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Procurement Of Housing In Depressed, African-American Homeless Patients In A Large Urban Federally Qualified Health Center: A Pilot To Improve Workflow Processes, Identify Best Practices And Impact Outcomes

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Abstract

Homelessness is a chronic issue in the United States (US)-impacting individuals from every socio-economic class. African Americans in the US disproportionately experience rates of homelessness higher than those in the general population. These individuals are vulnerable to poor physical and chronic mental health problems, chief among them is depression. African-American homeless individuals have high rates of depression and experience disparities in utilization and access to health care. To address this problem within a healthcare systems level context, this Doctorate of Nursing Practice (DNP) project examined the association between homelessness and depression in African-Americans. A pilot project focused on the targeted and efficient procurement of housing in depressed, homeless African-American patients in a large urban Federally Qualified Health Center was implemented. The project is a first, exploratory step in an initiative to improve workflow processes, identify best practices, and impact clinical outcomes in this highly vulnerable group of patients.

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Chapter 1: The Impact of Housing on Depression

In January 2017, The National Alliance to End Homelessness reported that approximately 553,742 people in the United States (US) are currently experiencing homelessness (National Alliance to End Homelessness, 2017). Homeless people experience rates of poor physical health and chronic mental health problems higher than the general population, putting them at risk of premature death (Fazel, et. al 2008). It is estimated that nearly half of homeless individuals in the US have a serious mental illness (Burt, 1992). Additionally, African-American homeless individuals in the US have some of the highest rates of depression and experience disparities in utilization of and access to health care (World Health Organization (WHO), 2017). They are overrepresented with respect to homelessness as well. For example, African Americans in the US make up more than 40% of the homeless population, while representing only 13% of the general population (National Alliance to End Homelessness, 2017). Due to their high rates of depression, many homeless African Americans remain chronically homeless while continuing to experience significant disparities in their mental health care.

Homeless African-Americans with depression identify housing as one of the most important aspects of long-term health (Trainor, et. al. 1999). Housing is the primary means whereby individuals achieve balance in life and it provides a firm foundation as a springboard for addressing other life issues (Trainor et. al, 1999). Housing is a social determinant of health. Research suggests that homelessness or inadequate housing are linked to both physical and mental health through various pathways (Hernandez & Sugila, 2016). Unfortunately, one of the devastating outcomes of a chronic mental illness such as depression is homelessness as it

negatively impacts employment and financial status, making it extremely difficult to pay market rent or compete for scarce affordable housing units (Trainor et. al, 1999). This is compounded by discriminatory housing practices against minority groups, further raising the costs of housing and restricting housing options for them (Urban Institute, 2017).

Problem Statement

The World Health Organization (WHO) estimates there are 300 million people living with mental illness worldwide (WHO, 2017). Moreover, mental health disparities are evident in psychiatry across the globe. This includes our large urban centers in the US that bear a high burden of psychiatric illness and are stressed economically. According Substance Abuse and Mental Health Services Administration (SAMHSA) (2009), 20 to 25% of the homeless population in the US suffers from some form of chronic mental illness including a large number with depression (National Coalition for the Homeless, 2009). African-Americans are overrepresented in the homeless population and carry a higher burden of depression than the general population (National Alliance to End Homelessness, 2017). To address this problem, this project examined the impact procurement of housing had on depression scores in homeless African Americans.

Significance of Addressing the Problem

According to WHO (2017), depression is the most common mental illness affecting individuals in the US. It is estimated 16.1 million Americans (6.7%) have experienced a depressive episode and depression has surpassed physical illness in disability and disease burden (WHO, 2017). African Americans are disproportionately represented in the homeless and chronic mentally ill populations who often suffer from depression (WHO, 2017). African-American depressed homeless patients have multiple comorbidities. African American

depressed homeless patients have demonstrated pathology across physical, and mental health domains including substance abuse. Fifty four percent of African American depressed patients also report substance abuse and coexistence of a medical condition and 27% report additional mental health problems including anxiety and psychosis (Lundy, 1999).

Due to their low incomes, stigma and fluctuation of mental health symptoms, many African Americans cannot meet the demands of maintaining a household. Subsequently, many African Americans with depression are forced into homelessness.

Additionally, forty five percent of homeless persons in the US have experienced some form of mental health problem in the past year, and of that number, 31% have experienced substance abuse problems (Burt et. al, 2001). African-Americans are overrepresented in the homeless, substance abusing population as well, further contributing to housing placement difficulties (National Alliance to End Homelessness, 2017). When African-Americans are placed in housing, it is often in undesirable neighborhoods with sub-par accommodations. Unfortunately, the increased incidence of depression, substance abuse and co-morbid mental illnesses, along with social and financial vulnerability, place African American patients at much higher risk of homelessness and substandard living conditions, thereby perpetuating and exacerbating their illness burden. This then becomes a cycle that is difficult to break. Examining modifiable factors such as procurement of suitable housing may provide a first step in doing this.

Chapter 2: Background/Review of Literature

The United States Department of Housing and Urban Development (HUD) expanded the definition of homelessness through The Homeless Emergency Assistance and Rapid Transition to Housing (HEART) Act (Publ. No 111-22). It contributed to the expansion of the definition of homelessness by including the following four categories: “People who are living in a place not

meant for human habitation, in emergency shelter, in transitional housing, or are exiting an institution where they temporarily resided; People who are losing their primary night-time residence, which may include a motel or hotel or a doubled up situation, within 14 days and lack resources or support networks to remain in housing; Families with children or unaccompanied youth who are unstably housed and likely to continue in that state; and People who are fleeing or attempting to flee domestic violence, have no other residence, and lack the resources or support networks to obtain other permanent housing" (HUD, 2019). The HCO adheres to this definition as we define homelessness within our local context.

Minorities, in particular African-Americans, in the US experience homelessness at higher rates than whites (National Alliance to End Homelessness, 2019). From slavery to segregation, these longstanding discriminatory practices perpetuate disparities for African Americans in areas such as housing. Chief among these disparities is poverty. One in five (21.4) of African Americans live in poverty (2.5 times the rate of whites) (National Alliance to End Homelessness, 2019).

African-Americans with mental illness are more susceptible to homelessness than whites (National Alliance to End Homelessness, 2019). African-Americans who are homeless are 10% more likely to report mental illness than whites (National Alliance to End Homelessness, 2019). However; because of lack of health care insurance, African-Americans with mental illness such as depression are untreated. The combination of poverty, discriminatory practices, lack of access to health care, depression and homelessness trap African-Americans in a vicious cycle of hopelessness. Although there are significant gaps in the literature on African-American homeless individuals with depression, this project examined the impact the procurement of housing had on African Americans with depression.

The literature review examined the existing literature on homelessness, depression, and related factors in African Americans. Electronic databases searched in this literature review included Scopus, OVIDMedline, and PsychINFO. The search terms included "homelessness," AND "depression," AND "housing," AND "community-based," AND "urban cities" OR "underserved communities," "African-American" AND "minorities." Articles were selected if they fit the following inclusion criteria: studies were conducted during the past 20 years -this time range was selected due to the low number of studies on this topic; they addressed minority mental health including depression; they discussed mental health disparities between the African-American psychiatric patient population and the general psychiatric patient population; and social determinants of minority health were clearly stated. Each article used in this project includes information about urban homelessness, depression within a minority homeless population, the impact homelessness has on depression, and social determinants of health within the homeless population. The following exclusion criteria were established: studies were not included if they were conducted outside of the United States- this was necessary due to the specific population of interest and wide cultural differences globally; sample size was small (less than 50), the article did not consider an urban context, and the primary psychiatric focus was not depression. Initial title review was conducted, followed by abstract review of pertinent titles and finally full article review of 57 articles. Of this group, 10 final articles were chosen for inclusion. A PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart describing the review is presented in Appendix A. Full description of the 10 final articles is presented in a literature grid (see Evidence matrix, Appendix B).

Prevalence of Homelessness

The homeless population in the US increased by 0.7% between 2016 and 2017 (National Alliance to End Homelessness, 2018). Unaccompanied children and young adults (14.3%), individuals experiencing chronic homelessness (12.2%), and people experiencing unsheltered homelessness (9.4%) comprised the largest homeless groups during this time period. The number of people in families experiencing homelessness decreased by 5.2% (National Alliance to End Homelessness, 2018).

