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Impact of an Outpatient Chronic Care Model on Uninsured Inpatient and Emergency Department Utilization

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Walden University

College of Management and Human Potential

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Jamie Judd

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Walden University
2022

Abstract

Impact of an Outpatient Chronic Care Model on Uninsured Inpatient and Emergency
Department Utilization

by

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MBA, South University, 2010

BBA, University of Memphis, 1989

BS, University of Memphis, 1989

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Healthcare Administration

Walden University

February 2023

Abstract

Healthcare systems incur significant uncompensated costs due to uninsured chronic disease patients' overutilization of urgent and emergent emergency care. This study was important because there was very little literature addressing the impact of the chronic care model (CCM) on reducing uncompensated healthcare system costs regarding patients with chronic disease. The purpose of the study was to investigate whether the Healthy Education Lifestyles Program (HELP) was of any significance to healthcare system's cost of uninsured chronic disease patients. The theoretical foundation for the study was the CCM espoused by Wagner and colleagues. The research questions were to determine significant differences in inpatient and emergency costs between HELP patients and a similar control group. A quantitative, quasi-experimental design was used with data from electronic health records and the cost accounting system to compare uninsured HELP patients' hospital costs post-enrollment in the program and a similar control group. A Mann-Whitney analysis demonstrated a significant difference in emergency department and inpatient costs between uninsured HELP patients post-one-year enrollment and the control group. Findings indicated that the HELP outpatient CCM was not significant in reducing healthcare system's cost of uninsured chronic disease patients' utilization of urgent and emergent services. Significant positive social change could be created if healthcare systems shift focus from treating uninsured chronic disease patients in high-cost settings to providing a lower cost program with ongoing management and care thus improving the health of these individuals and reducing the need for high-cost services.

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Dedication

This study is dedicated to the patients and staff of the Healthy Education Lifestyles Program (HELP). The patients have put tremendous effort into making lifestyle changes to improve their quality of life. The staff provide a unique experience for these at-risk patients and excellent patient care. Together, these individuals work hard to make this program successful.

This study is also dedicated to my parents and children. Thank you for always supporting and encouraging me to be my best. I would not have gone this far without you.

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Section 1: Foundation of the Study and Literature Review

This study was designed to understand how the outpatient chronic care model (CCM) impacts uninsured inpatients and emergency department (ED) utilization. Better understanding could result in better care for that patient population and reduce health system financial burdens. The goal of the study was to investigate whether the Healthy Education Lifestyles Program (HELP) outpatient CCM, combining clinical care, education, social determinants of health support, and peer support, was of any significance to a healthcare system's cost of uninsured chronic disease patients' overutilization of urgent and emergent services. It has been established that there are gaps in care between uninsured and insured adults, with the uninsured being seven times more likely than insured to delay or forego needed care, to have emergency admissions for chronic conditions, to have longer lengths of stay, and to have higher charity care costs for the healthcare system (Choi et al., 2020).

Because health insurance is a significant determinant of access to care and health outcomes, having or not having health insurance can significantly impact chronic disease management and control. Uninsured and Medicaid-insured individuals, for example, experience worse health outcomes than privately insured and Medicare-insured individuals, including needless hospitalizations. For instance, diabetes admission rates for Medicaid and uninsured patients were similar to or greater than those for diabetic patients who were privately insured (Fisher & Ma, 2015). Beyond health coverage, the chance for social transformation includes exploring healthcare models that improve both the quality and access to health services.

Section 1 contains the study focus and provides background on the HELP and its use of the CCM. Following the background, the problem statement, purpose of the study, and the research questions are covered. Next, the theoretical foundation using Wagner et al.'s (1996) CCM and the nature of the study are discussed. A review of the literature and the search strategy are then included, as well as a definition of terms. The section continues by addressing the assumptions, limitations, scope, and significance. Section 1 concludes with a summary and conclusion.

