making processes for these advertisements but that the Mayor’s Office has not explicitly stated this in its press releases. In order to get more information regarding the processes for creating the NYC Care advertisements and the strategies that the advertisements used to address UIs’ needs, fears, and wants, in-depth interviews should be conducted with members of the Mayor’s Creative Council. These interviews could also be used to shed light on the validity of this personal determinant by revealing staff’s perceptions of their knowledge and skills when it comes to targeting UIs through their advertisements. Specific data collection methods will be discussed following this section.

New York State Government

The third behavioral risk factor at this level is that NYS government limits the health care coverage and health care services that are legally accessible to UI male adults. NYS has, for a long time, had more expansive Medicaid coverage than the federal government requires (Norris, 2018). Prior to the Affordable Care Act, for example, NYS had already expanded Medicaid to cover many previously-ineligible low-income parents and childless adults and, decades before that, in the 1980s and 1990s, NYS effectively expanded coverage to undocumented pregnant women through Medicaid and to undocumented children through Child Health Plus (CHP)(NYS Health Foundation, 2018; The City of New York, Human Resources Administration/Department of Social Services, 2016). However, under current NYS law, other undocumented immigrants,

such as UI male adults, are not eligible for public coverage other than Medicaid for the Treatment of an Emergency Medical Condition (i.e. Emergency Medicaid) (The City of New York, Human Resources Administration/Department of Social Services, 2016). As the name makes clear, this coverage only kicks in when individuals have a medical emergency. Moreover, aside from being denied year-round Medicaid coverage, most undocumented immigrants who do not have a lawfully present status are also not able to access full-cost private health insurance through the NY State of Health Marketplace (The City of New York, Human Resources Administration/Department of Social Services, 2016). These restrictions help explain why, as of 2018, 58% of UIs in NYC lacked any kind of health insurance (DOHMH, 2018).

The first personal determinant identified for this behavior is that NYS government values coverage and health care services for certain, specific segments of the UI population more so than for UI male adults. One of the populations that NYS has prioritized are DACA recipients. In fact, even though DACA recipients are still prohibited from enrolling in federally-funded Medicaid in most states, a few jurisdictions, such as California, Massachusetts, the District of Columbia and New York use their own state funds (and no federal funds) to provide State-funded Medicaid to income-eligible DACA recipients (NYS Health Foundation, 2018). This voluntary use of State funds to expand coverage to DACA recipients, but not to other segments of the undocumented immigrant population, provides some insight into NYS government's and policy makers' values.

Two other related personal determinants are that the NYS government believes that expanding coverage and health care services to UI male adults will cost the State too much money and that it currently does not receive enough funding from the federal government to allow for expanded coverage for other UI groups. Based on NYS' Fiscal Year 2021 Executive Budget, NYS is currently facing a Medicaid deficit of over \$2.0 billion – a deficit that emerged unexpectedly at the end of the 2019 fiscal year and that “is a risk to State finances if measures to control costs are not enacted” (New York State, n.d.). As a result, Governor Cuomo is reconvening the Medicaid Redesign Team this year to identify \$2.5 billion in savings to the State's Medicaid program (New York State, n.d.). In the meantime, State funds to the Medicaid program are expected to decrease as will funding to the Department of Health, which manages the Medicaid program (New York State, n.d.). Moreover, due to additional concerns that there will be significant reductions in Federal Financial Participation (FFP) in Medicaid funding to the

State during the 2020 fiscal year, the State is also preparing to make further adjustments and cuts to its budget allocations (New York State, n.d.). These concerns with keeping costs down and the worry that the federal government will further scale back financial support to the State can help explain why expanding Medicaid to cover severely underserved immigrant groups, such as UI adults, is not even an idea that is discussed in the budget. In fact, the only mention of “immigrant” and “undocumented” in the budget comes up in the discussion of how the State will increase funding for SUNYs and CUNYs, institutions that are “helping generations of low-income, underserved and immigrant students succeed” (New York State, n.d.). The fact that the terms “immigrant” and “undocumented” are only mentioned in this context connects back to the first personal determinant for this behavior; these excerpts point to the NYS government prioritizing certain UIs, like those who are young and seeking higher education, over other UI populations (such UI male adults) who may be older, of lower-income, and less educated (MOIA, 2018).

Below is the completed LOR for the policy/societal level. All behavioral risk factors and personal determinants discussed above are included in this LOR. The arrows indicate how the behavioral risk factors at the policy/societal level influence the behavioral risk factors at the lower levels, as well as how the policy/societal behavioral risk factors can contribute to and influence the health problem directly.

DETERMINANTS OF RISK [1]
PDs Policy/Societal Level (P/S L)
PD 1. a) The City of New York and the DOHMH believe that there are more pressing behavioral health issues (other than depression and anxiety) and more vulnerable populations (e.g. veteran, the homeless) that deserve greater attention and resources b) DOHMH does not believe it receives the adequate funding and resources from the City of New York to effectively address mental health issues, such as depression and anxiety, among Latinx UI populations
PD2. a) The City of New York perceives that its staff already knows what is effective when advertising health care programs and services to UIs.
PD3. a) New York State government values coverage and health care services for certain, specific segments of the UI population (e.g. DACA recipients) more so than for UI male adults b) New York State government believes that expanding coverage and health care services to UI male adults will cost the State too much money c) New York State government believes it currently does not receive enough funding from the federal government to allow for expanded coverage for other UI groups

RISK FACTORS
Behaviors of Policy/Societal Agents
B1. The City of New York and the DOHMH do not direct sufficient resources (e.g. money, staff, etc.) toward addressing UI populations' mental health issues, including depression and anxiety
B2. The City of New York does not effectively publicize (mental) health care programs and services that are accessible to UI populations, such as NYC Care, in its public advertisements
B3. New York State government limits the health care coverage and health care services that are legally accessible to UI male adults



Proposed Data Collection and Analysis Methods for the Policy/Societal Level

In-Depth Interviews with the Mayor's Creative Council

To fill in the gaps identified at the policy/societal level, in-depth interviews should be conducted with members of the Mayor's Creative Council. These interviews can shed light on the processes that the Council used to craft the NYC Care marketing campaign, as well as how the Council sought to address UI populations' needs, fears, and wants through its advertisements. Moreover, these interviews can also provide insight into Council staff's perceptions of their existing knowledge and skills when it comes to effectively targeting UIs through their marketing campaigns.