In 2017, most homeless individuals lived in some form of shelter or in transitional housing (n= 360,867) and approximately 34 percent of these individuals (n= 192,875) lived in places not intended for human habitation, e.g., the street or an abandoned building (National Alliance to End Homelessness, 2017). Single individuals made up 66.7% of all those who were homeless (n = 369,081), approximately 33.3% were people in families (n = 184,661 adults and children), roughly 7.2% were veterans (n = 40,056), and 7.4% were unaccompanied children and young adults (n = 40,799) (National Alliance to End Homelessness, 2017).

According to the U. S. Department of Housing and Urban Development (US Department of Housing and Urban Development, 2017) there are approximately 552, 830 homeless people in the US, a slight increase from 2017. With regard to homelessness burden and race/ethnicity, African-Americans make up more than 40% of the homeless population, while representing only 13% of the general population (National Alliance to End Homelessness, 2019). American Indians/Alaska Natives, Native Hawaiians and Pacific Islanders, and those of more than one race each make up less than 5% of the general population, while their homeless burden represents more than double their share of the general population (National Alliance to End Homelessness, 2019). For example, the proportion of Native Hawaiians and Pacific Islanders in the homeless

population (1.3%) is 6.5 times higher than their proportion in the general population (0.2%) (National Alliance to End Homelessness, 2019). Those identifying as Hispanic make up 18% of the general population, but 21% of the homeless population. Both Whites and Asians are significantly *under*represented among the homeless population (National Alliance to End Homelessness, 2019).

Social Correlates of Homelessness in Minority Groups

The social correlates of homelessness in depressed, African-American men are described here as they intersect and potentiate risk in this vulnerable group. They included incarceration, trans-institutionalization, discrimination, poverty, and substance abuse as it often co-morbid with depression and grounded within the high-risk social nexus of these individuals

Mass incarceration.

According to the Sentencing Project (2017), using data for those born in 2001, the US has incarcerated 2.2 million people in our jails and prisons over the past forty years. More specifically, all people of color, including African Americans, comprise 67% of the prison population, but only 37% of the U.S. general population. African-American men are more likely to be arrested than men in other ethnic groups, including Latino and white men, at rates of 1 in 3, 1 in 6, and 1 in 17, respectively (Sentencing Project, 2017). This further bolsters the narrative that minorities, in particular African Americans, are incarcerated at higher rates than the general populations. However, as cited above, this data set is limited, charting trends only for those individuals born in 2001.

Extending these trends, newer data reveal that homeless African-Americans continue to increase the population of the prison industrial complex (Bureau of Justice Statistics, 2004). In 2014, African-Americans were incarcerated at more than 5 times the rate of whites (National

Association for the Advancement of Colored People, 2018). African-Americans in a mental health crisis who encounter the police are often jailed instead of receiving medical attention (National Alliance on Mental Illness, 2018). Once inside jail, many of these individuals fail to receive adequate mental health treatment (National Alliance on Mental Illness, 2018). As a result, many of these patients are released without adequate follow-up treatment, social supports, or income and often add to recidivism rates or become homeless (National Alliance on Mental Illness, 2018).

Moreover, impoverished African-Americans are three times as likely as their non-impoverished peers, to experience psychological distress (U.S. Department of Health and Human Services Office of Minority Health 2019.) A study conducted at the University of Michigan (2017) which focused on African-American men, demonstrated that depression and psychological distress are associated with a lifetime of discrimination in this group and that they continue to face discrimination post-incarceration, thereby exacerbating their depression, and presumed co-morbid mental illnesses.

Trans-institutionalization.

From 1955 to 2000, psychiatric institutions released large numbers of individuals with serious mental illness (SMI), defined as a mental illness that causes serious functional impairment which substantially interferes with major life activities (National Institute of Mental Health, 2019) The deinstitutionalization of individuals with SMI resulted in their disposition into inadequate community-based treatments (Prins, 2011). Subsequently, there was in influx of deinstitutionalized individuals who were forced into homelessness or flooded the local, state and federal prison systems (Prins, 2011). This disproportionately affected African-Americans in early adulthood (i.e., from their 20s through 30s), who carried mental health diagnoses (Prins,

2011). According to Lamb and Weinberger (2005), from 1955 to 2000 the number of state psychiatric beds decreased from 339 per 100,000 to 22 per 100,000 (Prins, 2011). Due to the dearth of psychiatric beds, people with SMI such as depression who were previously treated in psychiatric hospitals were from that point on entering the criminal justice system (Lamb & Weinberger, 2005). This is significant for its continuing impact on the homeless crisis with respect to depressed, African Americans.

Substance abuse.

Substance abuse has long been a contributing factor to rates of homelessness in the US. The National Coalition for the Homeless (2009) estimates that 38% of homeless individuals were dependent on alcohol and 26% abused other drugs, with higher rates of illicit drug use in younger groups and higher alcohol consumption in older adults. These rates are higher than those for the general population. Specifically, of those homeless individuals included in the report, African Americans' use of illicit drugs and alcohol by individuals ages 12 and up was 12.4% compared to the national average of 10.2% (National Coalition for the Homeless, 2009). The use of illicit substances within the African-American community is associated with poor family relationships, and a compromised support system, making it difficult to meet basic needs, including housing (National Coalition for the Homeless, 2009). In 2008, a US Mayoral survey revealed that substance abuse was the single largest cause of homelessness for single adults as reported by 68% of our cities (National Coalition for the Homeless, 2009). This, along with the associated co-morbid psychiatric burden, exposes African American substance abusers to great risk for homelessness.

Discrimination.

Research shows that homeless individuals disproportionately experience rates of health problems and associated social disadvantages related to discrimination (Rosenthal et. al, 2006; Echenber & Jensen, 2009; Scutella et. al, 2002). The pervasiveness of discrimination experienced by homeless African-Americans, particularly access to housing and health care services, can lead to poor health outcomes including depression. (Phelan et. al, 1997; Lynch & Stagoll, 2002). Discrimination impacts every aspect of an individual's life such as employment status and access to core services that increase an individual's susceptibility to homelessness. (Homeless Hub, 2013).

Poverty.

Poverty is an unfortunate reality for African-Americans living in our urban centers (Pratt & Brody, 2014). Individuals living below the poverty line are twice as likely to develop depression as those in the general population (Pratt & Brody, 2014). African-Americans in these cities also have higher rates of unemployment or change jobs frequently (Pratt & Brody, 2014), often viewing social security and disability benefits as a means to support their families (Snowden, 2012). However, this form of income is insufficient to meet their household needs and many must find shelter in transitional housing or risk becoming -homeless. This frequently engenders depression-related symptoms such as helplessness and hopelessness (Bernal & Scharro-Del-Rio, 2001).

Homelessness and Health Care

Factors and characteristics, which impact health care and specifically, mental health treatment for African Americans, are important when examining the relationship between depression and homelessness in this group and include access to care as well as stigma. They are

discussed here as they address, in part, the scope of the problem as well as those underlying challenges that influence the provision of culturally sensitive, effective, and timely intervention.

In general, homeless African-Americans display distinct characteristics and experiences regarding their mental health needs and treatment (Cook et. al, 2014). For example, urban African American homeless individuals with access to mental health care often initiate psychiatric care at later stages for a variety of social and economic reasons (Cook et al. 2014). Stigma and financial stress are often cited as the reasons for treatment delays. (Cook et al., 2014). Moreover, when African-American homeless individuals delay mental health treatment, they experience higher acuity rates (Cook et al., 2014). While homeless African-Americans often struggle under the burden of housing instability and mental illness, they do show some improvement when they are in shelters where health care is provided (Schanzer et. al, 2007).

Access to care.

Homeless African-Americans often lack access to quality health care. This is a significant challenge in that access to healthcare is a clear pathway to addressing health outcomes (Henwood et. al, 2013). African-Americans in urban centers who lack access to health care facilities are forced to use unconventional methods in order to obtain mental health treatment and often present at emergency rooms (ER) in large numbers for treatment (Kohn-Wood & Hooper, 2014). The ER is a familiar environment for these patients and is often the only place in urban cities where they can access mental health care (Cook et al., 2014). For African-Americans in this situation, the ER acts the source for their primary care. ER health care providers are often the first to recognize there is a mental health problem and choose to continue seeing patients for fear patients will be lost to care otherwise (Cook et al., 2014). These health-seeking behaviors

can be costly and result in inadequate mental health treatment (Munoz & Mendelson, 2005), further compounding the problem.

Mental health care and stigma.