Background

Gaps in care are significant for the uninsured (Choi et al., 2020). Lack of insurance coverage drives individuals to delay necessary healthcare, skip preventative care, and utilize inappropriate levels of care (Choi et al., 2020; Fisher & Ma, 2015). As a result, the uninsured with a chronic disease do not have access to self-management education, consistent and appropriate healthcare, necessary medications, and supplies, and they frequently have other barriers due to other social determinants of health (SDoH). These patients frequently use the emergency department for care resulting in uncompensated costs for the healthcare system (Choi et al., 2020; Garthwaite et al., 2018). Alternate models of care can provide consistency, education, and assistance in managing chronic conditions. Primary care practices that use the CCM support chronically ill patients' self-management abilities through education, lifestyle programs, skill-building, and self-efficacy; redesign the way chronically ill patients' care is delivered; and use evidence-based care; however, uninsured patients rarely have access to this type of care (Cramm & Nieboer, 2015).

Many studies address the use of the chronic care model in addressing health outcomes or utilization. Minimal research exists to determine the impact of the CCM on uncompensated costs to the healthcare system by uninsured chronic disease patients. This study addresses any relationships between HELP and uncompensated care costs in the inpatient and ED settings.

CCM

Wagner et al.'s CCM utilizes a holistic approach to care by focusing on individualized care plans (Wagner et al., 2005). The primary focus is the needs of each patient reaching far beyond clinical care. The CCM utilizes a multidisciplinary approach to caring for the patient's needs (Wagner et al., 2005).

HELP

HELP is predicated on Wagner et al.'s (1996) CCM. It utilizes a three-pronged approach to care for uninsured, chronic disease patients including clinical care, intensive education, and support for SDoH. HELP consists of a multidisciplinary team of midlevel providers, social workers, nurse navigators, diabetes educators, dietitians, nurses, and other healthcare professionals as necessary to meet the needs of the patients. Patients are referred to resources to mitigate the barriers of SDoH.

Problem Statement

Gaps exist between uninsured and insured adults, with the uninsured being seven times more likely than insured to delay or forego needed care, have emergency admissions for chronic diseases, remain longer, and cost the healthcare system more in charity care or non-reimbursed expenses (Choi et al., 2020). Health systems lose money

due to uncompensated care provided to chronic disease patients who overuse urgent care and emergency services, and in this study, I evaluated if the HELP program would be able to provide better care at a lower cost (see Choi et al., 2020).

Individuals without insurance are more likely to visit the emergency room frequently, miss medical appointments repeatedly, and have lower glycemic and lipid management than those who can meet their requirements (Choi et al., 2020). Uninsured chronic disease patients also face significant unmet needs that result in dependence on hospital acute and emergent services (Fisher & Ma, 2015). CCMs have been utilized to address the requirements of fragile individuals throughout the healthcare continuum, with positive results in terms of health outcomes and more efficient access to healthcare services. CCM deployment has had an impact on a small group of individuals suffering from specific chronic conditions (Marcelli et al., 2017). Although researchers have investigated the high uncompensated costs on healthcare systems, there is very little or no literature addressing the impact of the CCM on reducing uncompensated healthcare system costs regarding patients with chronic disease. Existing studies are not specific to using the CCM for uncompensated chronic disease patients (Robusto et al., 2018; Stephenson et al., 2019).

Purpose of the Study

The purpose of this quantitative study was to investigate whether the HELP outpatient CCM was of any significance to healthcare systems cost of uninsured chronic disease patients' overutilization of urgent and emergent services. HELP was a program implemented by a healthcare system in North Texas. The study population included all

enrolled chronic disease HELP patients with at least three program visits. The timeframe for included patients was from December 201 through February of 2020 to avoid the impact of the Coronavirus 2019 (COVID-19) pandemic on the data. All patients resided in the north Texas area and were uninsured. The dependent variable was uncompensated costs of chronic disease patients, and the independent variable was HELP enrollment. The independent variable was impacted cost based on the variability of HELP enrollment. I explored if there was a significant difference in uninsured chronic disease HELP patients' ED costs during the 1-year post-enrollment compared to a similar uninsured chronic disease control group. It was important to explore the difference because it has been established that between uninsured and insured adults, gaps exist in the care, and the uninsured have the propensity to delay or forgo needed care at a rate seven times higher than insured, are more likely to experience emergency admissions for chronic conditions, have longer lengths of stay, and have higher charity care costs for the healthcare system (Choi et al., 2020). The study also explored if there was a difference in inpatient costs comparing those enrolled in HELP and a similar control group (Choi et al., 2020).

Research Questions and Hypotheses

Research Question 1 (RQ1): Is there a statistical difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing the emergency department?

*H*₀1: There is no statistical difference in cost 1-year post-enrollment between uninsured post HELP patients and a control group of similar uninsured chronic disease patients utilizing the emergency department.