To identify specific staff members to be interviewed, researchers should approach the Mayor's Office of Strategic Partnerships and Creative Communications unit and request its assistance. In addition, staff members who are interviewed first can also be asked to identify other members of the Council who they believe should also be interviewed. In person interviews can take place in private offices at the Mayor's Creative Council's headquarters to make participants feel more comfortable and so that respondents have easy access to documents that they may want to refer to during the interviews. The interviewers should have prior experience conducting in-person interviews, and should be skilled in active listening, be knowledgeable of the needs assessment project, and feel comfortable making spur of the moment decisions about "which follow-up questions to ask and which leads to follow" (Gilmore, 2012).

All interviews should be audio recorded and transcribed for review and analysis. The data from these interviews should be analyzed using the qualitative data analysis methods discussed in the "Proposed Data Collection and Analysis Strategies for the Individual Level" section.

A proposed interview guide, informed by the principles of Social Marketing, is provided in Appendix I. Some of the principles of Social Marketing that informed this guide are: focusing on the target audience's behavioral outcomes and behaviors; prioritizing consumer and societal benefits over marketers' benefits; acknowledging the environment where decisions are made and using strategies that increase the desirability of the product; and using audience segmentation and customizing marketing strategies to the characteristics of each distinct audience (Glanz et al., 2015). It is important to note that the proposed guide should be refined once researchers know who they will be interviewing, and iteratively refined after the initial interviews take place.

Summary of Proposed Data Collection Methods

As discussed in the previous sections, given the gaps in the existing evidence and the need for primary data from the at-risk population and key agents at the environmental levels, this needs assessment proposal has put forward the following primary data collection methods: focus groups with UMI male adults in NYC; focus groups with diagnosed UMI male adults in NYC; a self-administered questionnaire to be completed by family members in mixed status, Mexican families in NYC; focus groups with family members of diagnosed UMI male adults in NYC; a self-administered questionnaire for NYC Health + Hospitals and FQHC administrators and other relevant staff; a self-administered questionnaire to be completed by staff at immigrant-serving CBOs in NYC; and in-depth interviews to be conducted with members of the Mayor’s Creative Council.

Data gathered using these proposed primary data collection methods have the potential to enhance our understanding of the behavioral risk factors and the personal determinants that work together to influence the morbidity and mortality from stress-related mental disorders, such as depression and anxiety, among UMI male adults in NYC. Additionally, the data gathered can also be used to inform programs and interventions that are currently underway, as well as those planned in the future, to improve the overall health and well-being of (undocumented) immigrant New Yorkers. The table below summarizes the primary data collection methods that have been discussed in previous sections.

SEM Level	Proposed Primary Data Collection Method	Target Population	Theory Guiding Proposed Data Collection Tool	Appendix Where Proposed Tool Can Be Found
Individual	Focus groups	UMI male adults	Health Belief Model	C
	Focus groups	Diagnosed UMI male adults	Theory of Planned Behavior	D
Interpersonal	Questionnaire	Mixed status, Mexican families	Health Belief Model	E

	Focus groups	Family members of diagnosed UMI male adults	Social Cognitive Theory	F
Organizational	Questionnaire	NYC Health + Hospitals and FQHC staff	Social Cognitive Theory	G
	Questionnaire	Immigrant-serving CBO staff	Social Cognitive Theory	H
Community	None proposed. However, data gathered from the focus groups at the individual and interpersonal levels can be useful for this level.	N/A	N/A	N/A
Policy/Societal	In-depth interviews	Members of the Mayor’s Creative Council	Social Marketing	I

Limitations & Considerations

A limitation of this needs assessment proposal is the lack of current evidence that is specific to UMI males adults in NYC and communities in which they operate. To overcome this limitation, primary data collection methods have been proposed to help researchers gather more current information and data from key agents at the individual, interpersonal, organizational, community, and policy/societal level. However, it is important to keep in mind that, once collected, this primary data will not necessarily be generalizable to all UIs – including those who are not Mexican and those who do not live in NYC.

Additionally, since the data collection methods proposed are cross-sectional in nature, an ambiguous temporal precedence threat to internal validity is likely to be introduced. This means that, because information would only be collected from key agents at one point in time,

researchers would not be able to infer that there is a *causal* relationship between the personal determinants studied and increased morbidity and mortality from stress-related disorders, such as depression and anxiety, among UMI male adults in NYC. Nevertheless, the data collected would be invaluable for learning about the personal determinants and behavioral factors (using a social ecological approach) that influence depression and anxiety among this vulnerable population. Considering the vulnerability of this group, however, it is important to ensure that data collection methods are ethical and that the needs of the participants are put before the needs of the researchers.

In thinking about this needs assessment proposal, it is also important to consider that various initiatives have recently been implemented in NYC and NYS that will likely enhance the well-being of disadvantaged groups (including UMIs), as well as that the upcoming elections might result in U.S. political rhetoric and policies shifting to become more welcoming of immigrants. As such, it is possible that certain components of this needs assessment proposal may become less critical than they currently are. Regardless, the findings from this proposal cannot be ignored, as they have the potential to inform the implementation of current initiatives and the creation of future interventions that seek to enhance the health of UI communities and promote greater health equity.

Dissemination of Findings

This needs assessment proposal and findings from the proposed primary data collection activities should be shared with several stakeholders, including: senior staff at the DOHMH that lead departments concerned with the health of immigrants; Dr. Mitchell Katz, the President and Chief Executive Officer of NYC Health + Hospitals; senior leadership at the Mayor's Office; community-based organizations that serve UIs in NYC; and immigrant communities throughout the City. Dissemination of these findings would help ensure that key stakeholders are aware of the specific needs and assets of UMIs in NYC and can make better informed decisions in regard to programming targeted to this population. In addition, though findings may not be entirely generalizable to other settings and other populations, a concise report of the results should still be developed, published, and disseminated widely in order to provide insight for other cities that are looking for ways to better meet the (mental) health needs of their UI populations.

Conclusion

UIs account for nearly a quarter of all immigrants in the U.S. with the majority of them being men and Latinx (Baker, 2018; Radford & Noe-Bustamante, 2019). Though Mexicans no longer comprise the majority of UIs in the country, they still make up around 47% of this population (Radford, 2019; Passel & Cohn, 2019). Undocumented immigration often presents with increased risks, difficulties, and heightened stressors before and during immigration and, once in this country, UIs are further faced with immense discrimination and economic, social, and political disadvantage (Garcini et al., 2017; Ornelas & Perreira, 2011). The stressors and systemic inequities faced by UIs, and immigrants of all immigration statuses, can lead to great psychological distress and contribute to the development of depression and anxiety (Garcini et al., 2017; Ornelas & Perreira, 2011; Potochnick & Perreira, 2010). Though NYC is more progressive and more accepting of UIs than other places around the country, UIs in the City still face a tremendous number of disadvantages and challenges linked to poor physical and mental health (MOIA, 2018).