Many of our urban centers have sizable African-American populations who are stigmatized by homelessness and mental illness (Carpenter et al., 2010). Individuals in these communities are often demonized by their own communities and held personally accountable for their illness which is perceived as something that can be changed by the will of the individual (Carpenter et al., 2010). The biological causes of mental illness are largely ignored by their community members and organizations; instead, mentally ill homeless minorities are met with insults and are encouraged to engage in more religious practices (e.g., prayer and church attendance) (Munoz & Mendelson, 2005). African Americans are often led to believe their mental illness is due to a character defect, and they are shamed into believing that there is no escape (Munoz & Mendelson, 2005). Patients at the HCO often delay treatment due to religious and stigma related issues. Therefore, approximately 90-95% of all homeless African Americans with depression are administered some form of an anti-depressants. In addition, as housing is often perceived as being under the control of the individual, many are also blamed by the community for their homelessness (Parsall & Parsall, 2012). This sort of layered and cumulative internal discrimination, compounded by external discrimination and stressors in the greater society, leads to serious immediate and long-term health outcomes (Phelan et. al, 1997; Lynch & Stagoll, 2002).

Organization

Organizational profile.

The HCO is a Federally Qualified Health Center (FQHC) located in Washington, DC. The HCO operates twenty-two community-based and school-based health centers. The HCO's mission is "Promoting healthier communities through compassion and comprehensive health and human services, regardless of ability to pay" (XXXXX, 2017). In 2016, the HCO provided various health and human services to 106,853 patients in our nation's capital (HRSA, 2016).

Organizational analysis.

The HCO is a unified group of Federally Qualified Health Center (FQHCs). FQHCs are community-based health centers that receive funding from the Health Resources and Services Administration (HRSA, 2016). These funds are used to provide primary care to underserved communities. FQHCs must adhere to strict guidelines and provide services based on patients' ability to pay. In order to continue receiving funds, FQHCs must adhere to a strict set of quality standards, including health-screening procedures (e.g., depression and diabetes screening).

The HCO operates community health centers throughout the Washington, DC metro area. Clinical operations are centralized, so that projects maintain the HCO's mission and values. The behavioral health specialists and social workers can expand mental health services to homeless individuals and address the social determinants of health care for these vulnerable patients. Depression is one of the core quality improvement measures the HCO has adopted. Therefore, this proposed capstone project addressing depression in the homeless patient population is directly aligned with the HCO's organizational and clinical goals.

Administration. The administrative structure at the HCO consists of:

- Board of Directors,

- President and CEO,
- Chief Medical Officer and Executive Vice President (VP) for Medical Affairs,
- Executive VP for Operations and Finance,
- VP of Human Resources,
- Deputy Chief Medical Officer and
- VP for Quality Improvement, Chief of Staff,
- VP of Nursing
- VP for Information Systems,
- VP of Clinical Administration,
- VP of Planning and External Affairs,
- Deputy Chief Medical Officer
- VP for Medical Administration,
- Directors and Managers.

The Executive Management Team (EMT) recognized the importance of the project and was interested in how expediting the procurement of housing for homeless African-American impacted depression scores and other chronic illnesses (e.g., hypertension and diabetes).

Patient Population. The HCO serves low-income patients in the Washington, DC metro area. According to HRSA (2017), the number of patients receiving services from the HCO was below 200% of the poverty level. Of those individuals included in these statistics, 57.15% were Medicaid and 8.31% Medicare recipients, 12.77% were uninsured, and 10.28% were homeless (HRSA, 2017). Patient diagnoses are varied and reflect the full spectrum of

diagnoses seen across all health care settings. Approximately 12.83% of the HCO's patients are diagnosed with a mental illness (e.g., depression, schizophrenia and anxiety). Since many homeless patients with depression lack access to health care, the HCO's mental health services prove to be critical to this patient population Therefore, the HCO provides a valuable service as it offers medical and mental health resources in their communities

Project Framework

The change framework for this project is Kurt Lewin's Change Management Model that was introduced in the 1950s (Lewin, 1951). According to Lewin, change management requires a full understanding of the current environment and the necessary resources available for effective change to occur. Lewin's Change Management Model consists of three major stages: **Unfreeze, Change and Refreeze** (Lewin, 1951), Each stage contains a set of tools and challenges inherent in the change management process. These distinct stages help to manage expectations throughout the process, and to prepare for the substantial effort it takes to change a practice environment. This project, guided by Lewin's theory, examined housing and its procurement as a social determinant of mental health in homeless minority patients, specifically African-Americans. Given that African Americans are overrepresented in the chronically mentally ill, depressed, and homeless populations (WHO, 2017), it is important to link these variables in a way that is clinically meaningful and can improve outcomes on a larger scale.

Unfreezing is the initial stage in Lewin's Change Management Model. To implement a socially contextual depression intervention for homeless minorities in urban cities, you must first understand the environment and identify why a change is necessary. If the reason for change is not considered, the need for change is not clearly and distinctly highlighted, thus limiting motivation to move the project through the change process (Lewin, 1951). Unfreezing begins

when clinicians, for example, acknowledge that there is undo stress and chaos within the current structure leading to dissatisfaction with a certain practice, policy or operation. This line of thinking disrupts the status quo and starts to move the organization toward a change. To successfully unfreeze an organization, core beliefs must be examined and status quo operations re-evaluated. To do this, it is helpful to articulate the limitations or negative impact of the status quo on the mission and values of the organization (e.g., low patient satisfaction and poor mental health outcomes). It is also important to have a change narrative that is compelling—otherwise there can be substantial resistance to change and a natural effort to maintain the status quo. The downstream question for this project relative to unfreezing is "Will improving the current workflow and procedures for housing procurement for depressed, homeless African American patients positively impact their depression outcomes?"

Once the unfreezing stage disrupts the equilibrium, the organization enters the change or moving stage in which there is a willingness to acknowledge the impact of a proposed change. Lewin believes there are two key factors during the change phase: time and communication (Lewin, 1951). Time allows for people to understand the proposed change. During this phase of the project, this author discussed the pilot program with the primary stakeholders. The goal of this communication highlighted the inefficiencies of the current process of how we procure housing for African Americans with depression. The specifics of the pilot program and the communication with the primary stakeholders addressed more comprehensively in the methods section.

Once the change is implemented refreezing is necessary. The refreezing phase provides an opportunity to solidify the new change and lay the foundation for any future initiatives. Refreezing also allows for the change to become institutionalized as part of the day-to-day

operations. The pilot program was implemented as the new process of how the HCO procured housing for African American with depression. The individual stakeholders had a clear understanding of the change in clinical workflow and understand their roles and responsibilities. With a new sense of comfort, the goal was for the stakeholders to achieve a new clinical equilibrium**.** This was discussed in more detail in the methods section.

Goal and Aims of the Project

Depression is the leading cause of disability in the United States (WHO, 2017). Unfortunately, African American homeless individuals in the US have some of the highest rates of depression and experience disparities in utilization and access to health care (WHO, 2017). This project examined the association between the procurement of housing for urban, homeless African American patients and depression.

Objectives/Aims. The general aim of this project was to assess the impact of housing on depression in urban, African American homeless patients. Specifically, this DNP project assessed the association between procurement of housing and depression scores as measured by the PHQ 9 in a group of depressed, African-American, homeless patients. Using this data, a pilot project to improve practices for housing procurement in this population was tested in the HCO, a large urban health care center with linkages to municipal housing agencies. First, information was gathered on depression in homeless and non-homeless African-American patients. Comparisons between housed and non-housed homeless patients were conducted. Following this and based on these findings, a protocol was tested to 1) systematize and streamline procedures for housing arrangements in highly vulnerable African-American depressed patients with potential for establishment as a model program and future adaptation for all other depressed, at risk groups served by the HCO and similar organizations; and 2) assess the impact of housing

placement on depression in homeless African-American patients. In this way the project addressed an important social determinant of health and increased the well-being of this highly vulnerable group

The specific aims for this project were:

Aim 1.

To collect data on prevalence and severity of depression, as measured by clinical DSM designation and scores on the PHQ-9, in the depressed African-American patient population at the HCO as they relate to housing status.

a) To gather data on the number of African-American adult patients at the HCO receiving a depression diagnosis and to compare PHQ 9 scores of depressed homeless African American patients with scores for those depressed African-American patients who were never homeless.
b) To compare depression scores among homeless patients at the HCO who receive housing versus those who do not.

Aim 2.