*H*_a1: There is a statistical difference in cost 1-year post-enrollment between uninsured post HELP enrollment patients and a control group of similar uninsured chronic disease patients utilizing the emergency department.

Research Question 2 (RQ2): Is there a statistical difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing the inpatient services?

*H*₀2: There is no statistical difference in cost 1-year post-enrollment between uninsured post HELP enrollment patients and a control group of similar uninsured chronic disease patients utilizing inpatient services.

*H*_a2: There is a statistical difference in cost 1-year post-enrollment between uninsured post HELP enrollment patients and a control group of similar uninsured chronic disease patients utilizing inpatient services.

Theoretical Foundation for the Study

The theoretical foundation for the study was Wagner et al.'s (1996) CCM. The model addresses an organized, deliberate way of approaching chronic disease care by teaming informed patients with knowledgeable and proactive health care teams (Wagner et al., 2005). The model focuses on a more holistic approach to patient-centered care by focusing on the individual needs of each patient rather than one model of care for all. Wagner et al.'s (1996) model fit this study as the intervention worked with an

individualized treatment model. The logical connection between this framework and the nature of this study was that the intervention to be studied operates with an individualized treatment model based on the CCM (Wagner et al., 2005).

Clinical care, resources, and education were all available through HELP.

Uninsured patients received assistance from HELP to manage chronic diseases (i.e., diabetes, high cholesterol, congestive heart failure, and hypertension). Patients developed a relationship with the HELP staff through a coordinated, team-based approach, which was critical for establishing and maintaining accountability for improved health (see Cramm & Nieboer, 2015). Every HELP visit had three vital components including: (a) an individual visit with a midlevel practitioner, including appropriate lab tests; (b) a health literacy education session; and (c) support for SDoH. The purpose of this quantitative study was to investigate whether HELP modeled after Wagner et al.'s (1996) CCM combining clinical care, education, SDoH support, and peer support was of any significance to healthcare systems cost of uninsured chronic disease patients' overutilization of urgent and emergent services.

Nature of the Study

To address the research questions in this quantitative study, the approach included a quantitative, quasi-experimental design using secondary data. The data were abstracted from electronic health record (EHR) and the cost accounting system to compare uninsured chronic disease HELP patients' hospital costs 1-year post-enrollment in the program to a similar group of uninsured chronic disease patients. Both uninsured chronic disease patients with a minimum of three HELP visits were considered enrolled in HELP

and a similar uninsured chronic disease control group not enrolled, and with inpatient and ED encounters, were tracked.

The research questions involved determining whether there was a difference in ED costs using the HELP model among uninsured chronic disease patients when comparing 1-year post-enrollment to a similar uninsured chronic disease control group. The dependent variable used to answer this research question was ED cost for uninsured chronic disease patients, while the independent variable was HELP enrollment. Another goal was to determine whether there was a significant difference in uninsured chronic patients' inpatient costs when comparing 1-year post-enrollment to a similar uninsured chronic disease control group. The dependent variable used to answer this research question was inpatient cost for uninsured chronic disease patients, while the independent variable was HELP enrollment. For the planned research design, a dataset including all uninsured chronic disease HELP patients with three or more visits and a similar control group from the healthcare system's EHR and a matching cost accounting dataset were utilized.

Patients who are uninsured and chronically ill frequently seek primary care at EDs. They are heavy users of healthcare dollars because they are frequently caught in a cycle of repeated hospital admissions. Cline et al. (2018) studied changes in outcomes and hospital utilization after enrolling uninsured, chronic disease patients with overutilization of the ED and frequent hospitalizations and readmissions. The researchers found a significant decrease in hospitalizations and readmissions with a reduction in ED encounters though not significant, and a significant cost reduction in uncompensated care

to the hospital (Cline et al., 2018). This was important to this study because it provided support for the nature of the quasi-experimental quantitative design used to identify differences in ED visits and inpatient admissions compared to a similar control group that was not enrolled in HELP.

Creswell and Creswell (2018) explored a variety of quantitative designs, and they found the *t*-test can be used for the study's design type to determine statistical significance. This was important in relation to this study to ascertain statistical significance between the independent and dependent variables. The dataset included all uninsured chronic disease HELP patients with three or more visits and a similar control group from the health system's EHR along with a matching cost accounting dataset. The variables abstracted included the dependent variable of hospital costs for uninsured chronic disease patients and the independent variable of HELP enrollment.