Considering that morbidity and mortality from stress-related mental disorders, such as depression and anxiety, among UIs is influenced not only by individuals' behaviors but also by the individuals' environment, this needs assessment proposal identifies and discusses modifiable risk factors not only at the individual level, but also at the interpersonal, organizational, community, and policy/societal levels. The behavioral risk factors at these environmental levels influence (and are influenced by) the behavioral risk factors at the individual level, and can also contribute to and influence the health problem directly. By utilizing this rigorous social ecological approach and by focusing on a particularly vulnerable and often neglected population (i.e. undocumented Mexican immigrant male adults), this needs assessment proposal can help inform interventions put forward by entities, such as the City of New York, the DOHMH, and health care and community-based organizations, that are seeking to improve the health of UI communities in the face of rampant and damaging anti-immigrant rhetoric and exclusionary immigration policies.

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Appendix A

DETERMINANTS OF RISK [1]	RISK FACTORS	HEALTH PROBLEM/S	QUALITY OF LIFE CONSEQUENCES
Personal Determinants (PDs) Behavioral Level	Behaviors of At-Risk Group	Health Problem/s	Quality of Life
<p>PD1. a) UMI male adults believe that depression and anxiety are not necessarily illnesses that require medical intervention b) UMI male adults believe that their social networks will stigmatize them if they seek and access care for mental illness c) UMI male adults are unaware of legally accessible health care services for undocumented immigrants (UIs) and how to access them d) UMI male adults perceive that legally accessible health care services will be unaffordable e) UMI male adults believe that legally accessible health care services will not be available in their preferred language f) UMI male adults perceive that health care professionals will not effectively meet their cultural needs g) UMI male adults fear that they will face unwanted consequences (such as deportation and inability attain legal immigration status) if they access health care services, due to their undocumented status</p>	<p>B1. UMI male adults do not routinely utilize legally accessible health care services (such as FQHCs and NYC Health + Hospitals facilities) that can help them with their mental health needs</p>	<p>Increased morbidity and mortality from stress-related mental disorders, such as depression and anxiety, among undocumented Mexican immigrant (UMI) male adults in New York City</p>	<p>- Reduced work productivity - Reduced wages and income - Decreased quality of social interactions - Increased risk of suicide</p>
<p>PD2. a) Diagnosed UMI male adults have negative attitudes toward the treatments prescribed by health care professionals (e.g. they believe that antidepressants are addictive) b) Diagnosed UMI male adults do not understand the treatment regimen that has been prescribed by the health care professional c) Diagnosed UMI male adults believe that their undocumented status is a barrier to engaging in health-promoting behaviors (such as eating healthy food, getting enough sleep, etc.), scheduling and attending follow-up visits, accessing medications and other services prescribed by a health care professional, and using the medications and services as prescribed d) Diagnosed UMI male adults believe that cost is barrier to engaging in health-promoting behaviors (such as eating healthy food, exercising, etc.), scheduling and attending follow-up visits, accessing medications and other services prescribed by a health care professional, and using the medications and services as prescribed e) Diagnosed UMI male adults believe that they do not have time to engage in health-promoting behaviors (such as eating healthy food, getting enough sleep, etc.), scheduling and attending follow-up visits, accessing medications and other services prescribed by a health care professional, and using the medications and services as prescribed f) Diagnosed UMI male adults perceive that engaging in self-care techniques (such as taking breaks during work, limiting one's alcohol intake, etc.) prescribed by healthcare professionals will make them vulnerable to stigmatization from those around them (e.g. their co-workers)</p>	<p>B2. Diagnosed UMI male adults do not correctly and/or consistently adhere to recommended treatment regimens prescribed by health care professionals (including mental health professionals)</p>	<p>Secondary Health Problems: - Alcohol dependence - Cardiovascular disease</p>	
PDs Interpersonal Level (IL)	Behaviors of Interpersonal Agents		
<p>PD1. a) Family members believe that depression and anxiety are normal consequences of UMI male adults' life circumstances b) Family members believe that mental illness is something that UMI male adults have the ability to surmount on their own c) Family members do not know where they can take UMI male adults to receive health care services (including mental health care services) d) Family members believe that there are more pressing priorities and needs (e.g. work, taking care of children) that require their attention and time e) Family members fear that, if UMI male adults access health care services, family members will be put at risk (e.g. at risk of deportation and separation from children)</p>	<p>B1. Family members do not provide the appropriate or adequate social support (i.e. emotional, instrumental, informational, and appraisal support) needed to encourage and facilitate UMI male adults' (including UMI male adults experiencing stress-related mental disorders, such as depression and anxiety) utilization of legally accessible health care services (such as FQHCs and NYC Health and Hospitals facilities) that can help with mental health needs</p>		