To pilot a program to improve workflow and efficiency, and institute agency wide best practices to address depression screening and rapid housing placement for depressed, vulnerable homeless African American patients at the HCO centers throughout Washington DC.

Chapter 3
Methods

Description and Approaches to Aims

This DNP project examined how housing impacts depression in a minority urban homeless population. The specific question was whether housing procurement is associated with

depression scores as measured by the PHQ-9 in homeless, depressed African-American patients. An additional focus was the development and pilot testing of a best practices protocol to ensure timely housing placement in this population. Information was gathered to clarify the profile of this group compared to housed individuals and to inform further work in this area.

Aim 1.

Data was collected on prevalence and severity of depression, as defined by DSM 5 criteria and scores on the PHQ-9 in the homeless African-American patient population at the HCO as they relate to housing status (see Table 1 – Appendix C).

a) Data was gathered on the number of patients at the HCO receiving a depression diagnosis and compared PHQ 9 scores of depressed, homeless African-American patients with scores for those depressed, African American patients who were never homeless.

The HCO database E-Clinical Works (ECW) was used to identify homeless and never-homeless African-American adult patients with a major depression diagnosis and PHQ-9 scores of ≥ 5. The diagnostic information was embedded within the HCO's HIPPA compliant Electronic Medical Record (EMR). Descriptive as well as bivariate non- parametric statistics were employed (frequency counts mean scores; Mann Whitney U for comparison of PHQ 9 scores using depression scores as a continuous variable).

b) Comparison of depression scores among depressed, homeless African-American patients at the HCO who received housing versus those who do not was conducted.

Hypothesis 1: Depressed homeless African-American patients who received housing (H grp.) during the pilot will evidence significantly lower depression scores when compared with those who do not receive housing (Hg).

A sample of 42 homeless HCO patients were assessed for this aim (17 housed; 25 non-housed). PHQ-9 scores were examined from July to December 2019. Both descriptive (mean scores) and bivariate non-parametric statistics were employed as the sample sizes were small, measurement was ordinal, and the distribution of scores were not assumed to be normal. The Mann Whitney U test was used to compare scores between housed and never homeless patients. Again, diagnostic and enrollment information was accessed through the E-Clinical Works (ECW) database.

Aim 2.

A pilot program was implemented to improve workflow and efficiency, and to institute agency wide best practices to address depression screening and rapid housing placement for depressed, vulnerable homeless African-American patients at the HCO centers throughout Washington DC (Pilot Workflow, Figure 1; and Outline of Pilot Procedures and Materials, Appendix D).

The pilot program aimed to efficiently connect depressed, homeless African-Americans to housing agencies within the District of Columbia and procure housing in a timely fashion, thereby improving clinical status and outcomes. The pilot was developed to connect the HCO's depressed homeless patients to housing via a systematic protocol that can be tracked and examined for quality improvement. For this pilot, all participants

were African-American patients who meet DSM 5 criteria for MDD, have a positive PHQ-9 screen (score of 5 or higher), and had a score of 8 or more on the "vulnerability" screening tool, the Vulnerability Index-Service Prioritization Decision Assistance Tool (VI-SPDAT). The VI-SPDAT is fully described below. Results for this pilot highlighted areas for improvement or change that can then be incorporated into agency practices by increasing efficiency and targeting this highly vulnerable group of patients.

The pilot will included 42 homeless African-American patients who had a psychiatric intake at the HCO. First, Medical Assistants (MAs) at the HCO administered the PHQ-9 to all homeless African-Americans during the initial medical intake process. Following this psychiatric evaluation, all homeless patients who received a clinical diagnosis of depression and met inclusion criteria for the project were eligible for housing through The Community Partnership (TCP) and linked with a case manager. The case managers met with each patient to ensure a Vulnerability Index-Service Prioritization Decision Assistance Tool (VI-SPDAT) score was recorded. The scoring for the VI-SPDAT is based on the following results: (0-3-no housing intervention); (4-7 – an assessment for Rapid Re-Housing); and ($\geq$8-an assessment for Permanent Supportive Housing/Housing First) (VI-SPDAT, 2015). Once the VI-SPDAT was verified or completed for the most vulnerable homeless African-Americans participants with depression, these individuals were linked to The Community Partnership for the Prevention of Homelessness (TCP) through an interagency database called Homeless Management Information Systems (HMIS). TCP is a non-profit organization that coordinates the District of Columbia's Continuum of Care. Through the Continuum of Care program, homeless individuals receive preventative services, emergency shelter, and

transitional and permanent supportive housing. (The Community Partnership for the Prevention of Homelessness, 2018). Participants in the pilot program continued working with their case managers until housing was secured. While the overall goal is for every homeless patient at the HCO to receive housing at some point in time, The VI-SPDAT tool was used in this project to identify those most vulnerable patients meeting criteria for immediate housing and inclusion in the pilot. Specifically, the focus was on efficient procurement housing for this highest risk patient group evidencing clinical depression as well as multiple vulnerabilities based on the VI-SPDATE tool.

The PHQ 9 was utilized with all patients in the pilot program to determine a baseline measure for subsequent assessments of changes in depression status. All steps outlined here were documented in a brief instruction manual before piloting. As a continuous quality improvement measure, a refresher training on the PHQ 9 and the VI-SPFAT tool was conducted by agency health care administrators/trainers for all MAs and project case managers. This author monitored the implementation, workflow activities, duration of time to housing and follow up. Monthly update meetings between the author and all clinical and staff personnel involved in the project were held and documented. Documentation allowed for timely examination of fidelity to the procedures.

Program evaluation included clinical outcome data on depression as discussed in Aim 1. Additionally, brief surveys of clinicians, and case managers (see Appendices E & F) were employed to assess their impression of the program and its impact as well as to make further recommendations regarding improvements and efficiencies to be considered both within the HCO and in the connection protocol with DC housing agencies. Descriptive data were provided for these findings. Information from this “Homeless Pilot

Project" will be presented by the author at a HCO Executive Management Team (EMT) meeting. All data collected for the homeless patient participants is stored in the HCO's (ECW) EMR, a HIPAA compliant system.

Sample

Convenience sampling was used for this project among the target population of interest. A clinical sample of 42 homeless the HCO's patients were accessed by agency clinicians and were comprised of African-American men and women between the ages of 18-65 years of age who were English speaking, received a DSM diagnosis of MDD and had PHQ-9 scores of ≥ 10 (the cut-off point for a diagnosis of mild to moderate depression). Exclusion criteria included individuals outside of the age range of 18-65, were non-African-American, non-English speaking, and had scores less than 5 on the PHQ 9. Depressed, African American patients who were designated "never-homeless" (no episodes of homeless at any point in their adult lives) served as a comparison group for the project sample in Aim 1a.

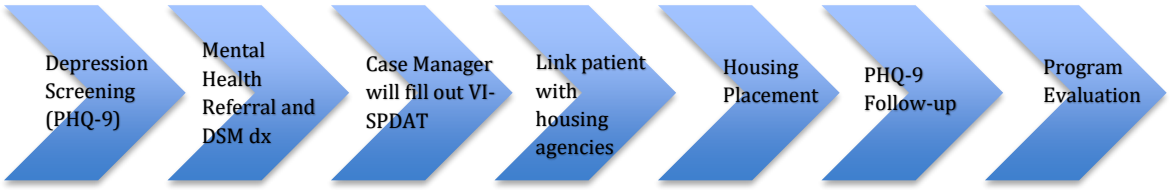
Measures

The PHQ-9 is a tool used for screening, diagnosing, monitoring and measuring the severity of depression (Kroenke, Spitzer & Williams, 2001). The PHQ-9 diagnostic validity was established in studies involving 8 primary care and 7 obstetrical clinics (Kroenek, Spitzer & Williams, 2001). PHQ-9 scores ≥ 10 in these studies had high sensitivity (88%) and specificity (88%) for major depression. (Kroenke, Spitzer & Williams, 2001). The PHQ-9 scales completed at initial psychiatric assessment are calculated using the standard PHQ-9 scoring criteria for designation of major depression (0-4 –none; 5-9; mild, 10-14-moderate, 15-19-severe). PHQ-9 scores of 5 or greater are used to indicate depression and correlate with the following DSM symptoms: having little interest in doing things or feeling down depressed or hopeless at any

time in the preceding 2 weeks and have 5 or more depression symptoms that occur more than half of the days or nearly every day.