Literature Search Strategy

A search of databases available to university students turned up a slew of hits. I generated additional specific subtopics after initial searches through Academic Search Complete at the library and the addition of healthcare-related databases showed a large diversity of similar research. PubMed, BioMed Central, government reports, Google Scholar, and EBSCOhost were used to search for peer-reviewed online resources. Additionally, I used a literature matrix, made by me, to permit quick comparisons among papers to evaluate scope. The search began with phrases and keywords such as *chronic disease, chronic care model, uninsured, hospital utilization, emergency department, inpatient, and cost of care* in the databases. The usage of these keywords and phrases

ensured a complete investigation of all aspects of health that were associated with the HELP outpatient CCM. Searches were limited to studies conducted from 2015 to 2022, and to peer-reviewed sources. An additional search was conducted using dissertations and doctoral studies.

Review of Literature

Introduction

The impact of an outpatient CCM on uninsured inpatient and ED utilization has been studied by several researchers, however, these studies have not included an impact on costs. The aim of the literature review was to present current information associated with the HELP outpatient CCM combining clinical care, education, SDoH support, and peer support. In reviewing the current research, I explored the gaps that exist in care between uninsured and insured adults. The literature review also covered the independent relationship between insurance status and potentially preventable admissions. I explored whether there was a significant difference in admission rates between those insured and uninsured. The literature review also covered uncompensated costs resulting from uninsured chronic disease patients' overutilization of urgent and emergent services for healthcare systems.

Gaps between the insured and uninsured

Millions of individuals have been left without health insurance in the past due to loopholes in the public insurance system and a lack of affordable private coverage, and the number of uninsured Americans has risen over time, especially during economic downturns (Garfield & Orgera, 2020). Despite significant advances in health coverage,

some individuals remained uninsured, and the Affordable Care Act (ACA) remains a political hot topic (Garfield & Orgera, 2020). Efforts to repeal and substitute the ACA stagnated in the summer of 2017, but the Trump Administration made significant modifications to the ACA's implementation that affected coverage (Garfield & Orgera, 2020). For the first time since the ACA's adoption, the number of uninsured individuals rose above 27 million (Garfield et al., 2020).

Since uninsured individuals tend to have more chronic health problems than younger individuals, Americans aged 50–64 with a higher risk of death were examined by Choi et al. (2020). They used logistic regression analysis to look at health characteristics and the sociodemographics of near-older Americans without health insurance who had private or public health insurance in the previous year (Choi et al., 2020). They calculated the chances of accessing healthcare for individuals without health insurance against those with private or public insurance (Choi et al., 2020). The researchers found that between uninsured and insured adults, gaps exist in care, and the uninsured are likely to forgo or delay much needed care at a rate seven times higher than insured, are more likely to experience emergency admissions for chronic conditions, have longer lengths of stay, and have higher charity care costs for the healthcare system (Choi et al., 2020). Only 15% to 23% of individuals were likely to have had contact with a healthcare practitioner in the previous year (Choi et al., 2020). Expanding health insurance to near-elderly persons would reduce morbidity, improve healthcare access, and improve quality of life (Choi et al., 2020). This was important in relation to this study because it provided justification for the operational problem. Healthcare systems incur

significant uncompensated costs due to uninsured chronic disease patients' overutilization of urgent and emergent services.

Researchers have also examined whether there is a significant difference in emergency/urgent hospital admissions that may have been avoided and differing health insurance status, between the insured and the uninsured patients with chronic diseases. Among patients with Type 2 diabetes, Fisher and Ma (2015) examined the relationships between potentially avoidable diabetes-related emergency/urgent hospital admissions and various health insurance status (i.e., private, Medicare, Medicaid, and uninsured), as well as other factors such as sociodemographic status (i.e., age and race), hospitalization status (i.e., previous hospitalizations and admissions), and health status. Adjusting for age, gender, previous hospitalizations, race/ethnicity, weekend admissions, complications, region, and comorbidity, multivariable logistic regression modeling was used with diabetes-related emergency hospitalizations as the outcome variable and health insurance status as the primary exposure independent variable (Fisher & Ma, 2015). Fisher and Ma (2015) found that Medicaid and uninsured diabetes admission rates were similar or higher than those of diabetic insured patients. This was important to this study because it provides justification for the operational problem that uninsured chronic disease patients are more likely to have emergent or urgent admissions related to their disease.

