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FOLLOW-UP AMONG HOMELESS PATIENTS AT SAN
FRANCISCO GENERAL HOSPITAL: EXAMINING
THE SOCIAL DETERMINANTS OF HEALTH

The San Francisco General Hospital emergency department has a high occurrence of homeless patients that are lost to follow-up after discharge. This Doctor of Nursing Practice project conducted a survey to evaluate the social determinants of health among this population and how they influence the participant's ability to follow-up. This is the first phase of a three-phase project involving assessment and evaluation. The second and third phases of this project will center on intervention and re-evaluation after intervention. The survey was administered to eligible participants who presented to the emergency department at San Francisco General Hospital. Fifty participants were surveyed on demographic information including their age, ethnicity, education, gender, income, and preferred language. Participants were then asked to rate economic stability, physical environment, education, food, community resources, and healthcare and how they impacted their ability to follow-up. Results from this survey showed economic stability, physical environment, and access to healthcare were the most commonly reported social determinants of health participants felt influenced their ability to follow-up. This evaluation showed that these social determinants of health necessitate consideration in this particular population.

Robert Gnat
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FOLLOW-UP AMONG HOMELESS PATIENTS AT SAN
FRANCISCO GENERAL HOSPITAL: EXAMINING
THE SOCIAL DETERMINANTS OF HEALTH

by
Robert Gnat

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APPROVED

For the California State University, Northern Consortium
Doctor of Nursing Practice:

We, the undersigned, certify that the project of the following student meets the required standards of scholarship, format, and style of the university and the student's graduate degree program for the awarding of the Doctor of Nursing Practice degree.

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CHAPTER 1: INTRODUCTION

This chapter includes a brief discussion of the phenomena of interest: The incidence of being lost to follow-up among homeless patients at San Francisco General Hospital emergency department. A background is given about the history of San Francisco General Hospital as a safety net hospital, the homeless epidemic in San Francisco, and what the social determinants of health are. This Doctorate of Nursing Practice project intends to examine the Social Determinants of Health among homeless patients who visit the San Francisco General Hospital emergency department and how these social determinants of health influence the patient's ability to follow-up. This Doctor of Nursing Practice project is the first phase of a three-phase endeavor that aims to isolate the common social determinant of health that attribute to poor follow-up among the homeless population of San Francisco. Lastly in this chapter, the theoretical framework will explain the foundation on which the project was based.

The Problem

San Francisco General Hospital is located in the city of San Francisco's Mission neighborhood. According to the hospital's website San Francisco General Hospital has an annual volume of over 100,000 patients a year with 70,000 of those patients presenting to the emergency department. It is a public hospital that serves the city of San Francisco and Northern San Mateo that operates using 100% bed capacity daily. 80% of patients are receiving Medicaid, Medicare or uninsured. 8% of patients who receive care of San Francisco General Hospital are homeless (ZSFG, 2018). The majority of the homeless patients that present to the emergency department do so with conditions that require some sort of follow-up after discharge. Unfortunately many of the follow-up appointments that are made

are never met, and the patient often returns to the emergency department with a worsening condition that may lead to worsening complications, preventable admission, increased emergency department and hospital overcrowding. Additionally, failure to meet scheduled follow-up affects patient satisfaction, quality of life and cost control.

The problem with follow-up planned by the San Francisco General emergency department is that it has become routine and mechanical. Patients are seen, stabilized and given the plan of care for follow-up but consideration for how they will be successful in making that follow-up are missing. The priority in the emergency room is given to stabilization and management of emergency conditions. Follow-up is given after stabilization but it is largely ignored. The challenge for this particular subpopulation of San Francisco is access to care. The way care is accessed as well as the means to access it must be examined in order to prevent bounce back emergency department visits. In order for the homeless patients to effectively manage their care after emergency department discharge they must have stable housing and resources (Coyle, 2017). The homeless patient has several obstacles when accessing healthcare, despite available resources there are still factors that influence their ability to make follow-up appointments.

Improvements in how the discharge and follow-up care are arranged need to be made and the incidence of being lost to follow-up after emergency care must be quelled. The revolving door process for homeless patient's at San Francisco General Hospital emergency department must be re-evaluated with more consideration for the specific challenges the homeless population face when they access care. If changes are not made in how homeless patients are screened based on their ability to follow-up after discharge from the emergency department then this phenomenon will continue and worsen. As this phenomenon worsens so will

the consequences of poor follow-up including worsening complications of the presenting condition, preventable admissions, increased emergency department, hospital overcrowding, decreased patient satisfaction, poorer quality of life and increased costs for all parties involved.

Problem Statement

Access to follow-up care after discharge from an emergency department is critical for continuity of care and the management of illnesses and injuries. The social determinants of health that have been determined to play a significant role in the resolve of patients to remain in the healthcare system are:

1. Economic stability
2. Physical environment
3. Education
4. Food
5. Community resources
6. Healthcare

(Anderman, 2016; Roy, Lysaght, & Krupa, 2017; Stafford & Wood, 2017). Refer to Appendix C for additional details regarding these social determinants of health. A common concern among the medical staff at San Francisco General Hospital is the lack of follow-up appointments kept by the homeless population they serve. Following discharge from the emergency department, homeless patients are missing their follow-up appointments resulting in them receiving partial or incomplete care. Not only is this a detriment to the patient's health but lack of follow-up may result in increased costs related to increased readmissions to the emergency department and longer length of stay. Additionally, being lost to follow-up can increase costs for hospital systems related to avoidable admissions to inpatient units. Medicaid and Medicare reimbursement can be lower for

homeless patients who are admitted and readmitted to the hospital because of bounce back penalties. Reimbursement rates for health systems can also be negatively affected due to complications related to the lack of follow-up appointments.

Purpose

The purpose of this doctor of nursing practice (DNP) needs assessment project is to examine which of the six social determinants of health homeless patients report as key factors that influence their inability to attend follow-up appointments given to them at emergency department discharge. Collecting data on homeless patients perceived social determinants of health that impact their ability to follow-up will help the organization at San Francisco General Hospital focus their attention on ways to alleviate the most common social determinates that appear to increase the incidence of being lost to follow-up.

Background

The homeless population faces many impediments in accessing care and managing their health. Being homeless limits options for primary care and disease management. Homeless patients in need of healthcare face life-threatening complications as a result of their limited access. According the U.S. Department of Housing and Urban Development, approximately 553,742 people spent one night in homeless shelter in January 2017 (Fuchs, 2017; O'toole, Johnson, Aiello, Kane, & Pape, 2016; Taylor et al., 2016). Considering the social determinants of health, many homeless patients are not economically stable, may lack formal education, have an ever-changing physical environment, and have restricted access to food and healthcare. They rely heavily on community resources, which can be scarce depending on their geographical location. Given their poor access to healthcare, homeless patients are sometimes forced to seek care in emergency departments.

Emergency departments offer short-term treatment and stabilization of patients, however, primary care needs cannot be met in the emergency department (Elliott, Klein, Basu & Sabbatini, 2016, Mariner, 2016; McNeil, Guirguis-Younger, Dilley, Turnbull, & Hwang, 2013).

Once homeless patients are stabilized and discharged from the ED, some are provided with follow-up appointments. These are often with a specialist or clinic. This effort is to ensure the management of their illness or injury continues. The observable fact at San Francisco General Hospital emergency department is that the homeless patients are not keeping the majority of these follow-up appointments. The homeless patient often bounces back to the emergency department with a worsening condition and often with additional complications. Many are quick to blame the homeless patient without first considering that their social determinants of health play significant role in their ability to attend follow-up.

Analyzing the six key social determinants of health that patients report impact their ability to meet their follow-up appointments will yield data that will be valuable to the hospital system. Once data are analyzed, organizational leaders will be able to take steps to address the social determinants of health that appear to increase the incidence of being lost to follow-up after discharge from the emergency department at San Francisco General Hospital. This DNP project is the first of a three phase endeavor.

Phase one

This is the phase that centers on this Doctorate of Nursing Practice project. This is the data collection phase in which responses are collected from survey participants based on their perspective. The responses are used in order to determine the most common social determinants of health that interfere with the

homeless patient's ability to follow up at San Francisco General Hospital. From this data further recommendations will be made for phase two of this Doctorate of Nursing Practice project.

Phase two

Phase two will begin upon completion of this Doctorate of Nursing Practice project. Phase two explores interventions that address the most common social determinants affecting the ability of the homeless patient to follow-up after discharge from the emergency department at San Francisco General Hospital revealed in phase one. After some research and discussion regarding what particular invention is most appropriate to address the common social determinants of health in this particular group, the determined intervention will be selected and implemented to a select number of participants with the assistance of the discharging clinicians in the emergency department at San Francisco General Hospital.