The Vulnerability Index-Service Prioritization Decision Assistance Tool (VI-SPDAT) (VI-SPDAT, 2015) is a survey administered to individuals and families to determine prioritization of assistance with housing. VI-SPDAT is the standardized tool recommended by The United States Department of Housing and Urban Development (HUD) to its validity and reliability (Bitfocus, 2018). The combination of VI and SPDAT creates a highly valid tool that accurately pinpoints housing needs (Bitfocus, 2018). The reliability of this tool is based on its use in several states such as California, Louisiana, Michigan and Alberta (Bitfocus, 2018). The V I-SPDAT scoring is based on the following domains: History of Housing and Homelessness, Risks, Socialization and Daily Functions, and Wellness. A score of 8+ is a positive assessment for need for Permanent Supportive Housing/Housing First.

Figure 1. Pilot Workflow



Evaluation/Analytical Plan

Descriptive statistics (frequency counts, mean, median, mode) was used to examine categorical as well as continuous depression scores among depressed, homeless African-Americans versus the never- homeless, depressed African American patient population at the HCO. Depression was measured as a categorical variable with respect to DSM 5 designation –

"depressed" (MDD) or "not depressed" and as a continuous variable using PHQ 9 scores to compare severity among depressed African-American patients who are homeless vs those who were never homeless.

The Mann Whitney U test was used to compare PHQ 9 scores in depressed homeless-individuals versus depressed individuals who had never been homeless. The IBM SPSS statistical program version 25 (IBM, 2019) was used to analyze data in Aim 1. The pilot project was described in Aim 2. Dr. Catherine Crosland, the Medical Director for Homeless Outreach, aided the author in securing homeless participants' data in the project (see Appendix C).

The pilot workflow project was evaluated in the following steps as outlined previously: 1) clinical outcome data on depression was analyzed as described in Aim 1, 2) brief open ended questionnaires of, clinicians and case managers were administered to assess a) their impression of the program, b) its impact, c) to make further recommendations regarding improvements and efficiencies to be considered both within the HCO and in the connection protocol with DC housing agencies. The evaluation of project impact on depression was described in the variables and analysis table. The evaluation of the project itself and its feasibility were evaluated on an ongoing basis in regular meetings where documentation was reviewed and the project manager gave report as well as post project questionnaires. Findings from this "Homeless Pilot Study" project were disseminated in presentations by the author monthly to the HCO stakeholders and project sponsors. All data collected for the homeless patient participants were stored in the HCO's EMR, a HIPAA compliant system (see Figure 1 as well as Pilot Procedures and Materials for Pilot Project, Appendix C).

Human Subjects

Following review by Yale University's Internal Review Board (IRB) it was determined that this DNP project meets criteria for a Quality Improvement protocol, the HCO does not have an internal IRB, but accepted Yale IRB determination. All data is stored in the encrypted, secure ECW database, which is HIPAA compliant. Members of the patient's clinical team and the QI Director have access to these clinical records. Individual patient records will not be accessed by the investigator for this project – all data will be gathered by the clinical staff and analyzed in the aggregate. All reports from this project will include results in the aggregate only.

How the DNP Project Relates to Leadership Immersion

This DNP project improved the understanding of how social determinants of health, in this case housing, and their modification, change mental health outcomes for homeless African-Americans. Leadership requires the individual to think of themselves as both the leader and steward in terms of how we manage assets, momentum, relationships, effectiveness and values (DePree, 2004). One of the Essentials of DNP Education is Organizational and Systems Leadership for Quality Improvement. This DNP project addressed this important essential in aiming to improve clinical workflow with regard to procurement of housing for homeless, depressed African-Americans. It is through key leadership activities and rigorous implementation in a large urban healthcare system that this DNP project moves systems toward change in organizational policies and practices around housing procurement for one of our highest risk groups in the mental health care sector.

The immersion took place at a community-based health center, a HCO clinic that provides health care for this homeless population. Dr. XXXXX, the Medical Director for Homeless Outreach, aided the author in securing homeless participants' data in the project.

Immersion Plan

This immersion plan included the following:

I. Review of ECW database conducted by agency staff to:

1) Identify homeless and never homeless African-American patients with a major depression diagnosis

2) compare depression rates in these groups and to further compare rates within and between housed and non-housed homeless groups to assess the impact of housing on their depression;

II. Conduct a pilot project to more efficiently connect depressed, homeless African-Americans to housing agencies within Washington DC with the aim of improving clinical status and outcomes.

III. Dissemination: An abstract from this study will be submitted to The Journal of Community Health, local homeless taskforces, and other groups interested in the care of vulnerable populations in Washington DC and surrounding areas. The author will also submit an abstract to the Eastern Nursing Research Society annual conference (ENRS) and at least one other relevant professional conference (e.g., – YNHH DNP Conference, APNA). Findings will be presented internally at the HCO as described previously. (see Aim 2)

Chapter 4

Results

A total of 67 African-American depressed patients were included in the data gathered for The HCO Homeless Pilot quality improvement project; (never homeless (NH) N=25), (homeless never housed (Hg) N=25) and (homeless matched to housing (Hgrp) N=17). The Mann-Whitney

U Test (Mann U) was used to analyze the data on the PHQ-9 scores of depressed homeless African American (AA) patients at the HCO versus PHQ-9 scores for depressed African American patient at the HCO who were never homeless.

There were no significant differences between homeless and never homeless groups on depression scores for the Mann Whitney (see Table 1). However, visual analysis of the descriptive statistics showed distinctly lowerPHQ-9 scores in the housed homeless group compared with those who were homeless and never housed and the never homeless depressed group (see Table 2). This is an interesting trend and requires further examination with a larger group of patients to determine robustness and of so, what factors may be at play.

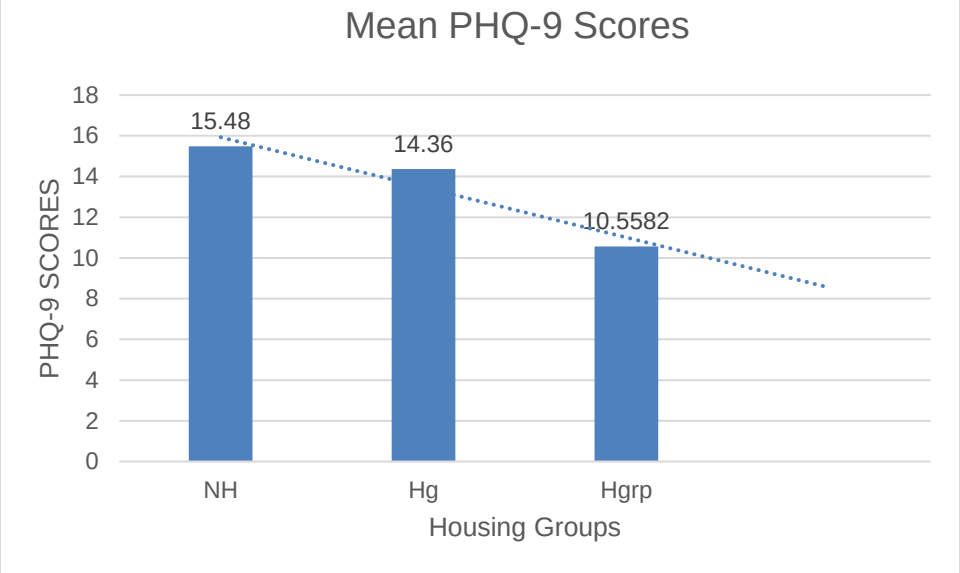
Table 1. *Mann-Whitney Test for Depressed patients:*

Groups on Depression	Mann Whitney statistic	Significance (2 tailed test)
Homeless vs Never homeless	269.5	.401

Table 2*. Descriptive Statistics for Depression scores: Never Homeless (NH), Homeless (Hg) and Homeless Housed (Hgrp)*

Groups	**N**	**PHQ 9 Scores**			**Standard Deviation**	**Sex/Gender**
		Mean	Median	Mode		
NH	25	15.48	14	14	4.13441	Female (n=17); 68% Male (n=8); 32%
Hg	25	14.36	14	10	3.36269	Female (n=9); 36% Male (n=16); 64%
Hgrp	17	10.5882	9	6	4.91247	Female (n=2); 11.8% Male (n=16); 64%

Figure 2. *Mean PHQ-9 Scores Trend Analysis*



Chapter 5
Discussion and conclusions

Discussion

The Homeless Pilot Program was a quality improvement program designed to use organization data combined with an interdisciplinary approach to securing housing for depressed homeless African Americans. It was designed to lower the barrier to homelessness for African-Americans with depression—while simultaneously addressing one of the most significant social determinants of health. This QI project was implemented within a patient-centered medical home model. Subsequently, all members of the health care team had a vested interest in securing housing for the patients.