Studies have also explored the difference in uncompensated care between the insured and the uninsured. In the provision of uncompensated care, the size of the uninsured population should be a primary consideration. If individuals are insured, they rarely require uncompensated care. Garthwaite et al. (2018) studied the Tennessee and

Missouri Medicaid contraction's impact on uncompensated care. They studied uncompensated care, or medical care for which no payment is received, using previously confidential hospital financial data (Garthwaite et al., 2018). The authors estimated that each additional uninsured individual costs hospitals about \$800 per year based on panel data and case studies (Garthwaite et al., 2018). Garthwaite et al. found that increases in the uninsured population reduce hospital profit margins, implying that hospitals do not pass on all uncompensated-care expenses to other parties like privately insured patients. When a hospital closes, a neighboring hospital's uncompensated-care costs rise as well (Garthwaite et al., 2018). They found an 18% increase in uncompensated care for hospitals with the increase in uninsured, primarily born in acute care hospitals and hospital closures placing a greater burden on neighboring facilities (Garthwaite et al., 2018). This was important to this study because rising uncompensated care costs contribute negatively to a hospital's bottom line.

Medicaid expansions under the ACA were designed to enhance access to care and health status for low-income non-elderly individuals. Previous research found a correlation between Medicaid expansion and lower death rates. Gosh (2018) studied the impact of Tennessee's contraction of Medicaid on Medicaid and uninsured admissions through the ED. Gosh found an increase in uninsured patients admitted through the ED, particularly for ambulatory care sensitive conditions (ACSC), increased after contraction of Medicaid. This was important to this study because it supports an increase in uninsured results in ED hospital admissions for ACSC.

Improving Healthcare for the Uninsured

Researchers have studied ways of bridging the healthcare gap between the insured and the uninsured. Hindocha et al. (2013) examined a chronic disease management program for uninsured patients in Rhode Island that provides continuity of treatment, quarterly goal-setting meetings, and healthy lifestyle interventions. Participants in the program utilized the local ED 60% less than Medicaid-insured Rhode Island residents and had 61% fewer possibly preventable ED visits (Hindocha et al., 2013). The program's good impact on chronic disease outcomes and ED use by uninsured patients shows that programs like that could help state legislators justify funding such programs, which save on healthcare overall cost (Hindocha et al., 2013).

Free clinics are volunteer-run groups that provide low-income individuals with health treatment for free or at a low cost. A free clinic in a community can provide ambulatory care for uninsured individuals, decreasing the need for expensive hospital admissions for ACSC. Hutchison et al. (2018) examined free clinics in North Carolina to determine if they correlated in a reduction of uninsured persons' hospitalizations for ACSC. The researchers used hospital discharge data from North Carolina between 2003 and 2007 that was limited to 270,325 uninsured persons living in North Carolina (Hutchison et al., 2018). Hospitalizations for ACSC were detected using prevention quality indicators (Hutchison et al., 2018). Logistic regression analysis was used to imitate a pre/post research design due to the addition of new free clinics in select counties throughout this time period and county-level and year fixed effects (Hutchison et al.,

2018). Hutchison et al. found ACSC hospitalizations in areas with a free clinic demonstrated a 9% reduction for chronic conditions.

Utilization of Healthcare Services

Understanding the role of healthcare policies for chronic disease patients in health centers might help policymakers plan and improve programs that suit the needs of this vulnerable group of individuals. These policies influence how these patients utilize medical services. Patients with Medicaid coverage and uninsured patients treated at health centers in the United States were compared in terms of the number of chronic illnesses, health service utilization, and access to care by Liang et al. (2019). The number of chronic illnesses, prescription medication use, physician visits, unmet need for care, access to a typical provider of care, and unmet need for prescription drugs were all measured (Liang et al., 2019). Researchers used logistic regression models and a multiple linear regression model to explore the relationships between Medicaid and other health-related determinants and outcome indicators (Liang et al., 2019). Liang et al. (2019) found similar numbers of chronic diseases in Medicaid and uninsured patients but significant differences in utilization, unmet healthcare needs, and access to care.