Phase three

This is the last phase of the project. In this phase the investigator will follow participants who received the intervention from phase two to evaluate the effectiveness the intervention had on their ability to follow-up. In this phase the study will determine if considering the social determinants of health and adjusting the discharge process to address them in real time will reduce the incidence being lost to follow-up in the sample of participants from phase two.

Consideration for the Common Health Disparities Among the Homeless Population

When addressing the Social Determinants of Health and how they relate to the management of chronic illness it is important to consider what illnesses are common among the population. The homeless population of San Francisco are at

greater risk for illness and injury due to the lack of stable housing and finances. In addition to chronic medical conditions, many homeless individuals struggle with mental health conditions. Mental health affects one's ability to care for themselves and others. Moreover, many homeless individuals are struggling with substance abuse that can inhibit their ability to manage their personal health. By reflecting on their common health disparities, clinicians are better able to plan their follow-up.

Recommendations for Examining the Social Determinants of Health

In order to improve health care services it is crucial to consider the Social Determinants of Health. In order to address gaps in health inequities, the social structures and economic systems of the patients must be evaluated. Social Determinants of health are formed by the distribution of power, money, and resources in a given community (Handmaker, 2017, p. 61). When it comes to situations of chronic disease management and mental health maintenance it becomes even more essential to consider the social determinants of health as doing so improves management of each. The current recommendations from the healthy people 2020 initiatives includes creating social and physical environments to reduce health disparities and promote good health for all. The centers for disease control has also issued ten essential public health services that address social determinants of health. These are summarized below:

1. Monitoring of health status.
2. Diagnosis and investigation of health issues in the community.
3. Offer health education, information and empowerment to the community.
4. Develop community partnerships to identify and solve health issues.
5. Create policies and plans to support health efforts.
6. Enforce regulations that ensure protection and safety for the community.
7. Connect people to personal health services when otherwise unavailable.

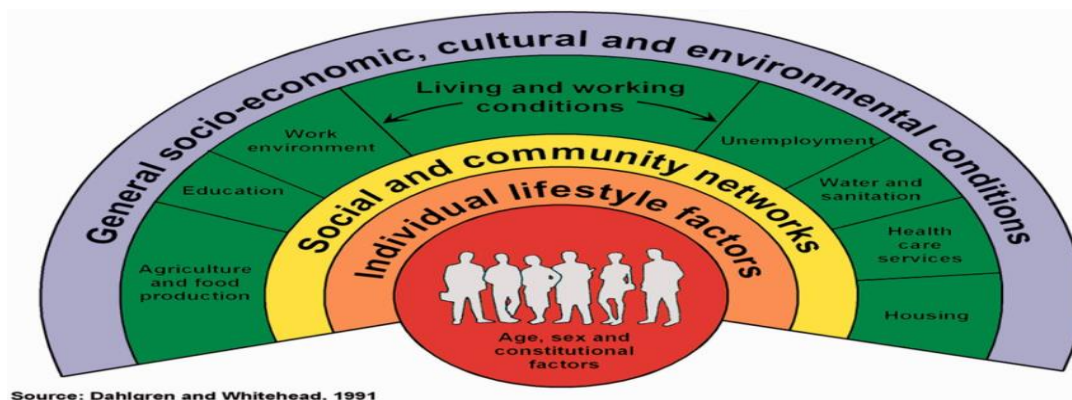
8. Assure competence among the public health workforce.
9. Evaluate the quality, effectiveness, and accessibility of health services.
10. Research new ideas and solutions to health problems.

Background Summary

Managing the health of the homeless population can be challenging especially when there is required follow-up. Assessing their access to care through the examination of their Social Determinants of Health will provide better management of their health. Assessing the Social Determinants of Health will be a change for San Francisco General Hospital emergency clinicians. There is already mounting pressure for emergency clinicians at San Francisco General Hospital emergency room to quickly evaluate patients and determine a disposition as soon as possible. This is an extra step being asked of them to incorporate into their practice. Care approach and clinician practice is subject to change as healthcare advances but the goal of reducing the incidence of homeless patients being lost to follow-up remains the same.

Theoretical Framework

In addressing how to reduce the incidence of being lost to follow-up from the emergency department for the homeless population, the social determinants of this population's health must be examined thoroughly. This must be done in order to understand the everyday challenges of this vulnerable population. By understanding these challenges clinicians can have more empathy for this population and address their needs more appropriately. To do this, the social ecological conceptual framework created by Göran Dahlgren and Margaret Whitehead named the multilevel model of social determinants of health was used.



The multilevel framework of social determinants of health originated to bring to light the factors that influence health yet tend to be invisible to providers working at the bedside. This framework was created to address inequalities of health in the United Kingdom in the year 1991 and has been adapted to branches of public health since that time (Baker, 2018, p. 403). This framework is widely used by public health practitioners and researchers to explain how health disparities arise and how health equity can be achieved. This framework helps to clarify the social and economic influences of health on the population's health.

Addressing the broader influences helps decrease disparities for the individual and the population. This conceptual framework addresses multiple levels of social determinants including how the patients live and work, the condition of their environment, and the resources available to them (Hardy, Bohan, & Trotter, 2013, p. 68). The components of this framework include constitutional factors (inborn disease, disabilities), age, sex, gender, individual lifestyle factors, social and community networks, living and working conditions, general, socioeconomic, cultural and environmental conditions (Baker, 2018, p. 406).

The age of the patient is a factor in how many homeless patients access the emergency department. Typically many younger patients access emergency care to

due to mental illness, whereas, older patients will access emergency care due to substance abuse (Lam, Arora, & Menchine, 2016, p. 607). The age of the patient also influences how adherent they will be with follow-up from the emergency department. Younger patients demonstrate higher incidence of poor adherence to follow-up appointments from the emergency department in comparison to older adult patients (Elliott, Klein, Basu, & Sabbatini, 2016, p. 1234).

The sex of the patient is an important component of this framework especially when dealing with conditions that are related to gender such as pregnancy. Many expectant homeless mothers may not utilize medical care leading to problems with pregnancy including miscarriage, developmental delays, and complications after birth (Baker, 2018, p. 403). The demands of pregnancy on the human body can be overwhelming for the homeless patient, which can increase their risk of complications.

Another component includes the individual lifestyle factors of the patient including a history of substance abuse, nutritional intake, level of education, and religion, which can affect how the homeless patient will receive and accept care. Many homeless patients who grapple with substance abuse may believe the ability to access those substances takes priority over follow-up appointments for acute illness or injury. Homeless patients battling mental health may believe other issues take precedent over follow-up care.

This framework addresses the social and community environment of the homeless patient. This component looks at the available resources for the homeless patient such as mobile medical services, shelters, soup kitchens etc. This concept also explores how the community does and does not support the homeless population and their struggles with access to medical care. The city of San Francisco offers types of resources including shelters, soup kitchens, mobile

medical services, addiction rehabilitation, temporary housing in the forms of single occupancy residences at refurbished hotels, vocational studies, and employment placement. The framework highlights the availability of these resources and how they can best serve the homeless population and their struggle with access to healthcare.

The living and working conditions of the population is another component of this framework. The living conditions of the homeless patients vary but should be considered especially when it plays a pivotal role in how they will reach their follow-up appointments. This framework addresses the homeless patient who is employed that by considering that the homeless patient may not be able to take time away from work to attend this follow up appointment.

The final component of this framework investigates the general socioeconomic, culture and environmental conditions of the homeless patient. This brings attention to many smaller factors of the population that may contribute to their ability to attend their follow-up appointments. For example the framework explores the availability and type of transport to and from appointments, the financial burden of follow-up appointments on the homeless patient, the culture of the homeless population and how that may affect perspectives on follow-up appointments, and environmental conditions like rain or heat which may play a part in how the patient decides whether or not to go to their follow-up appointment. This framework is best suited for this vulnerable population because it using a multipronged approach in assessing inadequacies of homeless patient's social determinants that contribute to homeless patients being lost to follow-up after discharge from the emergency department.

CHAPTER 2: REVIEW OF LITERATURE

This chapter discusses the literature reviewed for follow-up among homeless patients at San Francisco General Hospital emergency department: Examining the social determinants of health. This project is focused on assessing the social determinants of health and how they may impact the ability to follow-up among homeless patients who presented to the emergency room. The literature presented here was used to identify the social determinants of health and why their consideration is significant in the delivery of healthcare. The literature also illustrates the obstacles experienced by the homeless population when accessing care. A preliminary literature search was conducted to identify how the social determinants of health can be used to address follow-up challenges for the homeless population. The literature search was widened to include the use of social determinants of health in public health. This information was useful in examining the current modalities being used to by public health systems to address care needs. Follow-up care for the homeless population, including linkage to primary care were also searched. This search was valuable to the DNP project because it demonstrated how health systems developed processes to address primary care needs for homeless individuals in their respective communities. The searches were limited to peer-reviewed articles. Limited research was found, which suggests there is a need for more research into this particular phenomena.