DETERMINANTS OF RISK [1]	RISK FACTORS	HEALTH PROBLEMS	QUALITY OF LIFE CONSEQUENCES
<p>PD3 a) Family members do not believe that a treatment regimen, as prescribed by a health care professional, will be effective in treating UMI male adults' stress-related mental disorders, such as depression and anxiety</p> <p>b) Family members do not understand the treatment regimen that has been prescribed to the UMIs by the health care professionals</p> <p>c) Family members fear that if their loved ones engage in mental health treatment they and their families will be stigmatized by their social networks</p> <p>d) Family members believe that long-term treatment is unaffordable for the family</p>	<p>B3. Family members do not facilitate adherence to recommended treatment regimens prescribed by health care professionals among UMI male adults diagnosed with stress-related mental disorders, such as depression and anxiety</p>		
<p>PD4 a) Colleagues believe that "masculinity" inherently involves risk-taking and dangerously exerting oneself</p> <p>b) Colleagues believe that certain unhealthy behaviors (such as drinking alcohol, for example) are effective ways to deal with feelings of loneliness and sadness</p> <p>c) Colleagues perceive that there are barriers (e.g. cost, time, immigration status) to UMIs engaging in health-promoting behaviors</p>	<p>B4. Colleagues do not promote healthy behaviors (e.g. seeking routine medical care, abstaining from inadequate amounts of alcohol) that can help alleviate stress and prevent exacerbation of stress-related mental disorders, such as depression and anxiety, among UMIs</p>		
PDs Organizational Level (OL)	Behaviors of Organizational Agents		
<p>PD1 a) Health care professionals hold implicit biases against minorities and against males when it comes to mental disorders</p> <p>b) Health care professionals have negative attitudes toward mental health disorders</p> <p>c) Health care professionals do not fully understand the underlying causes of mental illness among UMI male adults (i.e. socioeconomic stress, discrimination, etc.)</p>	<p>B1. Health care professionals do not provide a timely and accurate diagnosis to UMI male adults experiencing stress-related mental disorders, such as depression and anxiety</p>		
<p>PD2. a) Health care professionals hold implicit biases against minorities and against males when it comes to treating mental disorders</p> <p>b) Health care professionals are not aware of coverage options and treatments that are legally and financially accessible to UMIs</p> <p>c) Health care professionals perceive barriers (e.g. lack of knowledge, lack of skills, lack of time) to engaging in health literacy-appropriate practices</p>	<p>B2. Health care professionals do not recommend state of the art treatment regimens in a literacy-appropriate way to UMI male adults suffering from stress-related mental disorders, such as depression and anxiety</p>		
<p>PD3. a) Administrators perceive they lack the skills and knowledge necessary to provide their staff with appropriate health literacy training</p> <p>b) Administrators do not believe they have big enough budgets to provide their staff with appropriate health literacy training</p>	<p>B3. Health care organizations legally accessible to UMIs (such as FQHCs and NYC Health + Hospitals facilities) do not adequately train their staff to provide literacy-appropriate care to their patients, including UMI male adults suffering from stress-related mental disorders, such as depression and anxiety</p>		
<p>PD4. a) Health care professionals believe their time will be better spent if they focus solely on their patients' medical needs and not on their social needs</p> <p>b) Health care organizations' staff lack knowledge of CBOs (such as food pantries, housing assistance, etc.) in the community that may be able to help address UMI's social needs</p> <p>c) Health care organizations do not expect that they will benefit financially from partnering with CBOs to address their patients' social needs</p>	<p>B4. Health care organizations legally accessible to UMIs (such as FQHCs and NYC Health + Hospitals facilities) do not have adequate partnerships with legally accessible community-based organizations (CBOs) that can address social determinants of health issues that exacerbate stress and stress-related mental disorders, such as depression and anxiety, among UMIs</p>		

DETERMINANTS OF RISK [1]	RISK FACTORS	HEALTH PROBLEMS	QUALITY OF LIFE CONSEQUENCES
<p>PD5. a) CBO staff believe they lack the knowledge or skills to provide mental health support and resources to the populations they serve b) CBO staff perceive that they do not have enough resources (i.e. money, staff) necessary to provide adequate and sufficient mental health supports to the populations they serve c) CBO staff perceive that the populations they serve (including UMs) would be resistant, unable, and/or unwilling to receive mental health supports</p>	<p>B5. Community-based organizations (CBOs) legally accessible to UMs (e.g. food pantries, educational services, housing assistance, etc.) do not provide the populations they serve with adequate and sufficient mental health resources and support (e.g. mental health screenings, mental health education, referrals to mental health providers, etc.)</p>		
Pds Community Level (CL)	Behaviors of Community Agents		
<p>PD1. a) Undocumented communities are not aware and do not have a clear understanding of which government services and programs, including health care and health-related services, are legally accessible to them b) Undocumented communities perceive government services and programs to be untrustworthy</p>	<p>B1. Undocumented communities' norms do not promote the use of government services and programs (e.g. hospitals, U.S. welfare programs), even those that are legally accessible to UIs</p>		
<p>PD 2. a) Mexican community members have negative attitudes toward men expressing their feelings and emotions b) Mexican community members also perceive conversations surrounding mental health problems to be uncomfortable</p>	<p>B2. Mexican communities' norms do not encourage open and honest discussions about mental health issues affecting men</p>		
Pds Policy/Societal Level (P/S L)	Behaviors of Policy/Societal Agents		
<p>PD 1. a) The City of New York and the DOHMH believe that there are more pressing behavioral health issues (other than depression and anxiety) and more vulnerable populations (e.g. veterans, the homeless) that deserve greater attention and resources b) DOHMH does not believe it receives the adequate funding and resources from the City of New York to effectively address mental health issues, such as depression and anxiety, among Latinx UI populations</p>	<p>B1. The City of New York and the DOHMH do not direct sufficient resources (e.g. money, staff, etc.) toward addressing UI populations' mental health issues, including depression and anxiety</p>		
<p>PD2. a) The City of New York perceives that its staff already knows what is effective when advertising health care programs and services to UIs.</p>	<p>B2. The City of New York does not effectively publicize (mental) health care programs and services that are accessible to UI populations, such as NYC Care, in its public advertisements</p>		
<p>PD3. a) New York State government values coverage and health care services for certain, specific segments of the UI population (e.g. DACA recipients) more so than for UI male adults b) New York State government believes that expanding coverage and health care services to UI male adults will cost the State too much money c) New York State government believes it currently does not receive enough funding from the federal government to allow for expanded coverage for other UI groups</p>	<p>B3. New York State government limits the health care coverage and health care services that are legally accessible to UI male adults</p>		

Appendix B

Figure 1. Queens County's Number of People Who Are Foreign Born and Not U.S. Citizens, 2017