In order to project the likely influence of health care reform on ED utilization, Lozano et al. (2015) aimed to uncover the motivators underlying ED use in patients admitted to a university teaching hospital. The authors discovered that responders went to the ED mostly because they thought their situation was a medical emergency (Lozano et al., 2015). Their lack of insurance and the expenditures of care it entailed resulted in delays in seeking treatment, poor access, and a limited ability to manage chronic illnesses

(Lozano et al., 2015). As a result, they were admitted. Affordability lowers the financial obstacles to getting health insurance; however, timely and efficient access to primary care was a larger driver of ED use in the sample used (Lozano et al., 2015). Access to health treatment is not guaranteed by having health insurance. Patients may continue to face considerable difficulties in managing chronic illnesses.

Community-based programs customized for underprivileged individuals who lack access to adequate health care can have an impact on future health outcomes. Patel and Cadet (2017) studied the efficacy of various free clinic interventions for communities put in place to overcome impediments to accessible health care. The authors found that educational interventions demonstrated improved chronic disease health outcomes (Patel & Cadet, 2017). The researchers came to the conclusion that public health programs for underprivileged patient populations should consider combining Healthy People 2020 goals with free clinic educational interventions that have previously demonstrated positive health outcomes in chronic illness patients (Patel & Cadet, 2017).

CCM-Based Program

The frequency of patients with chronic diseases is steadily rising, putting pressure on healthcare systems' long-term viability. CCMs have been utilized to address the requirements of fragile individuals throughout the healthcare continuum with positive results in terms of health outcomes and more efficient access to healthcare services. Robusto et al. (2018) studied the effects of the Puglia Program on healthcare utilization. They found that unplanned hospitalizations were significantly reduced after enrollment in the Puglia Program (Robusto et al., 2018). Compared to patients in usual care with

equivalent clinical and demographic features, the inclusion of chronic patients in a CCM-based program was significantly related to a lower recourse to unplanned hospital admissions in a population-based cohort (Robusto et al., 2018).

Stephenson et al. (2019) conducted systematic reviews and meta-analysis of literature regarding integrated care across the continuum and its impact on hospital utilization. This fast evaluation reviewed existing meta-analyses and systematic reviews that included individuals with chronic diseases, given the large amount of literature present on the subject (Stephenson et al., 2019). Any integrated care strategy that included patient management across the variety of care with the goal of providing greater care in community settings was examined for inclusion (Stephenson et al., 2019). Stephenson et al. (2019) found evidence suggesting overall reductions in hospital utilization.

Wagner et al. (1996) initially outlined the CCM as an evidence-based model of care incorporating planned care, practice redesign, increased self-management skills and behavior change, clinical expertise, and data availability regarding patients. They outlined five health care system components that are significant to meet the needs of chronic disease patients including: (a) evidence-based protocols, (b) reorganization of practitioner roles and practice patterns, (c) increased patient education, (d) available chronic disease expertise, and (e) organized and quickly accessed clinical data for patients (Wagner et al., 1996).

The judicious use of established medications and other therapeutic technologies and competent patient self-management is critical to the health outcomes of patients with

significant chronic illnesses. Clinical decisions in effective chronic disease care are based on the best, most rigorous scientific data or evidence-based medicine. Efforts to improve patient participation in care and treatment planning and collaborative goal-setting are all important components of effective patient self-management assistance (Wagner et al., 2005). These approaches appear to be in line with modern patient-centered care conceptualizations. Wagner et al. (2005) investigated patient-centeredness and the association with the CCM. They found that the CCM combines both evidence-based practice and patient-centeredness that should be pervasive in the health system (Wagner et al., 2015). This was important to this study because it explicitly expands the concept of the CCM to include patient-centeredness with individualized care plans in HELP.

Definition of Terms

Chronic care models: In a primary care context, the CCM is an organizational strategy for caring for chronic disease persons. The population-based system established practical, evidence-based, and supportive interactions between an informed, engaged patient and a proactive, prepared implementation team (Robusto et al., 2018).

Chronic diseases: Based on the definition by the Centers for Disease Control and Prevention (n.d.), chronic diseases were described as illnesses that last at least a year and necessitated continuing medical attention, impede everyday activities, or both. In the United States, chronic diseases such as heart disease, cancer, and diabetes are the main causes of mortality and disability.

Health insurance: It refers to a type of insurance that typically compensates for the insured's medical, surgical, prescription drug, and occasionally dental expenses.