The review of literature is divided by the social determinants of health and their significance in healthcare, the follow-up challenges for homeless patients, the use of social determinants of health in public health, and addressing the primary care needs in the homeless population. A gap analysis is included because of the lack of literature on the incidence of follow-up for homeless patients discharged from the emergency department.

The Social Determinants of Health and Their Significance in Healthcare

Narian and Zimmerman (2017) state addressing the social determinants of health is one of the most promising strategies in advancing health equity and providing the highest level of health for all. In their article “Advancing health equity: Facilitating action on the social determinants of health among public health departments”, Narian and Zimmerman explore the healthy people 2020 campaign for the social determinants of health. In their article these authors explore how establishing social and physical environments that promote well-being can advance health equity. The social determinants of health include:

- economic stability
- education
- physical environment
- community resources
- food access
- healthcare

Deficiencies in any of these social determinants of health can result in poor healthcare for any population according to the authors. Moreover, the authors advocate this strategy to be utilized by all public health sectors to address health disparities. Lastly the authors call for more research into comparing interventions that address social determinants of health and their outcomes in advancing health equity.

Authors Marmot and Allen explore how the social determinants of health relate to addressing health inequities in their article “Social Determinants of Health Equity”. According to these authors there is no excuse as to why the social determinants of health are not taken into account when addressing the healthcare

needs of patients. The authors state there is enough research and evidence demonstrating a relationship between health outcomes and both social and environmental factors. The authors go on to say that stating there is not enough evidence to support the use of social determinants of health in care planning is unacceptable. Appropriate methods of addressing social determinants of health in healthcare management have been developed on local, national, and international levels. (Marmot & Allen, 2016, p. 518). The authors here are stating that there exists enough evidence that suggests consideration for the social determinants of health has become essential when the goal is to reduce health inequities among underserved populations. As a group, healthcare practitioners need to standardize their practice of evaluating social determinants of health while developing plans of care that reflect consideration for them.

The Follow-Up Challenges for Homeless Patients

In his article author Andrew Coyle (2017) conducts a retrospective study on the effectiveness of homeless patients who were enrolled in care coordination programs after successful discharge from the emergency department and their attendance for follow up appointments. In his study he found that 80-85% homeless patients enrolled in some sort of care coordination program successfully attended their follow-up appointments given to them by the discharging provider. Additionally, many of the homeless patients were able to establish primary care. According to Andre Coyle, most of the care coordination programs considered the social determinants of health. These programs were able to remedy many hindrances to care like stable housing and transport to and from appointments after conducting a survey about the social determinants of health for each patient enrolled in a care coordination program. Coyle further postulated that by

addressing their housing and financial needs, the homeless population are more suited to continue their care after hospital discharge.

The challenges that the homeless patient faces on a daily basis had more light shed on them by author Richard Eckersley. In his article, Eckersley promotes the idea that healthcare inequality is represented best in the homeless population through their struggles with access to care. Eckersley goes on to state human societies are inherently complex but when an individual lacks basic shelter the complexity is compounded. This article calls for more research and discussion into the special needs of the homeless patient as access to shelter as well as food, healthcare, and education are compromised. Moreover, in his article, Eckersley shows how the health and age of the individual deserves more recognition when addressing health inequities among vulnerable populations. In order to do so, advocates must focus on the social determinants of health.

Eckersley goes on to list the vulnerable populations most at risk include the homeless population and the migrant population. According to Eckersley, these populations face particular challenges to access to health including lack of health literacy, stable shelter, financial instability, and lack of transport. Eckersley goes on to call for mandatory changes that address these particular challenges in order to improve access to health for these particular populations. Lack of consideration for these challenges compromises the ability of individuals in these populations to manage their care and improve their health inequities. Furthermore, recognition of these challenges by health care practitioners must be mandated in order to improve fairness with the healthcare management of these populations.

The Use of Social Determinants in Public Health

Kim Krisberg in her article “New focus: Shift toward social determinants transforming public health” focuses on the healthy people 2020 initiatives that ask for the social determinants of health to be incorporated into plans of care in the public health setting. Krisberg states that new affiliations between public health departments and academies of health like the American College of Pediatrics are being made to tackle issues like poverty in the pediatric patient and gun violence among predominantly black neighborhoods. Krisberg goes on to state that affiliations like these are essential in order for the social determinants of health to have more consideration in the public health arena (Krisberg, 2016).

Kim Krisberg, through her article, increases awareness to the fact that health policies through the departments of public health are aimed at bringing awareness and control to public health issues that have a major impact in that region. Unfortunately many policies fall short in their consideration for the social determinants of health. The focus should now be on how to institutionalize consideration for the social determinants of health and their impact on all systems that impact health. The goal with this would be the increased incidence of positive health outcomes.

Robert Hahn affirms in his article “Two paths to health in all policies: The traditional public health path and the path of social determinants” that examining the social determinants of health in the public health setting leads to more positive health outcomes for individuals of underserved populations (Hahn, 2019). Robert Hahn states that non-health sectors of public health like the transportation system, the educational system, and the justice system need to align themselves with public health agencies to better serve at risk populations. By examining the social determinants of health, Robert Hahn confirms that without assistance from non-

health sectors in addressing health inequities, the health inequities will continue to hinder the management of health by individuals within that population.

Robert Hahn calls for increasing awareness to the social determinants of health among practicing clinicians in order to increase recognition of health consequences as a result of their current social determinants of health. Clinicians need to become leaders for change in how the social determinants of health are considered during the planning of care for patients from vulnerable populations. Hahn states that considering the social determinants of health can prepare clinicians to more thoroughly develop a successful plan of care.

Addressing the Primary Care Needs in the Homeless Population

Thakkar and colleagues (2015) conducted a study using retrospective analysis to identify risk factors associated high frequency use of the emergency department among homeless patients. In their study they found that risk factors including lack of housing, lack of health care, and history of HIV, hepatitis C, and substance abuse contributed the most to high frequency use of emergency services. From this data Thakkar and his colleagues concluded that if housing and access to health were addressed then high frequency emergency department use would decrease. Similarly, Thakkar and his colleagues stated homeless population emergency department visit frequency can be predicted based on their social determinants of health and comorbidities. Addressing the overuse of the emergency department by the homeless population will require a multipronged approach that focuses on addressing social needs in addition to needs revolving around chronic medical illnesses.

Fatima Wurie and Philip Windish conducted a survey between July 2012 and March 2013, based on video observed therapy and its use for improving treatment adherence among the homeless population. This study focused on

addressing the inability of homeless patients to maintain follow-up and primary care visits. By using video observed therapy they were able to check in with patients to reconfirm their plan of care and their progress with that plan of care. This video observed therapy gave homeless patients access to providers from their current location through the use of a provided smart phone making travel and time management less of a concern for the patient. The device allowed them to discuss treatment and plans of care remotely.

According to Wurie and Windish, the use of health informatics is slowly becoming one method that shows success in addressing the primary care deficits found in the homeless population. In their study they found that video observed therapy improved adherence to medication by 86%. This study shows that there are less conventional but more effective ways to follow-up and maintain primary care instead of visiting an doctor's office or clinic. In this study the barrier of transport was eliminated and the treatment adherence improved.

Gap Analysis

Uncommonly, there were some large gaps in the literature. First, there was no literature regarding the use of social determinants specifically by the emergency department to coordinate care post-discharge for the homeless patient in San Francisco. There was no literature that expanded on creating tools that emphasized the use of social determinants to guide follow-up planning in the homeless population. Additionally there were no studies that addressed the social determinants particular to the homeless patients of San Francisco. There was literature emphasizing the importance of social determinants in health maintenance however much of the literature did not address the homeless population specifically.

There were an abundance of articles asking for healthcare providers to consider the social determinants of health as well as the challenges common to individuals within the homeless population such as mental health and substance abuse. However, while worth consideration, no particular recommendations for management were given and no studies addressing the challenges San Francisco homeless patients face were available.

There was also a large amount of literature encouraging affiliations between health and non-health sectors in the community. The affiliations aimed at improving transportation, shelter options, food access, and access to care for underserved populations within the community. Literature demonstrating the impact affiliations had on homeless populations and their ability to follow-up within a specific community was not found.

Lastly there was literature on alternatives to traditional clinic visits. While this did not specifically address the issue of follow-up after discharge from the emergency department they did support alternative measures that can be used to address social determinants of health impacting a homeless patient's ability to follow-up.