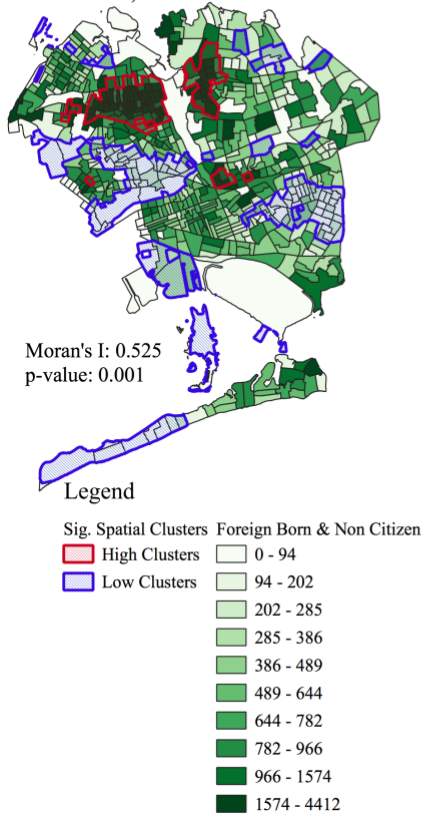


Figure 2. Queens County's Prevalence of Lack of Health Insurance, 2015

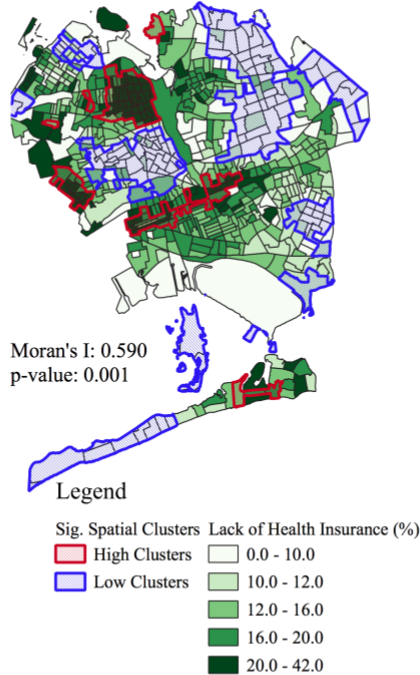
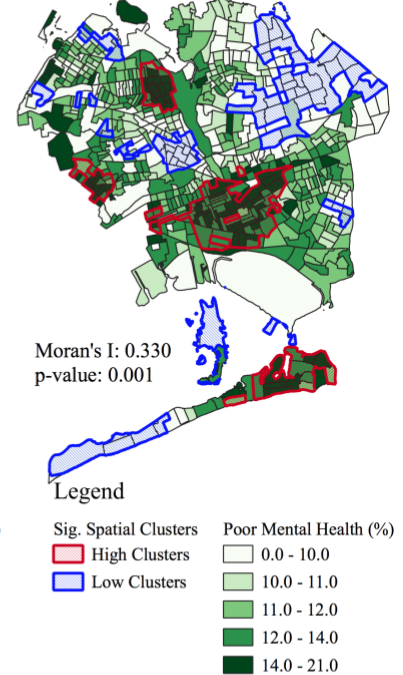


Figure 3. Queens County's Prevalence of Poor Mental Health, 2017



Note: citizenship status data was sourced from the United States Census Bureau website. Using the American Community Survey's 5-year estimates at the census tract level for Queens County in 2017, the variable "Foreign Born, Not a U.S. Citizen" was extracted. This variable was determined based on the number of people living in Queens County who are foreign born and not U.S. Citizens

Note: health insurance data was sourced from the Centers for Disease Control and Prevention's 500 Cities, which provides city- and census tract-level estimates for various health outcomes, clinical services, and risk factors for the largest 500 cities in the county. Using census tract level estimates for Queens County in 2015, the variable "Lack of Health Insurance" was extracted. This variable was determined based on the crude prevalence of "current lack of health insurance among adults aged 18-64 years"

Note: mental health data was also sourced from the Centers for Disease Control and Prevention's 500 Cities. Using census tract level estimates for Queens County in 2015, the variable "Poor Mental Health" was extracted. This variable was determined based on the crude prevalence of "mental health not good for ≥ 14 days among adults aged ≥ 18 years" in Queens County.

Appendix C

Preliminary Focus Group Guide for Focus Groups with UMI Male Adults

Opening question:

1. To start, I would like to go around the room and hear a little bit about you. Please don't share your name, but tell us how long you have been in the United States and what neighborhood you currently live in.

Introductory question:

2. I am interested in hearing from you about health and health care services, so before we get into more detailed questions, what does the word "health" or "healthy" mean to you?

Main questions:

3. Are there any particular health issues that you think undocumented immigrant men in New York City face?
 - a. Why do you think these health issues are present?
4. Are there any particular *mental* health issues you think undocumented immigrant men in New York City face?
 - a. What about issues like depression or anxiety?
5. It is the case that, in some communities, people don't really like to talk about depression or anxiety. Would you say that is the case in your community? Why or why not?

- a. Would you say that there is “stigma” surrounding mental health issues, such as depression or anxiety, in your community?
 - b. Does stigma impact men and women the same way? Why or why not?
6. Where do you usually go to receive general health care services? If you don’t access health care services, feel free to say that.
 - a. What kind of health care services do you receive there?
 - b. If you needed help with emotional problems would services be available there?
 - c. If you don’t typically access health care services, what is the main reason?
7. Would you say that it is easy for people in your community to seek and access care for mental health issues such as depression or anxiety? Why or why not?
8. Have you heard of New York City Health and Hospitals? What have you heard about those facilities?
 - a. Do you know if those facilities are legally accessible to undocumented immigrants?
 - b. Have you utilized any New York City Health and Hospitals facilities? If so, which ones?
9. Have you heard of Federally Qualified Health Centers? What have you heard about those facilities?
 - a. Do you know if those facilities are legally accessible to undocumented immigrants in New York City?
 - b. Have you utilized any Federally Qualified Health Centers facilities in New York City? If so, which ones?
10. What are some of main barriers that you face when accessing health care services?

- a. What about challenges related to not knowing what services are available and how to access them?
 - b. What about challenges related to cost?
 - c. What about challenges related to language?
 - d. What about challenges related to culture or cultural needs?
 - e. What about challenges related to immigration status, such as fear of being discovered by the authorities?
 - f. Any other challenges that come to mind?
11. What are some things that make it easy for you to access to health care services?
12. What do you wish health care facilities in New York City, including New York City Health and Hospitals and Federally Qualified Health Centers, did differently so as to improve your access to those facilities?
13. Before we close, do you have any other comments about health care services in New York City or anything we haven't discussed?
14. Do you have any questions for me?

Appendix D

Preliminary Focus Group Guide for Focus Groups with Diagnosed UMI Male Adults

Opening question:

1. To start, I would like to go around the room and hear a little bit about you. Please don't share your name, but tell us how long you have been in the United States and what neighborhood you currently live in.

Introductory question:

2. I am interested in hearing from you about health, including mental health, so before we get into more detailed questions, what does the word "health" or "healthy" mean to you?

Main questions:

3. It is the case that, in some communities, people don't really like to talk about depression or anxiety, would you say that is the case in your community? Why or why not?
 - a. How do people usually talk about depression in your community? What sorts of words or idioms are used to express feelings of depression?
 - b. Would you say that there is "stigma" surrounding mental health issues, such as depression or anxiety, in your community?
 - c. Does stigma impact men and women the same way? Why or why not?
4. Thinking back to when you were first diagnosed with anxiety or depression, how did you react to your diagnosis?
 - a. How did your friends, family members, or other people in your networks react? Why do think they reacted this way?