Health insurance can pay the care provider directly or compensate the insured for expenses incurred as a result of illness or accident (Rosenbaum, 2011).

The Healthy Education Lifestyles Program: A program that provides participants with clinical care, continuous health education, and coaching resources to help them learn how to manage their chronic disease effectively and to guide the patients to take an active part in reducing the negative effects their chronic conditions had on their lives (Lloyd & Wyatt, 2015). Uninsured patients received assistance from HELP to manage chronic diseases like diabetes and hypertension.

Uncompensated Costs or Uncompensated Care Costs: Refers to hospital-based care that received no form of payment from either an insurer or patient (American Heart Association [AHA], 2021). These costs included bad debt for which payment was expected but not received and charity care for which the hospital expected no payment because of a patient's inability to pay (AHA, 2021).

Assumptions

The study was predicated on the discovery of current data demonstrating differences in hospital costs for uninsured chronic disease HELP patients post-enrollment and a similar control group. A dataset including all uninsured chronic disease HELP patients with three or more visits and a similar uninsured chronic disease patient control group not enrolled in HELP was abstracted from the healthcare system's EHR and a matching cost accounting dataset was used. This dataset was assumed to be a representation of the broader uninsured chronic disease population.

Limitations

A barrier for this proposed study was issues related to accessing the EHR data. A study limitation was a focus on the specific program of HELP. While this research determined an impact on hospital utilization, findings might not be generalizable to a greater population. A challenge to completing this study was the availability of an adequate sample size. Patients included must have had hospital utilization at one of the healthcare system's facilities and those enrolled in HELP must have had a minimum of three visits. A patient with three visits was considered fully enrolled in the program.

Scope and Delimitations

In terms of the research questions, what was addressed in this study was examining whether there were differences in costs of care for the HELP outpatient CCM combining clinical care, education, SDoH support, and peer support. This difference was measured for uninsured chronic disease patients between the post-enrollment HELP patients and a similar control group. The dependent variable was uncompensated costs and the independent variable was HELP enrollment.

The primary focus of the study addressed the impact of the CCM on reducing uncompensated healthcare system costs regarding patients with chronic disease. The secondary dataset included all uninsured chronic disease HELP patients with three or more visits and a similar control group from the healthcare system's EHR and a matching cost accounting dataset.

Significance

This quantitative study was designed to investigate whether the HELP outpatient CCM combining clinical care, education, SDoH support, and peer support was of any significance to healthcare systems cost of uninsured chronic disease patient overutilization of urgent and emergent services. Healthcare systems incurred significant uncompensated costs due to uninsured chronic disease patients' overutilization of urgent and emergent services resulting in uncompensated care costs to the healthcare system (Choi et al., 2020). This study was significant and could create positive social change because it could offer evidence of a best-practice, evidence-based program for chronic disease management for the uninsured to reduce dependence on hospital services, thereby reducing the uncompensated care of these patients. Patients could benefit by receiving better care through administrative changes. The program could serve as a model for hospitals serving large volumes of uninsured chronic disease patients through inpatient and emergency services to shift uninsured volume to a lower cost setting to reduce uncompensated care costs. Additionally, the HELP model provided a consistent place for chronic disease management typically not available to the uninsured patients allowing for regular access to care, medications, and education.

The goal was to add to the body of knowledge about the efficacy of the HELP outpatient CCM, which combines clinical care, education, SDoH support, peer support, and utilization in the face of the many disparities that plague uninsured chronic disease patients. The study's objective was to fill a void in the research on the influence of the CCM on decreasing uncompensated healthcare system expenditures for patients with

chronic diseases; however, prior studies have not specifically addressed the HELP model of care (Robusto et al., 2018; Stephenson et al., 2019).

Summary

The American healthcare system is not without problems. Uninsured chronic disease patients face significant unmet needs that result in dependence on hospital acute and emergent services (Fisher & Ma, 2015). The problem is that healthcare systems incur significant uncompensated costs as a result of uninsured chronic disease patients' overutilization of urgent and emergent services (Choi et al., 2020). Although scholars have investigated this issue, there was very little literature addressing the impact of the CCM on reducing uncompensated healthcare system costs regarding patients with chronic disease. Existing studies were not specific to the HELP model of care (Robusto et al., 2018; Stephenson et al., 2019). Study findings revealed that between uninsured and insured adults, gaps exist, and uninsured were likely to delay or forgo needed care at a rate seven times higher than insured, more likely to experience emergency admissions for chronic conditions, had longer lengths of stay, and had higher charity care costs for the healthcare system (Robusto et al., 2018; Stephenson et al., 2019). They also found that an increase in uncompensated care for hospitals with the increase in uninsured, primarily born in acute care hospitals and hospital closures occurred placing a greater burden on neighboring facilities (Robusto et al., 2018; Stephenson et al., 2019).