Summary

Predominantly, the literature search and review demonstrated a need for more research to be conducted regarding the social determinants of health and how they impact follow-up in the homeless population. The idea of creating affiliations and partnerships with non-health sectors in order to improve care accessibility and reduce health inequities shows promise for future studies that aim at reducing the incidence of being lost to follow-up in the homeless population. Another promising strategy that was found in this literature review was the use of other

methods to connect homeless individuals with medical providers through the use of modern technology and health care informatics.

CHAPTER 3: METHODOLOGY

Design

The focus of this DNP project was to examine the social determinants of health among the homeless patients who present for care at the San Francisco General Hospital emergency department. This is a needs assessment study that aimed to assess the common social determinants of health of homeless patients who present to the emergency department at San Francisco General Hospital through survey. This study proposed to answer the research question, are there common hindrances related to the social determinants of health that prevent homeless patients from reaching their follow-up appointments? There are common social determinants that have been associated with successful healthcare management. Identifying the key determinants of:

- economic stability
- education
- physical environment
- community resources
- food access
- healthcare

In order to address why the homeless population that visit San Francisco General Hospital emergency department are not keeping their follow-up appointments a survey was conducted. The survey results offered information regarding similarities among the responses from the group of participants. This information regarding the similarities will be used in later studies to design an intervention that can address the high incidence of being lost to follow-up among this population. The survey was quantitative in design and also measured common

demographics among the participants. The data were collected and analyzed using measures of central tendencies including the mean and standard deviation. The chi-squared test and chi-squared statistic tests were also used to evaluate the data. There was no experimental, investigational, or special procedures involving the participants in this study. This is a quality improvement project that will be using a quantitative survey as the first phase of a three-phase project. The second and third phases of this project will be covered in future papers.

Sample

This study used a convenience sampling method. By engaging approximately fifty participants who are aged eighteen and older that identify as homeless and present to San Francisco General Hospital emergency department for care. The inclusion criteria include:

- Age 18 and up
- Reporting homelessness
- Being discharged from the emergency department with and without follow up

The exclusion criteria include:

- Under the age of 18
- No identifying as homeless
- Having altered mental status

Recruitment and Duration

The co-investigator spent twelve-hour shifts in the emergency department triage area recruiting appropriate candidates. The participant first registered to be seen and saw the triage nurse before being approached by the co-investigator. The co-investigator asked for their participation in the survey once the triage portion of

the visit was completed. The dates for recruitment were over a 4-week period from 12/08/18 to 01/08/2018.

Instrumentation

The survey tool, developed by the co-investigator, used a Likert scale to capture the social determinants that the homeless patient perceives impact their ability to follow up. Reliability and validity have not been established for the survey and this will be the first use of this tool. The survey tool was created on information from an article studying six-hospital systems approach to screen for social determinants of health in primary care (LaForge et al, 2018). The survey tool screened homeless patients for social determinants of health that may contribute to the incidence of not attending follow up appointments after emergency department discharge. The survey tool is available for review in appendix A.

Individuals under the age of consent, not homeless, or mentally incapacitated were excluded from the study given their inability to provide consent. Homelessness was identified on the part of the patient while registering into the emergency room. Individuals who are eighteen years of age or older that identify as homeless and are requesting evaluation in the emergency department were included in this study. The project purpose, project benefits, and minimal risks were discussed and written consent was obtained before participation began. Both the consent form and survey tool were designed by the co-investigator and presented to emergency department leadership. Both the survey and consent form have been approved by emergency department leadership at San Francisco General Hospital. The survey and consent forms were administered by the co-investigator and were placed in a locked box by the participant once complete. The surveys will be collected from the locked box at the end of the shift.

The survey consists of demographic information questions followed by the listed common social determinants of health. The participant will be asked to rate each social determinant in how it effects their ability to follow up using a Likert scale as follows:

- 1- No effect
- 2- Some effect
- 3- A considerable effect
- 4- Is the main reason I can't follow up

The survey contains a total of twelve questions. Six of the questions relate to the demographics of the participants and ask the participant to identify their:

- Age
- Ethnicity
- Education
- Gender
- Income
- Preferred language for communication.

Respondents were asked to fill in the box next to the corresponding response that they most identified with. The remaining six questions related to social determinants of health and asked them to rate how would impact their ability to follow up:

- Economic stability
- Physical environment
- Education
- Food access
- Community resources
- Healthcare access

Respondents rated the following social determinants of health using a Likert scale where:

- 1 = No effect
- 2 = Some effect
- 3 = A considerable effect
- 4 = Is the main reason I can't follow up.

Each of the six social determinant questions received a response between 1 and 4. Respondents were asked to circle the number that best corresponds to the impact scale. Please refer to appendix B for the survey.

There was no identifying information and participants were asked to place their completed consent and surveys into an envelope to maintain confidentiality. The completed forms were kept in a locked box only accessible by the co-investigator of this study. The surveys were kept until the data analysis is complete in February 2019, once data analysis is completed the forms were shredded and placed in a protected health information (PHI) safe canister to be incinerated.

The data obtained were analyzed by measures of central tendencies including mean and standard deviation. Chi-squared and chi statistical tests were also used in data analysis. Descriptive and quantitative analysis will be used to identify common responses among participants. The study results were shared with the emergency department leadership team.

Procedure for Data Collection

The participants were asked to participate in the study once their triage intake assessment was completed and they were deemed appropriate based on the inclusion and exclusion criteria. Once verbal consent was given a written consent form was presented to the participant (See Appendix A). Once the written consent

was obtained the survey was administered. All documents were then collected and sealed away into a filing cabinet until data analysis by the co-investigator.

Participants were reminded that participation is voluntary and no compensation would be provided. The co-investigator's work email address and phone number was provided with the survey in case any concerns or questions arise from the participants. This needs assessment study was conducted at San Francisco General Hospital Emergency Department located at 1001 Potrero Avenue, San Francisco, 94110.

No type of incentive was offered to participants for their participation. The participants signed consents were collected the co-investigator during the survey process then locked away in a locked box that only the co-investigator had access to. The surveys were free of identifying data such as names, birthdates, and social security numbers. Data was de-identified so that no data can be linked to individual participants of the study. When the research was completed the surveys were shredded and placed in a PHI bin at the site.

Data Analysis

Data were uploaded onto SPSS. A likert scale score was added to the survey answers as follows: 1 = No effect, 2 = Some effect, 3 = A considerable effect, 4 = Is the main reason I can't follow up. The demographic information was also uploaded onto SPSS. Descriptive statistics was used to quantitatively describe the feature of each question for all twelve questions. The questions pertaining to the social determinants of health and how the participant rated them were studied using the mean to determine the average response among the group for each question. The standard deviation was also used in the questions pertaining to the social determinants of health to determine variation of the data.

The Chi-square test was used for the questions pertaining to the social determinants of health to evaluate for relationships between the categorical variable. In this case the Chi-square test was used to determine whether there is a significant difference the responses given on the ability of the participant to follow-up. In order to determine how well the observed distribution of data fits with the distribution that is expected with the independent variables present in the study, the Chi-square statistic was applied.

CHAPTER 4: RESULTS AND FINDINGS

The DNP project examined the common social determinants of health of homeless patients who presented to San Francisco General Hospital emergency department. This chapter reports the data from the participants. The results and findings are to be used in future phases of this DNP project to develop an intervention to address the common social determinants of health reported by participants. This project examines the social determinants of health that impact would impact their ability to follow-up after their discharge from the emergency department.

The general consensus among the research is that the survey participants involved would have:

- Similarities with their demographic information
- There will be statistically significant responses regarding social determinants of health and their impact on follow-up

Sample

The surveys were distributed to 50 patients who identified as homeless and presented to San Francisco General Hospital emergency room for care. All participants met inclusion criteria, no surveys were invalidated. All surveys distributed were collect giving a response rate of 100%, All responses were uniform with no alterations to the survey questions or responses. The total sample size remained was 50 (n = 50).