5. What treatments have you been prescribed by your health care professionals? Treatments include therapy, counseling, medications, healthy behaviors (such as eating healthy, sleeping more, exercising, etc.)
6. Thinking back to when you were first prescribed those treatments, how did you first react to those treatments?
 - a. What do you think about those prescribed treatments now?
 - b. How did your friends, family members, or other people in your networks react?
 - c. What do your friends, family members, or other people in your network think or say about those prescribed treatments now?
7. What are some of main barriers that you currently face when trying to correctly and consistently adhere to medications that you have been prescribed?
 - a. What about challenges related to not understanding what the treatment is and what you need to do?
 - b. What about challenges related to cost?
 - c. What about challenges related to time?
 - d. What about challenges related to what your friends, family members, or other people in your networks say or do?
 - e. Any other challenges that come to mind?
8. What are some of main barriers that you currently face when trying to correctly and consistently adhere to therapy or counseling that you have been prescribed?
 - a. What about challenges related to not understanding what the treatment is and what you need to do?
 - b. What about challenges related to cost?
 - c. What about challenges related to time?

- d. What about challenges related to what your friends, family members, or other people in your networks say or do?
 - e. Any other challenges that come to mind?
9. What are some of main barriers that you currently face when trying to correctly and consistently adhere to healthy behaviors (e.g. getting enough sleep, eating a balanced and nutritious diet) that you have been prescribed?
- a. What about challenges related to not understanding what the treatment is and what you need to do?
 - b. What about challenges related to cost?
 - c. What about challenges related to time?
 - d. What about challenges related to what your friends, family members, or other people in your networks say or do?
 - e. Any other challenges that come to mind?
10. What are some things that currently facilitate your adherence to the treatments you have been prescribed?
11. What do you wish your doctors or the clinic/hospital did differently so as to improve your adherence to the treatments you have been prescribed?
12. Before we close, do you have any other comments about the topics we have discussed?
13. Do you have any questions for me?

Appendix E

Preliminary Questionnaire for Mixed Status, Mexican Families

- 1. Have you heard of any of the following hospitals or neighborhood health clinics?
(Check the boxes next to all the hospitals you have heard of) (If you have not heard
of any of the facilities, please skip to question #3)**

- NYC Health + Hospitals/Elmhurst
(Address: 79-01 Broadway, Elmhurst, New York 11373)

- NYC Health + Hospitals/Queens
(Address: 82-68 164th Street, Jamaica, New York 11432)

- NYC Health + Hospitals/Gotham Health Jackson Heights
(Address: 34-33 Junction Boulevard, Queens, NY 11372)

- NYC Health + Hospitals/Gotham Health Women's Health Center
(Address: 59-17 Junction Boulevard, Queens, NY 11368)

- NYC Health + Hospitals/Gotham Health Ridgewood
(Address: 769 Onderdonk Avenue, Queens, NY 11385)

- NYC Health + Hospitals/Gotham Health Parsons
(Address: 90-37 Parsons Boulevard, Queens, NY 11432)

- NYC Health + Hospitals/Gotham Health Springfield Gardens
(Address: 134-64 Springfield Boulevard, Queens, NY 11413)

- NYC Health + Hospitals/Gotham Health South Queens
(Address: 114-02 Guy R. Brewer Boulevard, Queens, NY 11434)

- NYC Health + Hospitals/Gotham Health Woodside
(Address: 50-53 Newtown Road, Queens, NY 11377)

2. Have you or a family member used any of the health care facilities listed above?

- Yes
- No (Skip to question #4. Do not answer question #3a.)

3a. Since your answer was “yes,” please check the boxes next to all the facilities you or your family members have used.

- NYC Health + Hospitals/Elmhurst
(Address: 79-01 Broadway, Elmhurst, New York 11373)

- NYC Health + Hospitals/Queens
(Address: 82-68 164th Street, Jamaica, New York 11432)

- NYC Health + Hospitals/Gotham Health Jackson Heights
(Address: 34-33 Junction Boulevard, Queens, NY 11372)

- NYC Health + Hospitals/Gotham Health Women’s Health Center
(Address: 59-17 Junction Boulevard, Queens, NY 11368)

- NYC Health + Hospitals/Gotham Health Ridgewood
(Address: 769 Onderdonk Avenue, Queens, NY 11385)

- NYC Health + Hospitals/Gotham Health Parsons
(Address: 90-37 Parsons Boulevard, Queens, NY 11432)

- NYC Health + Hospitals/Gotham Health Springfield Gardens
(Address: 134-64 Springfield Boulevard, Queens, NY 11413)

NYC Health + Hospitals/Gotham Health South Queens
(Address: 114-02 Guy R. Brewer Boulevard, Queens, NY 11434)

NYC Health + Hospitals/Gotham Health Woodside
(Address: 50-53 Newtown Road, Queens, NY 11377)

3. If your undocumented family member is experiencing mental health concerns (e.g., depression, anxiety) how comfortable would you feel referring them to any of the healthcare facilities listed above?

- Highly uncomfortable
- Somewhat uncomfortable
- Neutral
- Somewhat comfortable
- Very comfortable

4. If your undocumented family member is experiencing mental health concerns (e.g., depression, anxiety) would you actually refer them to any of the healthcare facilities listed above?

- Yes
- No (Skip to question #5. Do not answer question #4a or question #4b)

4a. Since your answer was “yes,” which facility would you refer them to? (Check the boxes next to all the facilities you would refer your undocumented family member to)

NYC Health + Hospitals/Elmhurst
(Address: 79-01 Broadway, Elmhurst, New York 11373)

NYC Health + Hospitals/Queens
(Address: 82-68 164th Street, Jamaica, New York 11432)

- NYC Health + Hospitals/Gotham Health Jackson Heights
(Address: 34-33 Junction Boulevard, Queens, NY 11372)

- NYC Health + Hospitals/Gotham Health Women’s Health Center
(Address: 59-17 Junction Boulevard, Queens, NY 11368)

- NYC Health + Hospitals/Gotham Health Ridgewood
(Address: 769 Onderdonk Avenue, Queens, NY 11385)

- NYC Health + Hospitals/Gotham Health Parsons
(Address: 90-37 Parsons Boulevard, Queens, NY 11432)

- NYC Health + Hospitals/Gotham Health Springfield Gardens
(Address: 134-64 Springfield Boulevard, Queens, NY 11413)

- NYC Health + Hospitals/Gotham Health South Queens
(Address: 114-02 Guy R. Brewer Boulevard, Queens, NY 11434)

- NYC Health + Hospitals/Gotham Health Woodside
(Address: 50-53 Newtown Road, Queens, NY 11377)

4b. Why would you refer your family member to these facilities?