The results of this DNP project addressed a significant gap in interagency services for homeless African American depressed patients living in our large urban centers. The District of Columbia Mayor's Office developed the Interagency Council on Homelessness to advance an agenda to assist homeless individuals with serious mental illnesses, substance abuse and physical disabilities (Culhane & Byrne, 2010). The Interagency Council on Homelessness recognizes

these multiple chronic conditions hinder individuals from existing homelessness and an interagency solution is necessary. Many of the permeant supportive housing programs view these multiple chronic conditions as obstacles that need to be addressed before one is ready for housing (Culhane & Byrne, 2010).

The pilot program also advocates for a non-linear model of supportive services for permanent housing solutions, underscoring the importance of an interdisciplinary and interagency approach to procuring housing for homeless depressed African Americans in large urban centers. With respect to resourcing such a program, the case manager role was crucial in bridging the communication gap between the HCO and TCP through attendance at bi-weekly housing meetings. The case manager's participation in the TCP meetings allowed for the HCO to track all patients who were matched to housing in real time. Prior to the addition of the case manager role in this QI project, many homeless, depressed African American patients who were matched to housing were either never notified or the notification was delayed for months. This quality improvement intervention insured thorough systems monitoring of the housing procurement workflow process, thus enabling significantly improved housing placement for these most vulnerable clients.

Homelessness continues to be a nationwide epidemic for large urban centers. With the dearth of affordable housing units due to widespread gentrification, homeless African Americans with depression in large urban centers find it cumbersome to secure permanent housing. Organizations such as The Community Partnership are federally funded organization designed to match homeless individuals to available housing unit. The process of matching homeless individuals to housing is multi-determined. This pilot program identified the gaps in interagency

processes by improving current clinical workflow and best practices—benefiting African American depressed homeless patients.

The sample size of the individuals who were matched to housing was small, precluding any statistical conclusions regarding differences in depressed groups with respect to housing status. However, there was a clear descriptive trend toward improved depression scores in depressed homeless patients who received housing in this pilot project. Future work with a larger sample size needs to be conducted to further determine the impact housing has on depression for homeless individuals. The pilot program also identified a gap in interagency communication and municipal data gathering. While the original intent was to have a pre and post PHQ-9 assessment completed for individuals in matching to housing group, this didn't occur as planned. Upon review, this was primarily due to interagency gaps in communication which are modifiable and currently being addressed as a multi-organizational improvement initiative. In this way the pilot was highly valuable to the continuous quality improvement of the municipal interagency process.

Conclusion

African Americans are disproportionately represented within the homeless and mental illness populations. A major social determinant of health care is housing. Within the US, African American still lag behind the general population when it comes to health related outcomes. This homeless pilot program demonstrates with appropriate housing, African-Americans can achieve better health outcomes. The particular interest of this pilot program was placed on depression. The World Health Organization has identified depression as the number one disease burden leading to disability. Addressing homelessness in depressed African-American improves the overall health of the individuals and the communities in which they exist.

African-Americans with depression who are homeless are often forced into a one-size fits all approach to housing and mental health treatment. This pilot program demonstrated that a tailored approach is necessary to the achievement of maximum health outcomes. Many African-Americans have been victims of systemic racism, discrimination, mass incarceration, poverty and lack of appropriate health care. Therefore, homelessness is a natural progression for African-Americans who have been diagnosed with depression. The hopelessness often accompanied by depression alone can be a predictor of homelessness. Subsequently, a collaborative and integrated care model to address health outcomes is warranted. The Homeless Pilot program is just the initial phase of addressing social determinants of health care of marginalized communities such as African-Americans. This cohort will be used at the HCO to determine the impact housing has on other medical complexities such as diabetes and hypertension outcomes.

Future work

Homelessness is a preventable phenomenon in the US. However, the primary solutions have been government lead. Nurse leaders can have a profound impact in moving policy and advocacy efforts forward for African-Americans and other marginalized communities at risk for poor health outcomes. Nurse leaders are equipped to implement system level changes to include primary prevention methods. Those primary prevention methods include but are not limited to: legislation and enforcement of fair housing practices in large urban centers, work to advance criminal justice reform, and the promotion of and education about the early warning signs of mental health mental health. This collaborative care approach to patient-centered care can be employed in the management of diabetes, hypertension and other debilitating diseases disproportionately affecting the African-American community.

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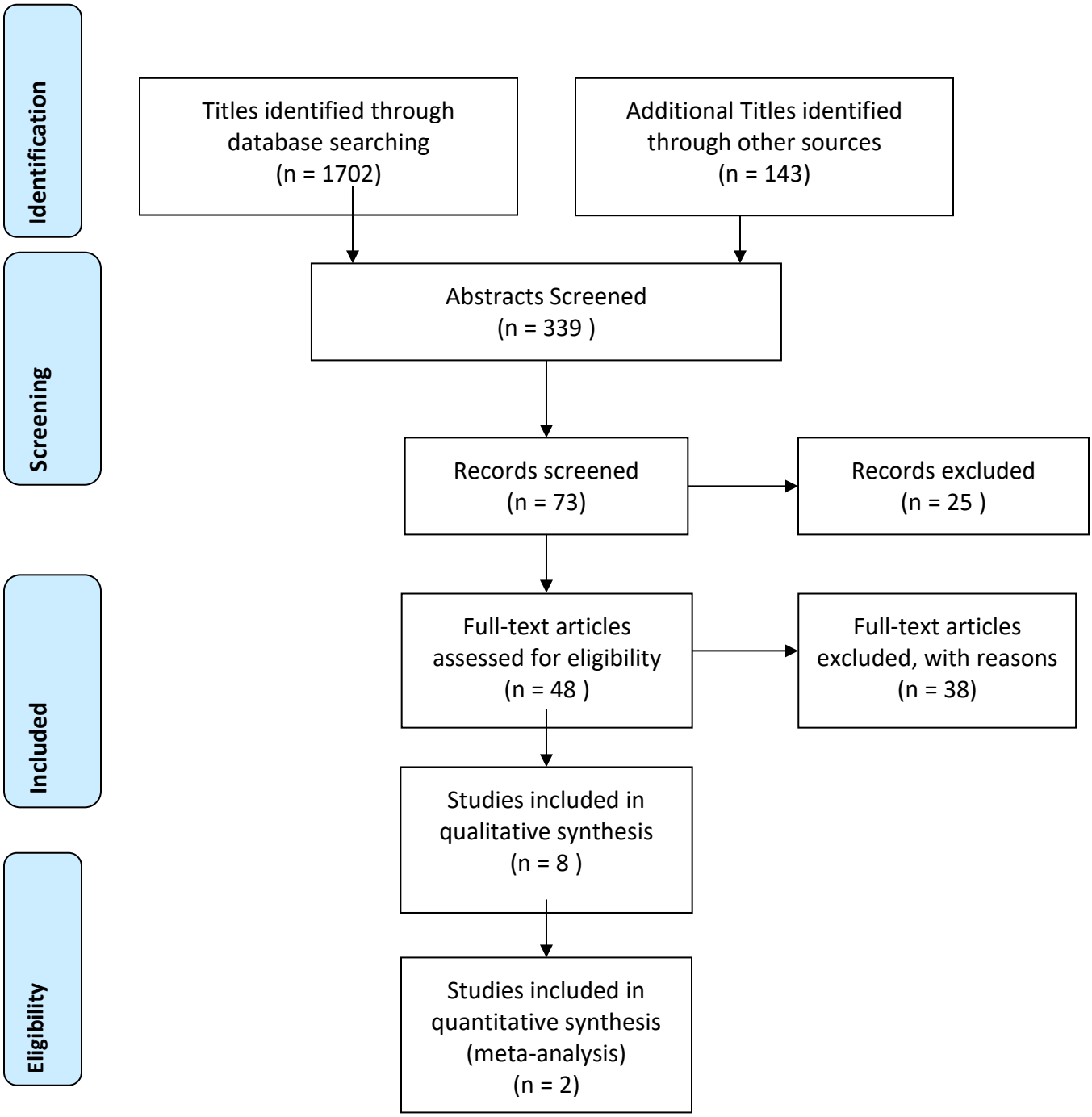
APPENDIX A
PRISMA FLOW CHART