Demographics

| Age (Table 1) | Frequency | Percent | Valid Percent | Cumulative Percent |
|--------------------------------|------------------|----------------|----------------------|-------------------------------|
| 18 - 35 years | 7 | 14.0 | 14.0 | 14.0 |
| 36 - 50 years | 13 | 26.0 | 26.0 | 40.0 |
| 51 - 65 years | 23 | 46.0 | 46.0 | 86.0 |
| 66 and older | 7 | 14.0 | 14.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |
| Ethnicity (Table 2) | Frequency | Percent | Valid Percent | Cumulative Percent |
| Caucasian | 9 | 18.0 | 18.0 | 18.0 |
| Latino | 13 | 26.0 | 26.0 | 44.0 |
| African American | 22 | 44.0 | 44.0 | 88.0 |
| Asian | 2 | 4.0 | 4.0 | 92.0 |
| Pacific Islander | 1 | 2.0 | 2.0 | 94.0 |
| American Indian | 3 | 6.0 | 6.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |
| Education (Table 3) | Frequency | Percent | Valid Percent | Cumulative Percent |
| Some high school | 13 | 26.0 | 26.0 | 26.0 |
| High school or GED | 25 | 50.0 | 50.0 | 76.0 |
| Some College | 4 | 8.0 | 8.0 | 84.0 |
| Associates Degree | 1 | 2.0 | 2.0 | 86.0 |
| Bachelor | 5 | 10.0 | 10.0 | 96.0 |
| Graduate Degree | 2 | 4.0 | 4.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

| Gender (Table 4) | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|------------------|----------------|----------------------|-------------------------------|
| | Male | 43 | 86.0 | 86.0 |
| | Female | 7 | 14.0 | 14.0 |
| | Total | 50 | 100.0 | 100.0 |
| Income (Table 5) | Frequency | Percent | Valid Percent | Cumulative Percent |
| Less than \$10,000 | 27 | 54.0 | 54.0 | 54.0 |
| \$10,000 to \$29,000 | 11 | 22.0 | 22.0 | 76.0 |
| \$30,000 to \$39,000 | 12 | 24.0 | 24.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |
| Preferred Language (Table 6) | Frequency | Percent | Valid Percent | Cumulative Percent |
| | English | 32 | 64.0 | 64.0 |
| | Spanish | 15 | 30.0 | 30.0 |
| | Chinese | 2 | 4.0 | 4.0 |
| | Tagalog | 1 | 2.0 | 2.0 |
| | Total | 50 | 100.0 | 100.0 |

Demographic results

In table 1 shown above the question related to age within the demographics portion of the survey shows that about 46% of the respondents were aged between 51 – 65 years making this age group the largest among the sample follow by participants aged 36-50 years of age which came in at 26%. Two groups with the lowest amount of participants were tied at 14%. Those groups were participants ages 18 -35 years of age and 66 and older. In table 2, 44% of the respondents were described their ethnicity as African Americans and they account for the largest ethnicity in the sample size. Followed by participants identifying themselves as Latino at 26%. In these results 9% of the participants identified as Caucasian, 6% identified as American Indian, and 4% identified as Asian. Pacific islanders compromised the smallest percentage in the group at 2%.

In table 3 it can be observed that the 50% of the participants completed high school or received their GED. The second largest group consisted participants who did not finish high school or receive their GED at 26%. In this group 8% of participants attended some college. 2% of participants had an associate's degree. 10% of the study participants had a bachelor's degree. 4% of the participants had a graduate degree. In table 4 it is noted that all participants self-identified as male or female. 86% of participants were male and the remaining 14% were female.

In regards to income, Table 5 shows 54% of participants had an income of less than \$10,000 dollars, this was self-reported in the majority of participants. This is followed by 24% showing a self reported income of \$30,000 to \$39,000 dollars. The income level with the least amount of participants was an income level between \$10,000 to \$29,000 dollars, which made of 22% of participants. Table 6 shows the most preferred language reported among the participants was

English at 64%. The second most reported preferred language was Spanish at 30%. Other languages reported include Chinese at 4% and Tagalog, which was the lowest reported preferred language at 2%.

Social Determinants of Health

| Economic Stability (Table 7) | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|------------------|----------------|----------------------|---------------------------|
| No effect | 2 | 4.0 | 4.0 | 4.0 |
| Some Effect | 4 | 8.0 | 8.0 | 12.0 |
| A Considerable effect | 24 | 48.0 | 48.0 | 60.0 |
| Is the main reason I can't follow-up | 20 | 40.0 | 40.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |
| Physical Environment (Table 8) | Frequency | Percent | Valid Percent | Cumulative Percent |
| No effect | 4 | 8.0 | 8.0 | 8.0 |
| Some Effect | 10 | 20.0 | 20.0 | 28.0 |
| A Considerable effect | 26 | 52.0 | 52.0 | 80.0 |
| Is the main reason I can't follow-up | 10 | 20.0 | 20.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |
| Education (Table 9) | Frequency | Percent | Valid Percent | Cumulative Percent |
| No effect | 25 | 50.0 | 50.0 | 50.0 |
| Some Effect | 6 | 12.0 | 12.0 | 62.0 |
| A Considerable effect | 5 | 10.0 | 10.0 | 72.0 |
| Is the main reason I can't follow-up | 14 | 28.0 | 28.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

| Food Access (Table 10) | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|----------------|----------------------|-------------------------------|
| No effect | 19 | 38.0 | 38.0 | 38.0 |
| Some Effect | 21 | 42.0 | 42.0 | 80.0 |
| A Considerable effect | 7 | 14.0 | 14.0 | 94.0 |
| Is the main reason I can't follow-up | 3 | 6.0 | 6.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |
| Community Resources (Table 11) | Frequency | Percent | Valid Percent | Cumulative Percent |
| | No effect | 18 | 36.0 | 36.0 |
| | Some Effect | 14 | 28.0 | 28.0 |
| | A Considerable effect | 11 | 22.0 | 22.0 |
| | Is the main reason I can't follow-up | 7 | 14.0 | 14.0 |
| | Total | 50 | 100.0 | 100.0 |
| | No effect | 18 | 36.0 | 36.0 |
| Healthcare (Table 12) | Frequency | Percent | Valid Percent | Cumulative Percent |
| No effect | 4 | 8.0 | 8.0 | 8.0 |
| Some Effect | 3 | 6.0 | 6.0 | 14.0 |
| A Considerable effect | 15 | 30.0 | 30.0 | 44.0 |
| Is the main reason I can't follow-up | 28 | 56.0 | 56.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |
| No effect | 4 | 8.0 | 8.0 | 8.0 |

Social determinants of health results

In table 7 shown above the response rated from the participant in regards to economic stability shows that 48% of participants feel economic stability has a considerable effect on their ability to follow-up. 40% of participant's report that economic stability is one of the main reasons they may not follow-up. 8% of participants reported economic stability had some effect on their ability to follow-up while 4% of participants reported economic stability had no effect. In table 8 shown below indicates 52% of participants reported that physical environment had a considerable effect on their ability to follow-up. 20% of participants reported that physical environment was one of the main reasons they could not follow-up. Another 20% of participants reported physical environment had some effect on their ability to follow up. Only 8% of participants reported physical environment had no effect on their ability to follow-up.

In table 9 shown above, 50% of participants reported that education had no effect on their ability to follow-up. Conversely, 28% of participants reported that this is the main reason why they cannot follow-up. 12% of participants reported education had some effect in their ability to follow-up and 10% of participants reported that education has a considerable effect on their ability to follow-up. In the table 10 regarding food access, 42% of participants reported that food access had some effect on their ability to follow-up. 38% of participants reported food access has no effect on their ability to follow-up. 14% of participants reported food access had a considerable effect on their ability to follow-up. Only 6% of participants reported this was one of the main reasons they could not follow-up.

In table 11 shown above, 36% of participants reported that community resources had no effect on their ability to follow-up. 28% of participants reported community resources had some effect on their ability to follow-up. 22% of participants reported community resources had a considerable effect on their ability to follow-up. Lastly, 14% of participants reported community resources was one of the main reasons they could not follow-up. In table 12 regarding the social determinant of healthcare, 56% of participants reported it was the main reason they could not follow-up. 30% of the participants reported healthcare had a considerable effect on their ability to follow up. 8% of participants reported healthcare had no effect on their ability to follow-up. 6% of participants reported healthcare had some effect on their ability to follow-up.

Descriptive Statistics

| Descriptive Statistics (Table 13) | N | Minimum | Maximum | Mean | Std. Deviation |
|---|----|---------|---------|------|----------------|
| Circle the response that best describes how economic stability (income, expenses, debt) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. | 50 | 1 | 4 | 3.24 | .771 |
| Circle the response that best describes how the physical environment (housing, neighborhood safety) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. | 50 | 1 | 4 | 2.84 | .842 |
| Circle the response that best describes how education (understanding of instructions) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. | 50 | 1 | 4 | 2.16 | 1.315 |
| Circle the response that best describes how food (access to food sources in your area) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. | 50 | 1 | 4 | 1.88 | .872 |
| Circle the response that best describes how community resources (transportation services, case management) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. | 50 | 1 | 4 | 2.14 | 1.069 |
| Circle the response that best describes how healthcare (ability to access care) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. | 50 | 1 | 4 | 3.34 | .917 |
| | 50 | | | | |

Mean and Standard deviations

In table 13 listed above, the ability to access care had the highest mean value of 3.34 with a standard deviation of 0.917 and access to food had the lowest mean value of 1.88 with a standard deviation of 0.872. Access to healthcare, economic stability, and physical environment were the highest rated social determinants that participants reported had the most effect on their ability to follow-up. The lowest rated social determinants of health that had the lowest effects on their ability to follow-up included access to food, community resources, and education. The standard deviation was highest for the social determinants of education, community resources, and access to healthcare. This shows that the responses to social determinants of education, community resources, and access to health questions are more spread out from the average response. The social determinants with the lowest standard deviations include income, physical environment, and access to food. The lower standard deviations indicate responses are more close to the average response.