(Check the boxes next to all the reasons that apply)

- My family member needs medical help
- The staff speaks my relative’s language
- The facility provides care to individuals who are undocumented
- The facility offers services that are affordable
- The facility will not put my undocumented relative at risk (e.g. at risk of deportation)
- The facility will not put me or my family at risk (e.g. at risk of deportation, separation, incarceration)

Other, please specify: _____

5. Why would you not refer your undocumented family member to any of the facilities listed? (Check the boxes next to all the reasons that apply)

- Concerned that staff will not speak your relative's language
- Concerned that your relative will not be treated due to their undocumented status
- Concerned that your relative will not be able to pay for care
- Concerned that your relative will be put at risk (e.g. at risk of deportation)
- Concerned that you and your family will be put at risk (e.g. at risk of deportation, separation, incarceration)
- Believe that the medical system cannot effectively address mental health issues
- Believe that mental health issues are better dealt with on one's own or with one's family
- Believe that mental health issues are normal consequences of your undocumented relative's life circumstances
- Other, please specify:

Appendix F

Preliminary Focus Group Guide for Focus Groups with Family Members of Diagnosed UMI Male Adults

Opening question:

1. To start, I would like to go around the room and hear a little bit about you. Please don't share your name, but tell us how long you and your family have been receiving services at this have been in the United States and what neighborhood you currently live in.

Introductory question:

2. I am interested in hearing from you about treatment adherence, so before we get into more detailed questions, what does "treatment adherence" mean to you?

Main questions:

3. To begin, what mental health disorder(s) has your family member been formally diagnosed with?
 - a. What do you know about this disorder(s)?
 - b. How did the medical professional explain this disorder(s) to you or your family member?
4. When you explain what your family member is feeling or experiencing to others, how do you describe it?
 - a. What sorts of words or idioms do you use?
5. What do you believe is the cause(s) of the mental health disorder of your family member?

6. What different types of treatment has your family member been prescribed by medical health professionals? *[Ask the questions below when they apply]*
- What do you know about the purpose of the treatment(s)?
 - What do you know about the dose of the treatment(s)?
 - What do you know about the duration of the treatment(s)?
 - What do you know about the side effects of the treatment(s)?
 - What do you know about the likelihood of getting addicted to this treatment(s)?
7. What do you think about the treatment(s) that your family member has been prescribed?
- What are some good things you think will happen as a result of your family member adhering to this treatment(s)?
 - What are some negative things you think will happen as a result of your family member adhering to this treatment(s)?
8. Overall, would you say the prescribed treatments have been effective or will be effective in addressing the problems that your family member is experiencing? *[Probe on each treatment that was discussed in the previous questions]*
- Why do you think the prescribed treatment(s) have been or have not been effective?
9. In thinking about your role in your family member's treatment, how do you personally help your family member adhere to these prescribed treatment(s)?
10. What are the barriers that you and your family member face in adhering to the prescribed treatment(s) correctly and consistently?

- a. Is understanding the treatment a barrier?
 - b. Is cost of treatment a barriers?
11. What are some things that make it easy for you and your family member to adhere to the prescribed treatment(s) correctly and consistently?
12. What do your friends and family think about the treatment(s) that your family member has been prescribed?
- a. In general, do you think they approve or disapprove of the treatment(s)? Why?
 - b. [If your friends or family members disapprove of the treatment(s)], how do you navigate that disapproval?
13. When treatment problems arise (e.g. negative side effects) how do you and your family member deal with these problems?
14. In your opinion, does treatment(s) need to be continued for a long period of time, or can it be stopped when your family member feels better?
14. What do you wish the doctors or the clinic/hospital staff did differently to help you and your family member adhere to the prescribed treatment(s)?
15. Before we close, do you have any other comments about the topics we have discussed or do you have any questions for me?

Appendix G

Preliminary Questionnaire for NYC Health + Hospitals and FQHC Staff

Part I

1. How much do you agree with the statement “providing information and care to our patients in a way that matches their literacy-level and in a way that they can understand is important to our organization”?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

2. How much do you agree with the statement “providing information and care to our patients in a way that matches their literacy-level and in a way that they can understand is important to me”?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

3. Does your organization currently train its medical staff on health literacy and on how to communicate information to patients in literacy-appropriate ways?

- Yes (Skip to question #4. Do not answer question #3a.)
- No
- Don't Know

3a. In your opinion, why does your organization not provide this training?

(Select as many answer choices as apply)

- These types of trainings are not currently our priority
- These types of trainings are not needed or are not necessary
- These types of trainings will not benefit our staff

- These types of trainings will not benefit our patients
- We don't have the knowledge needed to train this staff
- We don't have the skills needed to train this staff
- We don't have the funds needed to train this staff
- We don't have the time needed to train this staff
- Other, please specify: _____

4. Does your organization currently train other client-facing (not including medical staff) on health literacy and on how to communicate information to patients in literacy-appropriate ways?

- Yes. We also train this staff: _____.
(Skip to question #5. Do not answer question #4a.)
- No
- Don't Know

**4a. In your opinion, why does your organization not provide this training?
(Select as many answer choices as apply)**

- These types of trainings are not currently our priority
- These types of trainings are not needed or are not necessary
- These types of trainings will not benefit our staff
- These types of trainings will not benefit our patients
- We don't have the knowledge needed to train this staff
- We don't have the skills needed to train this staff
- We don't have the funds needed to train this staff
- We don't have the time needed to train this staff
- Other, please specify: _____

Part II

5. Does your organization currently partner or collaborate with community-based organizations in the community?

- Yes
- No (Skip to question #4. Do not answer question #5a)

- Don't know

5a. Since your answer was “yes,” how strong would you say these partnerships are?

- Extremely strong
- Very strong
- Somewhat strong
- Not very strong
- Not at all strong
- 3b. Briefly describe what this partnership or collaboration looks like:

6. Would you say you and your staff have sufficient knowledge of community-based organizations in the community that can meet your patients' needs?

- A lot of knowledge
- Moderate knowledge
- Some knowledge
- Slight knowledge
- No knowledge at all

7. Do you wish you and your staff had more knowledge about the community-based organizations in the community that can meet your patients' needs?