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APPENDIX B
Evidence Matrix
The impact of procurement of housing on depression in homeless African-Americans

Source	Title	Aims	Participants	Type of Study	Homelessness	Depression/ Mental Health	Minority Populations/ African American	Outcomes	Limitations
Cook, B. L., Zuvekas, S. H., Carson, N., Wayne, G. F., Vesper, A., & McGuire, T. G. (2014).	Assessing racial/ethnic disparities in treatment across episodes of mental health care	To investigate disparities in mental health care episodes, aligning our analyses with decisions to start or drop treatment, and choices made during treatment.	White, Blacks and Latino with probable mental illness	The authors used "Panels 9–13 of the Medical Expenditure Panel Survey, assessing disparities at the beginning, middle, and end of episodes of care (initiation, adequate care, having an episode with only psychotropic drug fills, intensity of care, the mixture of primary care provider	Homelessness was not directly measured by this study. However, housing was measured on a region basis. Housing rates for African Americans were significantly lower than whites in this study.	Participants were determined to have mental health treatment "if they scored 2 on the PHQ-2; greater than 12 on the K6 survey (indicating nonspecific psychological distress)"(p.209)	Disparities may be attributed to African Americans accessing care in primary care settings, ER or acute care settings (p.208) Minorities initiate care at later stages of illness than do whites. Thus, increasing the risks of exacerbation of symptoms (p.209). Primary care providers may be under	1.Blacks and Latinos less likely than whites to initiate care 2). They both received inadequate care. 3) Blacks were significantly more likely to have an episode of care with a psychiatric ER or IP visit and Latinos had episodes with significantly fewer days. 4). There were no significant differences in the number	Utilization behaviors cannot be fully recognized because of the short time period of data gathering (2 years); Because they couldn't adequately capture the timing of the treatment, disparities could be attributed to overuse of mental health care and underuse by minorities;

				(PCP) and specialist visits, use of acute psychiatric care, and termination" (p.209)			diagnosing mental illness in minority patients; treatment periods may be longer because they have entered the healthcare system later	of mental health episodes between blacks and Latinos (p. 214)	structured mental health assessment tools might find more individuals with mental illness (p.222)
Kohn-Wood, L. & Hooper, L. (2014).	Cultural competency, culturally tailored care, and the primary care setting: Possible solutions to reduce racial/ethnic disparities in mental health care.	To provide preliminary evidence for reducing racial and ethnic disparities in mental health treatment in primary care settings	N/A	Literature Review	Gap in literature. Does not directly address homeless and social determinants of health care as an area of competency for African American homeless	"8,000 nationally representative individuals with depressive disorders, about 40% of non-Hispanic White patients had not received treatment, compared to about 59% of Black American, 64% of Latino American, and 69% of Asian American	Mental illness is in part a cultural experience. This has an impact on: how patient conceptualized mental illness, how they seek help and their response to treatment	Implications for practice: a). providers who possess cultural competency and willing to provide tailored care can change health-seeking behaviors of minority mental health patients b). Multidisciplinary teams are most effective c.) psychiatric providers should be	Review did not spend a significant time discussing the objective barriers of treatment (e.g., language, access) and subjective barriers (e.g., beliefs about mental illness and treatment)

						patients (Alegría et al, 2008)"(		situated within primary care settings)	
Henwood, B. F., Cabassa, L. J., Craig, C. M., & Padgett, D. K. (2013).	*Permanent supportive housing: addressing homelessness and health disparities?*.	To use Mental Health Telemetry (MHT) to record daily changes after add-on Queitapine XR was added to patient's regimen who did not respond to anti-depressants alone	Homeless individuals from various cultural backgrounds	Longitudinal Study started by the Robert Wood Johnson Foundation in 1985	Permanent supportive housing (PSH) is an intervention to address long-term homelessness. Evidence has resulted in a shift in US policy toward using PSH rather than shelters and transitional housing.	Homelessness has been related to infectious and chronic disease, injuries, poor nutrition, asthma, neurologic damage and mental disorders	Overall paucity of resources in neighborhoods of lower socioeconomic status, or "neighborhood deprivation," has also been shown to impede engagement in health behaviors. These health-seeking behaviors disportionately affect African Americans.	Research shows the e impact of stigma, discrimination, and mental health symptoms on the physical activity and diet of those who have transitioned from homelessness to PSH. Permanent housing is a better long-term solution for people with mental illness than shelters.	One of the limitations of research on PSH, however, is that it often overlooks the impact of place and environment. Limited research regarding location has focused on how PSH affects property values (they increase)45 and crime rates (they do not change).

National Alliance to End Homelessness, (2019)	Racial Inequalities in Homelessness by the numbers	To demonstrate the disparities between African American and other minorities than White	N/A	A Research Report	Most minority groups in the United States experience homelessness at higher rates than Whites, and therefore make up a disproportionate share of the homeless population.	This report does not mention depression or mental illness directly. The usefulness of this report was to demonstrate how African Americans disproportionately experience homelessness. This demonstrates another gap in the literature	African Americans make up 13%t of the general population, but more than 40 percent of the homeless population. American Indians/Alaska Natives, Native Hawaiians and Pacific Islanders, and people who identify as two or more races make up a disproportionate share of the homeless population.	Racial and ethnic disparities in homelessness are not improving significantly over time. African Americans currently make up the largest share of all people who access shelter over the course of a given year, and their share has increased in recent years, while the share for Whites has declined.	N/A

Prins, S. (2011).	Does trans-institutional-ization explain the overrepresentation of people with serious mental illness in the criminal justice system.	Though researchers disagree about the trans-institutional-ization hypothesis and potential solutions to the problem, there is broad consensus that people with SMI are overrepresented in the criminal justice system and that correctional facilities are not ideal treatment settings (Council of State Governments 2002)	N/A	Research article	A stable place to live for these individuals may improve incarceration rates	individuals with depression and other serious mental illnesses (SMI) are overly represented in the prison system	This disproportionately impacts African Americans with depression and other petty crime related issues.	For the majority of this group, the key to staying out of hospitals, jails, and prisons may be a place to live, a job or some income support, a meaningful relationship or social network, quality healthcare, or linkage to treatment instead of frequent arrest for substance use disorders—fundamental needs that can best be redressed in the community, not psychiatric or correctional institutions.	N/A

Carpenter, S. E, Chu, E., Drake, R.E., Ritsema, M., Smith, B., & Alverson, H. (2010).	Ethno-cultural variations in experience and meaning of mental illness and treatment: Implications for access and utilization, 906	To examine how individuals diagnosed with severe mental illness understand mental health problems and respond to engagement with mental health services	25 participants; Latino (n=10), Euro-American (n=9) and African-American (n=6)	Ethnographic Study	Limitation; homelessness was not a measurement for this study	Among "African-American participants, explanations of or problems included supernatural or demonological forces" African-Americans (AA)…participants feared ridicule, disparagement, and even retaliation on account of mental illness "African-American participants voiced frustration with what they perceived as a narrow focus on medications	African-American and Latino participants' problems including manifestations of mental illness, were viewed as interpersonal, with moral and material consequences for which participants could be held accountable according to local norms and family conduct. (p. 237)." African-American families, for example it was not uncommon to have family members accuse participants of having character	Stigma was a prominent theme in the narrative accounts of AA families. Serious mental illness (SMI) was considered by AA participants and their families to constitute "family business"…such information was to remain private (p. 244). SMI and clinical treatment in AA exposed them to social rejection (p.244). Substantial disconnect between AA participants and health	Small sample size; only n=6 for AA participants

							flaws, such as "laziness".	care providers (p. 244). Demonstrated individuals have "culturally informed" ways of understanding mental illness	

Fazel S, Khosla V, Doll H, Geddes J (2008)	The Prevalence of mental disorders among the homeless in Western Countries: systematic review and meta-regression analysis	To explore attitudes toward the use of mobile phones in monitoring patient with mental health issues	The author searched for surveys of the prevalence of psychotic illness, major depression, alcohol and drug dependence, and personality disorder that were based on interviews of samples of unselected homeless people. 29 surveys were included in the review.	Systematic Review and meta-regression	About 38000 people in the UK and 740000 people in the US identified as being homeless at any given time.	The prevalence of depression in this review, with a pooled prevalence estimate of 11.4% (95% CI 8.4%–14.4%), range at 0% to 41%, was lower than expected. Many estimates included in the review were similar to community estimates of depression in women (which range from 7% to 11% for 1-y estimates), and only slightly higher than general population rates for men [62,72].	No mention of African-Americans were included in this study. Identifies a gap in the literatures.	Homeless people in Western countries are substantially more likely to have alcohol and drug dependence than the age-matched general population in those countries, and the prevalence of psychotic illnesses and personality disorders are higher	With many millions of individuals being homeless in Western countries, current mental health provision may need review, and models of psychiatric and social care that can best meet the burden of mental illness will need further investigation.