Chi-square testing

Chi-square test for Income (Table 14)

| | Observed N | Expected N | Residual |
|--------------------------------------|------------|------------|----------|
| No effect | 2 | 12.5 | -10.5 |
| Some Effect | 4 | 12.5 | -8.5 |
| A Considerable effect | 24 | 12.5 | 11.5 |
| Is the main reason I can't follow-up | 20 | 12.5 | 7.5 |
| Total | 50 | | |

Chi-Square Statistic for Income (Table 15)

| | |
|-------------|--|
| | Circle the response that best describes how economic stability (income, expenses, debt) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. |
| Chi-Square | 29.680 ^a |
| Df | 3 |
| Asymp. Sig. | .000 |

Chi-Square test for Physical Environment (Table 16)

| | Observed N | Expected N | Residual |
|--------------------------------------|------------|------------|----------|
| No effect | 4 | 12.5 | -8.5 |
| Some Effect | 10 | 12.5 | -2.5 |
| A Considerable effect | 26 | 12.5 | 13.5 |
| Is the main reason I can't follow-up | 10 | 12.5 | -2.5 |
| Total | 50 | | |

Chi-Square Statistic for Physical Environment (Table 17)

| | |
|-------------|--|
| | Circle the response that best describes how the physical environment (housing, neighborhood safety) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. |
| Chi-Square | 21.360 ^a |
| Df | 3 |
| Asymp. Sig. | .000 |

Chi-Square test for Education (Table 18)

| | Observed N | Expected N | Residual |
|--------------------------------------|------------|------------|----------|
| No effect | 25 | 12.5 | 12.5 |
| Some Effect | 6 | 12.5 | -6.5 |
| A Considerable effect | 5 | 12.5 | -7.5 |
| Is the main reason I can't follow-up | 14 | 12.5 | 1.5 |
| Total | 50 | | |

Chi-Square Statistic for Education (Table 19)

| | |
|-------------|--|
| | Circle the response that best describes how education (understanding of instructions) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. |
| Chi-Square | 20.560 ^a |
| Df | 3 |
| Asymp. Sig. | .000 |

Chi-Square test for Food Access (Table 20)

| | Observed N | Expected N | Residual |
|--------------------------------------|------------|------------|----------|
| No effect | 19 | 12.5 | 6.5 |
| Some Effect | 21 | 12.5 | 8.5 |
| A Considerable effect | 7 | 12.5 | -5.5 |
| Is the main reason I can't follow-up | 3 | 12.5 | -9.5 |
| Total | 50 | | |

Chi-Square Statistic for Food Access (Table 21)

| | |
|-------------|--|
| | <p>Circle the response that best describes how food (access to food sources in your area) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department.</p> |
| Chi-Square | 18.800 ^a |
| Df | 3 |
| Asymp. Sig. | .000 |

Chi-Square test for Community Resources (Table 22)

| | Observed N | Expected N | Residual |
|--------------------------------------|------------|------------|----------|
| No effect | 18 | 12.5 | 5.5 |
| Some Effect | 14 | 12.5 | 1.5 |
| A Considerable effect | 11 | 12.5 | -1.5 |
| Is the main reason I can't follow-up | 7 | 12.5 | -5.5 |
| Total | 50 | | |

Chi-Square Statistic for Community Resources (Table 23)

| | |
|-------------|--|
| | <p>Circle the response that best describes how community resources (transportation services, case management) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department.</p> |
| Chi-Square | 5.200 ^a |
| df | 3 |
| Asymp. Sig. | .158 |

Chi-Square test for Healthcare (Table 24)

| | Observed N | Expected N | Residual |
|--------------------------------------|------------|------------|----------|
| No effect | 4 | 12.5 | -8.5 |
| Some Effect | 3 | 12.5 | -9.5 |
| A Considerable effect | 15 | 12.5 | 2.5 |
| Is the main reason I can't follow-up | 28 | 12.5 | 15.5 |
| Total | 50 | | |

Chi-Square Statistic for Healthcare (Table 25)

| | |
|-------------|--|
| | Circle the response that best describes how healthcare (ability to access care) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. |
| Chi-Square | 32.720 ^a |
| df | 3 |
| Asymp. Sig. | .000 |

Test - 1

In order to determine whether there is a significant difference in the responses regarding economic stability (income, expenses, debt) effects participant's ability to keep follow-up appointments at the time of discharge from the emergency department, a chi square test for equal proportions was applied by using SPSS.

In table 15 above the value of chi square statistic is 29.68 and its corresponding p value is $0.000 < 0.05$. Since the p value is less than 0.05, it can be concluded that, there is a significant difference in the responses regarding economic stability (income, expenses, debt) effects the ability to keep the follow-up appointments at the time of discharge from the emergency department.

Test - 2

In order to determine whether there is a significant difference in the responses regarding physical environment (housing, neighborhood safety) effect the ability to keep the follow-up appointments at the time of discharge from the emergency department, a chi square test for equal proportions was applied by using SPSS.

In table 17 above the value of chi square statistic is 21.36 and its corresponding p value is $0.000 < 0.05$. Since the p value is less than 0.05, it can be concluded that, there is a significant difference in the responses regarding physical environment (housing, neighborhood safety) effect the ability to keep the follow-up appointments at the time of discharge from the emergency department.

Test - 3

In order to determine whether there is a significant difference in the responses regarding education (understanding of instructions) effect the ability to

keep the follow-up appointments at the time of discharge from the emergency department, a chi square test for equal proportions was applied by using SPSS.

From the table above the value of chi square statistic is 20.56 and its corresponding p value is $0.000 < 0.05$. Since the p value is less than 0.05, it can be concluded that, there is a significant difference in the responses regarding education (understanding of instructions) effect the ability to keep the follow-up appointments at the time of discharge from the emergency department.

Test - 4

In order to determine whether there is a significant difference in the responses regarding food (access to food sources in the area) effect the ability to keep the follow-up appointments at the time of discharge from the emergency department, a chi square test for equal proportions was applied by using SPSS.

From the table above the value of chi square statistic is 18.8 and its corresponding p value is $0.000 < 0.05$. Since the p value is less than 0.05, it can be concluded that, there is a significant difference in the responses regarding food (access to food sources in the area) effect the ability to keep the follow-up appointments at the time of discharge from the emergency department.

Test - 5

In order to determine whether there is a significant difference in the responses regarding community resources (transportation services, case management) effect the ability to keep the follow-up appointments at the time of discharge from the emergency department, a chi square test for equal proportions was applied by using SPSS. The null and alternate hypothesis are as follows, -up appointments at the time of discharge from the emergency department.

From the table above the value of chi square statistic is 5.2 and its corresponding p value is $0.158 > 0.05$. Since the p value is more than 0.05, it can be

concluded that, there is no significant difference in the responses regarding Community resources (transportation services, case management) effect the ability to keep the follow-up appointments at the time of discharge from the emergency department.

Test - 6

In order to determine whether there is a significant difference in the responses regarding healthcare (ability to access care) effects the ability to keep the follow-up appointments at the time of discharge from the emergency department, a chi square test for equal proportions was applied by using SPSS.

From the table above the value of chi square statistic is 32.72 and its corresponding p value is $0.000 < 0.05$. Since the p value is less than 0.05, it can be concluded that, there is a significant difference in the responses regarding healthcare (ability to access care) effects the ability to keep the follow-up appointments at the time of discharge from the emergency department.

Summary of Results and Findings

This study produced some interesting results with the data found. The most commonly reported age of the participants was 51-65 years of age (46). 44% of the respondents had described their ethnicity as African Americans and they account for the largest ethnicity in the sample size. The second largest ethnicity of the participants identified themselves as Latino at 26%. In regards to education level, 50% of the participants completed high school or received their GED. Participants who did not finish high school or did not receive their GED accounted for the second largest group at 26%.

All participants identified their gender as either male or female. The majority of participants were male measuring at 86% of the sample. Concerning income, 54% of participants had an income of less than \$10,000 dollars, this was

self-reported in the majority of participants. The second largest group of the sampled self reported income of \$30,000 to \$39,000 dollars at 24%. This demonstrated that some homeless patients were able to work while homeless. In connection to language, the most preferred language reported among the participants was English at 64%. The second most reported preferred language was Spanish at 30%.