- Yes
- No
- Neutral

8. How much do you agree with the statement “it is my organization’s role to ask patients about and learn about patients’ non-medical problems (e.g. food insecurity, housing instability)”?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

9. How much do you agree with the statement “connecting patients to community-based organizations and services will improve patients’ health”?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

10. How much do you agree with the statement “connecting patients to community-based organizations and services would benefit our organization as a whole”?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

11. In your opinion, what are barriers to routinely asking your patients about their non-medical problems (e.g. food insecurity, housing instability)? (Select as many answer choices as apply)

- Not enough funds
- Not enough time
- Not enough staff capacity
- Not enough knowledge on how to do so
- Staff won’t be happy
- Patients won’t be happy
- No benefit to patients

- No benefit to our organization

12. In your opinion, what are barriers to routinely connecting your patients with community-based organizations or services in the community? (Select as many answer choices as apply)

- Not enough funds
- Not enough time
- Not enough staff capacity
- Not enough knowledge on how to do so
- Staff won't be happy
- Patients won't be happy
- No benefit to patients
- No benefit to our organization

Appendix H

Preliminary Questionnaire for Immigrant-Serving CBO Staff

1. Would you say that your organization currently provides mental health resources and supports to clients?

- Yes
- No (Skip to question #2. Do not answer question #1a or #1b.)
- Don't Know

1a. Since you answered “yes,” what types of mental health resources and supports do you currently offer? (Select as many answer choices as apply.)

- Mental health screenings on site
- Referrals to mental health services
- Mental health education (e.g. workshops) on site
- Provision of mental health services (e.g. therapy, medications) on site
- Other, please specify: _____

1b. Would you say these resources and supports you offer are adequate and sufficient?

- Extremely adequate and sufficient
- Very adequate and sufficient
- Somewhat adequate and sufficient
- Not very adequate and sufficient
- Not at all adequate and sufficient

2. Some people have different ideas of what mental health resources and supports entail. Does your organization currently do any of the following? (Select as many answer choices as apply.)

- Mental health screenings on site
- Referrals to mental health services
- Mental health education (e.g. workshops) on site

- Provision of mental health treatment (e.g. therapy, medications) on site
- Other, please specify: _____

3. How much do you agree with the statement “providing mental health resources and supports to our clients is important to our organization”?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

4. How much do you agree with the statement “providing mental health resources and supports to our clients is important to our organization is important to me”? (Select as many answer choices as apply.)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

5. In your opinion, what are barriers to *routinely screening* clients for mental health issues, such as depression and anxiety, on site? (Select as many answer choices as apply.)

- This is not currently a priority for my organization
- Routinely screening for mental health issues is not needed or necessary
- Routinely screening for mental health issues will not benefit our staff
- Routinely screening for mental health issues will not benefit our clients
- Clients will be resistant to getting screened for mental health issues (due to stigma, for example)
- We don't have the knowledge needed to routinely screen for mental health issues
- We don't have the skills needed to routinely screen for mental health issues
- We don't have the necessary funds to routinely screen for mental health issues
- We don't have the time needed to routinely screen for mental health issues
- We don't have enough staff to routinely screen for mental health issues

Other, please specify: _____

6. In your opinion, what are barriers to *referring* clients to mental health services?

(Select as many answer choices as apply.)

- This is not currently a priority for my organization
- Referring clients to mental health services is not needed or necessary
- Referring clients to mental health services will not benefit our staff
- Referring clients to mental health services will not benefit our clients
- Clients will be resistant to receiving referrals to mental health services (due to stigma, for example)
- Clients will be unable to complete mental health referrals (due to language barriers, immigration status, lack of insurance, lack of transportation, unmet childcare needs, cost, fear, etc.)
- We don't have the knowledge needed to refer clients to mental health services
- We don't have the skills needed to refer clients to mental health services
- We don't have the necessary funds to refer clients to mental health services
- We don't have the time needed to refer clients to mental health services
- We don't have enough staff to refer clients to mental health services
- Other, please specify: _____

7. In your opinion, what are barriers to *offering mental health education* (i.e. workshops) to clients on site? (Select as many answer choices as apply.)

- This is not currently a priority for my organization
- Offering mental health education is not needed or necessary
- Offering mental health education will not benefit our staff
- Offering mental health education will not benefit our clients
- Clients will be resistant to receiving mental health education (due to stigma, for example)
- We don't have the knowledge needed to offer mental health education
- We don't have the skills needed to offer mental health education
- We don't have the necessary funds to offer mental health education

- We don't have the time needed to offer mental health education
- We don't have enough staff to offer mental health education
- Other, please specify: _____

8. In your opinion, what are barriers to *providing mental health treatment* (e.g. therapy, medications) to clients on site? (Select as many answer choices as apply.)

- This is not currently a priority for my organization
- Providing mental health treatment is not needed or necessary
- Providing mental health treatment will not benefit our staff
- Providing mental health treatment will not benefit our clients
- Clients will be resistant to receiving mental health treatment (due to stigma, negative attitudes toward treatment, etc.)
- Clients will be unable to receive mental health treatment (due to cost, immigration status, lack of insurance, etc.)
- We don't have the knowledge needed to provide mental health treatment
- We don't have the skills needed to provide mental health treatment
- We don't have the necessary funds to provide mental health treatment
- We don't have the time needed to provide mental health treatment
- We don't have enough staff to provide mental health treatment
- Other, please specify: _____

9. How much do you agree with the statement “our organization should provide mental health resources and supports to our clients, such as mental health screenings, mental health referrals, mental health education, and mental health treatment”?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

10. How much do you agree with the statement “connecting patients to community-based organizations and services will improve clients’ health”?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

11. How much do you agree with the statement “connecting patients to community-based organizations and services would benefit our organization as a whole”?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

Appendix I

Preliminary Interview Guide for Interviews with the Mayor's Creative Council

1. Tell me about your involvement with the Mayor's Creative Council?
 - a. How long have you been in the Council?
 - b. What is your role?

2. What would you say is the role of the Mayor's Creative Council?
 - a. What is the Council trying to accomplish?

3. In thinking about the NYC Care marketing campaign, particularly the public advertisements, what would you say was the goal of the campaign?
 - a. What populations was the campaign hoping to target?
 - b. What behavioral outcomes among the target population(s) was it hoping to achieve?

4. What was the process for planning, crafting, and implementing this campaign? Walk me through the process.
 - a. Who was involved in the planning meetings? Who was involved in the decision-making?
 - b. Were there focus groups with members of the target audience? Why or why not?

5. A large segment of the uninsured population in New York City is made up of undocumented immigrants. How did the NYC Care marketing campaign seek to address the undocumented population's needs, fears, and wants?

6. Overall, would you say that the Council has the knowledge and skills necessary to develop campaigns that are effective in attracting the attention of undocumented immigrants and encouraging them to access the City's health care services?

7. How do you think the marketing strategies for NYC Care, and for other programs, could be better customized to the characteristics of the undocumented immigrant population in NYC?