National Institute of Mental Health (2019)	Mental Illness	To outlines prevalence of mental illness in the US	Individuals from across the lifespan	Research Article	This measure was not included in the article	Mental illnesses are common in the United States. Nearly one in five U.S. adults live with a mental illness (46.6 million in 2017). Mental illnesses include many different conditions that vary in degree of severity, ranging from mild to moderate to severe.	Depression and mental illness was more prevalent among African Americans and	In 2017, it was estimated 11.2 m adults aged 18 or older in the US with SMI. Approximately 4.5% of all U.S. adults. Higher among women (5.7%) than men (3.3%). Young adults aged 18-25 years had the highest prevalence of SMI (7.5%) compared to adults aged 26-49 years (5.6%) and aged 50 and older (2.7%). The prevalence of SMI was highest among the adults reporting two	N/A

								or more races (8.1%), followed by White adults (5.2%). The prevalence of SMI was lowest among Asian adults (2.4%).	
Miranda, J., Duan, N., Sherbourne, C., Schoenbaum, M., Lagomasino, I., Jackson-Triche, M., & Wells, K. B. (2003).	Improving care for minorities: Can quality improvement interventions improve care and outcomes for depressed minorities? Results of a randomized, controlled trial.	Determine if a practice-centered quality improvement (QI) intervention will decrease incidents of depression and reduce disparities in minority patients	398 Latinos, 93 African-Americans, 778 White patients with probable depressive disorders	Randomized Controlled Trail (RTC)	Gap in literature; homelessness was not a variable for this study.	Participants had to meet criteria for depression the previous six months; A six-month QI intervention of depressed minority patients was conducted	QI interventions could reduce depressive symptoms for African American patient without major policy changes in the primary care setting	QI interventions like medication management or psychotherapy can reduced depression in African-American patients	The attrition rate was high in the study; the sample size for African-Americans was small; QI interventions decrease probable depressive symptoms in minorities but not employment outcomes (whites only)

Bernal, G., & Scharró-Del-Río, M. R. (2001).	Are empirically supported treatments valid for ethnic minorities? Toward an alternative approach for treatment research.	To determine if empirical supported treatments (ESTs) are appropriate for minority patients	N/A	A Research Report	Gap in literature; homelessness was not mentioned in this study.	There are disparities in how minorities use mental health care across ethnic, cultural, and racial communities (p.332)	Minorities comprise over 50% of us population. An understanding of how discrimination, socioeconomic status and community resources impact mental health outcomes for African Americans	Re-conceptualize knowledge about integrative approaches to psychiatric care for AAs b.) Focus efforts on specific ethnic minority groups rather than a comparative approach c.) Explore the literature for the role ethnicity plays in therapeutic conditions, operations and outcomes	ESTs often eliminate cultural, historical and other contextual factors ; lack of focus on specific minority groups ('no one-size fits all);develop instruments with minority groups in mind

Appendix C

Table 1. Aim 1: Variables, Measures, Participants, Analyses

Aim 1, Sub-aims & Hypotheses	Variables of interest	Measurement/ Assessment	Sample characteristics/ Target participant group	Analyses
AIM 1: Collect data on prevalence & severity of depression, in the homeless African American patient population at the HCO as they relate to housing status.	1)Depression 2)Homelessness	DSM 5 Dx- Depressed Not Depressed PHQ 9 scores	Homeless African American population	Descriptive statistics: Freq on DSM; Mean, median, mode (PHQ9)
a) Gather data on # of patients at the HCO receiving a depression dx and compare PHQ 9 scores of with those for never homeless patients.	1)Depression: Severity 2)Homelessness/ Housing status	PHQ 9 scores ≥5 Designation at Intake	All depressed AA patients at the HCO: Homeless at intake(HI) Never homeless (NH)	Descriptive stats: Freq for DSM designation, mean, median, mode(PHQ9) Mann Whitney U test to compare HI and NH groups ($\alpha \leq .05$)
b) To compare depression scores among depressed homeless African American patients at the HCO who receive housing versus those who do not. Hypothesis 1: Depressed homeless AA pts who receive housing (H grp.) during pilot will evidence significantly lower depression scores 4 weeks post- housing (T2) when compared with those who do not (NH grp.) at the same time interval.	1)Depression: Severity 2)Homelessness/ Housing status	PHQ 9 scores for both groups	Depressed, homeless at- intake AA participants broken into two distinct groups: Housed during pilot (H) (n=17) Non- housed during pilot (NH) (n=25)	Descriptive stats: Mean, median, mode for continuous scores(PHQ9)

Appendix D

Outline of Pilot Implementation, Evaluation, and Materials for Pilot Project

I. Initial Intake at the HCO

   1. Homeless patients screened for depression at in-take
   2. PHQ- 9 administered by Medical Assistants

II. Immediate referral to clinical case manager for those patients receiving PHQ-9 scores $\geq$ 10.

III. Further clinical evaluation within 30 days from intake of those patients receiving PHQ-9 scores $\geq$ 10.

   1. DSM diagnosis given.

IV. Clinical Case manager meeting held within one week for patients diagnosed as depressed (DSM dx of Major Depression and PHQ-9 scores $\geq$10).

   1. VI-SPDAT utilized to assess level of vulnerability
   2. All patients receiving a score of 8 or greater on VI-SPDAT notified of housing eligibility through The Community Partnership for the Prevention of Homelessness (TCP)

V. Following eligibility requirements and explanation of The Community Partnership for the Prevention of Homelessness (TCP) process by the clinical case manager, patient's housing procurement begins

VI. Bi-weekly update meetings between the clinical case manager, clinical and staff personnel involved in the procurement process are conducted and documented. Documentation allows for timely examination of fidelity to the procedures.

VII. Continual monitoring of procurement of housing process, workflow activities, duration of time to housing and follow up will be conducted by clinical case manager.

VIII. Internal dissemination: Information and status of procurement of housing should be presented at health center level by clinical team and at the monthly Social Determinants of Health/ DC Homeless Taskforce meetings

Materials:

1. Brief instruction manual to include:
    a. Provide patient's with information about TCP and other homing related resources

Training

1. 1-2 training sessions by Nurse and clinical case manager for MAs and other clinical staff involved to refresh training on the PHQ 9 (nurse) and the VI-SPFAT tool (clinical case manager)

Program evaluation procedures

1. Brief surveys of patients, clinicians, and case managers administered to assess the feasibility and perceived value and impact of program as well as to make further recommendations regarding improvements and efficiencies. TCP and the Continuum of Care program should be asked to provide feedback and suggestions for improvement in the linkage with the HCO re: referral for housing and related procedures

APPENDIX E

Clinician Questionnaire

For each of the questions below, circle the response that best characterizes how you feel about the following statements, where 1= Strongly Disagree, 2= Disagree, 3= Neither Agree or Disagree, 4= Strongly Agree and 5= Agree

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Did you feel this program adequately addressed the gaps in services for African American homeless patients with depression?	1	2	3	4	5
Did this program increase your clinical workload?	1	2	3	4	5
Did this program add any new clinical practices you thought were beneficial to patient care?	1	2	3	4	5
Did this program provide more opportunities for interdisciplinary approaches to patient care?	1	2	3	4	5
From the perspective of a clinician, would this program be easy to incorporate at the organizational systems level?	1	2	3	4	5

APPENDIX F

Case Manager Questionnaire

For each of the questions below, circle the response that best characterizes how you feel about the following statements, where 1= Strongly Disagree, 2= Disagree, 3= Neither Agree or Disagree, 4= Strongly Agree and 5= Agree

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Did this program fit within your current case management framework?	1	2	3	4	5
Did the PHQ-9 and VI-SPDAT tools identify appropriate program participants?	1	2	3	4	5
Did you feel your continuous involvement with participants in the program helped with retention rates?	1	2	3	4	5
Was it difficult to coordinate services between different agencies for the participants in the pilot program?	1	2	3	4	5
Was your caseload manageable during the pilot program?	1	2	3	4	5