With respect to economic stability, 48% of participants felt economic stability has a considerable effect on their ability to follow-up. 40% of participants report that economic stability is one of the main reasons they may not follow-up. In regards to physical environment 52% of participants reported that physical environment had a considerable effect on their ability to follow-up and 20% of participants reported that physical environment was one of the main reasons they could not follow-up. Another 20% of participants reported physical environment had some effect on their ability to follow up. Physical environment was a social determinants that the majority of participants reported as an influential factor in their ability to follow-up.

Education proved not to be one of the most common factors influencing follow-up for this population with 50% of participants reporting education had no effect on their ability to follow-up. Conversely, 28% of participants reported that this is the main reason why they cannot follow-up. Interestingly, food access was reported by 42% of participants as having some effect on their ability to follow-up. However, 38% of participants reported food access has no effect on their ability to follow-up. Community resources showed that 36% of participants reported that community resources have no effect on their ability to follow-up while 28% of participants reported community resources had some effect on their ability to follow-up.

Responses to social determinants of education, community resources, and access to health questions are more spread out from the average responses. The social determinants with the lowest standard deviations include income, physical environment, and access to food indicating responses were more close to the average response.

Based on the P values there was a significant difference in the responses regarding economic stability (income, expenses, debt) effects the ability to keep the follow-up appointments at the time of discharge from the emergency department. . The P values also showed there is a significant difference in the responses regarding physical environment (housing, neighborhood safety) effect the ability to keep the follow-up appointments at the time of discharge as well as education (understanding of instructions), food (access to food sources in the area), and healthcare (ability to access care). There is no significant difference in the responses regarding Community resources (transportation services, case management) effect the ability to keep the follow-up appointments at the time of discharge from the emergency department. The most commonly social determinants to impact follow among this group include economic stability, physical environment, and access to healthcare.

CHAPTER 5: DISCUSSION

This chapter discusses the conclusion and implications of the data collected from the study. This study aimed to understand the increased incidence of being lost to follow-up among the homeless population who were discharged from the emergency department at San Francisco General Hospital by examining the social determinants of health. As mentioned previously the survey has designed by the co-investigator of this study and it's validity and reliability were not established.

Being lost to follow-up comes with risks and complications, especially in a vulnerable and under-served population like the homeless. Homeless patients who do not attend their follow-up appointments are at risk for worsening complications, disability and death. The emergency room may also suffer due to an increased bounce back rate, which leads to emergency department overcrowding. Furthermore many homeless patients who miss their follow-up will ultimately require admission to the hospital. Preventable admissions decreases the availability of inpatient beds. Should a hospital have no more inpatient beds the emergency department becoming a hold zone for admitted patients. This limits the beds and staff available for patients presenting to the emergency department. The limited amount of available staff and beds for emergency room patients can further worsen emergency department overcrowding. Therefore when looking at the bigger picture of patient flow through the emergency department and hospital, the significance of follow-up in the population becomes more apparent.

A survey was conducted to determine the common social determinants that participants feel influence their ability to follow-up. The survey yielded results that reflected the participant's perspective on how social determinants altered their

ability to follow-up. This evaluation of the social determinants of health provided valuable feedback from the homeless patients who present for care to San Francisco General Hospital. The feedback will be used to improve the discharge process of homeless patients from the emergency department with consideration for their social determinants of health. Phase two will take the results found here and develop an intervention to be used by emergency clinicians when discharging homeless patients with follow-up. Phase three will then track the patients who received the intervention in order to determine if the intervention was successful in reduce the incidence of being lost to follow-up.

Discussion of Results and Findings

The responses from all candidates for the survey were encouraging. All candidates approached for the study agreed to participate in the survey. The first question on the survey dealt with the age of the participant. The majority of participants were aged 51-65. The highest amount of participants belonged to this age group. This may shift efforts to focus heavily on older individuals and their specialized needs during the intervention phase of the project.

The demographic data showed that African American and Latino ethnic minority groups made up the majority of the participants. This may relate to how ethnic minority groups are typically considered under-served with more socioeconomic challenges as compared to ethnicity majority groups such as Caucasians. Consideration should also be given to immigrants among this group as they fall into the ethnic minority and share struggles with social determinants as well. Although it was not previously addressed in the survey, immigration status can result in homelessness and it deserves consideration in future studies.

Looking at the gender results, this study found that participants were predominantly male. This suggest that there are more males in the homeless

population of San Francisco that visit the emergency department at San Francisco General Hospital than there are females. More studies are needed to investigate if this is true and if it is true this would require more research into why there are more males than females in this subset of the population. One theory for this includes that there are more specialized resources inclusive to females that work on combating homelessness (Tsai et al, 2014, p. 29-35).

When looking at income responses it was determined that the majority of participants reported an income of less than \$10,000 dollars a year. This would suggest that the majority of homeless patients have little to no income to support themselves. The next largest group responded with reported incomes of \$30,000 to \$39,000 dollars a year. This suggests that some homeless are able to procure an income but it is not a livable income in the area of San Francisco.

In approaching language, the majority of participants listed English as their preferred language. This suggests that English is the most common language spoken among homeless patients in San Francisco who come to San Francisco General Hospital emergency department for care. Spanish was the second highest language reported which suggests that many homeless patients who seek care at San Francisco General Hospital emergency room are coming from areas where English is not the predominant language.

Overall the responses collected isolated the common social determinants of health that greatly influenced the ability to follow-up among this sample. The social determinants of health with the most reported responses in this sample indicating that they were a major factor affecting the participant's ability to follow up include economic stability, physical environment, and access to healthcare. Reviewing some of the literature presented in chapter two, author Andrew Coyle advocated for hospital programs that addressed both economic stability and

physical environment social determinants in order to improve care. Education, food, and community resources were found to be the least reported social determinants of health influencing the groups ability to follow-up after discharge from the emergency room at San Francisco General Hospital. The literature review for this project reflected this as there were no articles available on the social determinants of education, food, and community resources as major influencers in care management of homeless patients. This seems more particular to the perspective of the study participant, however, it should not be assumed that education, food, and community resources are minor influences in the health management of homeless patients.

When looking at the data overall and whether each social determinant had statistical significance on the ability to follow-up it was determined that economic stability, physical environment, food access, education, and access to healthcare significant to their ability to follow-up while community resources was found to not be significant. This suggests that shelter, income, food procurement, understanding of instruction, and available healthcare options were some of the driving forces that determined if a participant could follow-up. Moreover, addressing these issues in real time with concrete plans for each social determinant deficit will decrease the incidence of patients being lost to follow-up after discharge from the emergency department at San Francisco General Hospital. Addressing them with the intervention will take place in phase two of this project, however, the data represented here illustrates how statistically significant most determinants of health. Furthermore, the data shows social determinants as valid factors influencing the homeless patient's ability to follow up.

Limitations

The study was small (n=50) which limits the application of the results. Sample bias is present as the sampling of patients was performed from 11am to 11pm making the sample not truly random. There was also possible participant bias due to personal involvement with the site. The co-investigator conducting the survey was also employed in the emergency department at San Francisco General Hospital. The results may not be generalizable as there are particular to homeless patients at San Francisco General emergency department. The instrumentation may be considered a limitation as the survey tool did not have reliability or validity established. There was also limited research on the topic of social determinant evaluation in the homeless population of San Francisco.

Recommendations

Follow up care is necessary in all populations to address developing concerns and to decrease possible complications. Hospital systems like San Francisco Health Network must shift focus on the social determinants of health when planning care of patients from vulnerable populations. In order to have successful outcomes, San Francisco General Hospital emergency room clinicians should consider the social determinants of health when planning care for patients who identify as homeless. This convenience sample, as simple as it was, will still play a significant role in addressing the incidence of being lost to follow-up at San Francisco General Hospital. This project was worthwhile because it was the first step taken in working towards resolving health inequalities in this particular population.

Future Phases

This project will move into phase two using the data collected here to design interventions that address the commonly reported social determinants of

health. Once the interventions are developed by the researchers, they will be presented to the emergency department leadership for feedback. After discussion and revision of the interventions, the interventions will be implemented by the emergency department clinicians responsible for follow-up planning among voluntary participants in the study. The project will then move on to phase three and participants who agreed to participate in the phase 2 study will have their care tracked through the electronic health record to determine if follow-up was made. The data will then be compiled to elicit whether the developed interventions had a significant impact on improving the follow-up of the participants.

Conclusion

In this DNP project, the phenomena of being lost to follow-up after discharge from the emergency department at San Francisco General Hospital was introduced and its significance as it relates to poor outcomes among homeless patients was established. A review of literature showed there are encouraging methods to address the complex health needs of the homeless population and focusing on the social determinants of health was one promising strategy. This study conducted a survey focused on how the participant related particular social determinants of health and the impact they had on the participant's ability to follow-up.

The preliminary results found in this study are encouraging. Although the sample size was smaller than desired, the study was able to capture the common social determinants of health from the perspective of the homeless patient, that affected the ability to follow up after discharge from the emergency department at San Francisco General Hospital. The results show that it is crucial that the social determinants of health are considered when arranging follow up care in this particular population.

This project contributes to the healthy people 2020 initiative of using social determinants of health to reduce health inequities among vulnerable populations. This may be a viable solution to addressing this particular phenomena for San Francisco General Hospital as well as other health institutions. This study will help fill in gaps in literature addressing the incidence of poor follow-up among the homeless populations.

Vulnerable populations require more extensive care as their vulnerabilities make it more difficult to manage their health. The homeless population is no exception. In order to reduce health disparities among this population the focus on their social determinants has become necessary. The benefits of this holistic type of approach include providing opportunities for complete care and ensuring all aspects of the patient's life have been considered.

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APPENDICES

APPENDIX A: CONSENT FOR SURVEY

Consent Form

Following up from the emergency department for the homeless patient:

Examining the social determinants of health

Dear Study Participant,

You are being asked to take part in a research study that examines the social determinants of health (Economic stability, education, food access, physical environment, and community resources) among homeless individuals and how these impact their ability to attend follow-up appointments after emergency department discharge. Please read this form carefully and ask any questions you may have before agreeing to take part in the study.

What the study is about: The purpose of this study is to learn what common social determinants of health are contributing to the homeless patient's inability to attend scheduled follow-up appointments after

What is being asked of you: If you agree to be in this study, a survey will be administered to you, which asks you to provide some general demographic information and then asks you rate each social determinants in regards to how you feel it may contribute to your inability to follow-up. The rating system is listed as follows: 1 = very unlikely, 2 = unlikely, 3 = neither unlikely nor likely, 4 = likely, 5 = very likely

Risks and benefits: There is the risk that you may find some of the questions to be intrusive. There are no benefits to you.

Compensation: There is no compensation for participation in this study.

Confidentiality: The responses provided to the survey will be confidential. The records of this study will be kept private. In any sort of report we make public we will not include any information that will make it possible to identify you. Research records will be kept in a locked file; only the researcher will have access to the records

Taking part is voluntary: Taking part in this study is completely voluntary. If you decide to take part, you are free to withdraw at any time.

Following up from the emergency department for the homeless patient:

Examining

the social determinants of health

If you have questions: The researcher conducting this study is Robert Gnat. Please ask any questions you have now. If you have questions later, you may contact Robert Gnat at 628-206-8111 or Rgnat21@mail.fresnostate.edu. If you have any questions or concerns regarding your rights as a subject in this study, you may contact the Institutional Review Board (IRB) at California State University, Fresno at Phone: 559-278-2448 or email: cphs@mail.fresnostate.edu.

You will be given a copy of this form to keep for your records.

Statement of Consent: I have read the above information, and have received answers to any questions I asked. I consent to take part in the study.

Your Signature _____ Date

Your Name (printed)

This consent form will be kept by the researcher for at least three years beyond the end of the study

APPENDIX B: SURVEY

Objectives

1. To understand the social determinants of health among the homeless population presenting to San Francisco General Hospital Emergency Department.
2. Elicit feedback from participants to improve follow-up from the emergency department among this population.

Demographics

Age:

- 18-35 36-50 51-65 66 and older

Ethnicity:

- Caucasian Latino African America
 Asian Pacific Islander American Indian
 Other Prefers not to answer

Education:

- Some High school High school or GED Some College
 Associates Degree Bachelor's Degree Graduate Degree
 Post Graduate Prefer not to answer

Gender:

- Male Female Other

Income:

- Less than \$10,000 \$10,000 to \$29,000 \$30,000 to \$39,000
 \$40,000 to \$49,000 \$50,000 to \$59,000 \$60,000 to \$69,000
 \$70,000 to \$79,000 \$80,000 and more

Preferred Language:

- English Spanish Chinese Vietnamese
 Russian German Tagalog Other

| | No effect | Some Effect | A Considerable effect | Is the main reason I can't follow-up |
|--|-----------|-------------|-----------------------|--------------------------------------|
| Circle the response that best describes how economic stability (income, expenses, debt) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. | 1 | 2 | 3 | 4 |
| Circle the response that best describes how the physical environment (housing, neighborhood safety) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department. | 1 | 2 | 3 | 4 |
| Circle the response that best describes how education (understanding of instructions) effects your ability to keep your follow-up appointments at the time of discharge from the emergency | 1 | 2 | 3 | 4 |

| | | | | |
|--|----------|----------|----------|----------|
| <p>department.</p> | | | | |
| <p>Circle the response that best describes how food (access to food sources in your area) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department.</p> | <p>1</p> | <p>2</p> | <p>3</p> | <p>4</p> |
| <p>Circle the response that best describes how community resources (transportation services, case management) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department.</p> | <p>1</p> | <p>2</p> | <p>3</p> | <p>4</p> |
| <p>Circle the response that best describes how healthcare (ability to access care) effects your ability to keep your follow-up appointments at the time of discharge from the emergency department.</p> | <p>1</p> | <p>2</p> | <p>3</p> | <p>4</p> |

APPENDIX C: GUIDELINE FOR SOCIAL DETERMINANTS OF
HEALTH

| Economic Stability | Neighborhood and Physical Environment | Education | Food | Community and Social Context | Health Care System |
|--------------------|---------------------------------------|---------------------------|---------------------------|------------------------------|---|
| Employment | Housing | Literacy | Hunger | Social integration | Health coverage |
| Income | Transportation | Language | Access to healthy options | Support systems | Provider availability |
| Expenses | Safety | Early childhood education | | Community engagement | Provider linguistic and cultural competency |
| Debt | Parks | Vocational training | | Discrimination | Quality of care |
| Medical bills | Playgrounds | Higher education | | | |
| Support | Walkability | | | | |

Health Outcomes

Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

APPENDIX D: IRB APPROVAL LETTERS



1001 Potrero Avenue
San Francisco, CA 94110
Phone (415) 206-8000
Fax (415) 206-6922
ZuckerbergSanFranciscoGeneral.org

August 9, 2018

To Whom It May Concern:

This letter is to inform you that employee Robert Gnat will be allowed to perform a needs assessment for homeless patients in the triage area of the emergency room at Zuckerberg General Hospital in San Francisco, California. The needs assessment is a quality improvement project and does not meet the criteria for internal review board approval. This needs assessment is part of his doctoral program through the Norcal DNP consortium offered through CSU Fresno and San Jose State University.

A handwritten signature in black ink, appearing to read "Be-Verlyn T. Navarro".

Be-Verlyn T. Navarro, RN, MD, MHA(C)
Director, Emergency Department
Zuckerberg San Francisco General
Hospital and Trauma Center
1001 Potrero Avenue Room
San Francisco, CA 94110
Phone: (628)206-5918





California State University, Fresno
School of Nursing
IRB Approval

Date: December 7, 2018

RE: DNP1832 Following up from the emergency department for the homeless patient: Examining the social determinants of health

Dear Robert Gnat,

As the Chair of the School of Nursing Research Committee, serving as the Institutional Review Board for the School of Nursing, I have reviewed and approved your review request for the above-referenced project for a period of 12 months. I have determined your study to meet the criteria for Minimal Risk IRB review.

Under the Policy and Procedures for Research with Human Subjects at California State University, Fresno, your proposal meets minimal risk criteria according to section 3.3.7: Research in which the risks of harm anticipated are not greater, probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

The Research Committee may periodically wish to assess the adequacy of research process. If, in the course of the study, you consider making any changes in the protocol or consent form, you must forward this information to the Research Committee prior to implementation unless the change is necessary to eliminate an apparent immediate hazard to the research participant(s).

This study expires: December 7, 2019

The Research Committee is authorized to periodically assess the adequacy of the consent and research process. All problems having to do with subject safety must be reported to the Research Committee. Please maintain proper data control and confidentiality.

If you have any questions, please contact me through the CSU, Fresno School of Nursing Research Committee at nishanair@csufresno.edu.

Sincerely,

Nisha Nair, DNP, RNC, CNS, CNE, IBCLC
School of Nursing, Research Committee, Chair

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THE CALIFORNIA STATE UNIVERSITY

APPENDIX E: CERTIFICATE OF COMPLETION



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Robert Gnat** successfully completed the NIH Web-based training course "Protecting Human Research Participants."

Date of Completion: 04/15/2018

Certification Number: 2797054