Researchers also established that an increase in uninsured patients admitted through the emergency department, particularly for ACSC, increased after contracture of health insurance options like Medicaid. On bridging the gap between the insured and the

uninsured, studies showed that ACSC hospitalizations for the uninsured in areas with a free clinic decreased (Hutchison et al., 2018). Researchers explored the comparison of insured and uninsured patients based on several chronic conditions, access to care, and healthcare utilization. Studies found similar numbers of chronic diseases in Medicaid and uninsured patients, but significant differences in utilization, unmet healthcare needs, and access to care (Liang et al., 2019).

The issue of healthcare systems incurring significant uncompensated costs as a result of uninsured diabetic patients' overutilization of urgent and emergent services resulting in uncompensated care costs to the healthcare system presented questions aimed at determining whether there was a significant difference in the hospital cost for uninsured chronic disease between post-enrollment HELP patients and a similar uninsured chronic disease patient control group.

Conclusion

A review of literature explored the background for the HELP outpatient CCM combining clinical care, education, SDoH support, and peer support for significance to healthcare systems cost of uninsured chronic disease overutilization of urgent and emergent services. The American healthcare system is not without flaws. Uninsured chronic disease patients have enormous unmet demands, forcing them to rely on hospital acute and urgent care. The overutilization of urgent and emergency services by uninsured chronic disease patients, resulting in uncompensated care expenditures to the healthcare system, was a significant problem. Despite the fact that academics have looked at this, there was little or no literature regarding the influence of the CCM on reducing

uncompensated healthcare system expenditures for patients with chronic diseases; nevertheless, existing studies did not specifically address the HELP model of care.

According to studies, gaps in care existed between uninsured and insured adults. The uninsured were seven times more likely than insured to delay or forego needed care, were more likely to experience emergency admissions for chronic conditions, had longer lengths of stay, and had higher charity care costs for the healthcare system (Choi et al., 2020). They also discovered that as the number of uninsured individuals grows, so did the amount of uncompensated care provided by hospitals, which acute care hospitals mostly carried, and that hospital closures occurred, putting a larger strain on nearby facilities (Choi et al., 2020). According to researchers, the number of uninsured individuals admitted to the ED, particularly for ACSC, rose after health insurance choices such as Medicaid were eliminated (Garthwaite et al., 2018). Studies revealed that ACSC for uninsured hospitalizations in areas with a free clinic showed a reduction in chronic conditions (Hutchison et al., 2018). Studies compared the number of chronic diseases, access to care, and healthcare utilization of insured and uninsured individuals. They found similar numbers of chronic diseases in Medicaid and uninsured patients but substantial variations in utilization, unmet healthcare requirements, and access to care (Fisher & Ma, 2015). According to the studies, the number of uninsured individuals admitted to the ED, particularly for ACSC, rose after health insurance choices such as Medicaid were eliminated (Garthwaite et al., 2018).

Section 2: Research Design and Data Collection

This research was designed to determine if there was a significant difference in ED costs when comparing post-enrollment HELP patients and a similar control group. I also intended to determine whether there was a significant difference in uninsured chronic disease patients' inpatient costs when comparing post-enrollment HELP patients and a similar control group. The research rationale and strategy, secondary data information, methods, statistical analysis, and a threat to validity are all included in this section.

Research Design and Rationale

This research was quantitative in nature. To measure the data obtained for this study, a quantitative, quasi-experimental design was used with data from the EHR and the cost accounting system in a healthcare system to compare uninsured HELP patients' hospital costs post-enrollment to those of a similar control group. This design was selected because there was no direct assignment of individuals to the HELP or control groups, and the comparison was based on patients' healthcare cost during a post-enrollment period (see Babbie, 2017). A *t*-test was conducted to examine whether there were statistically significant differences in the hospital costs for uninsured post-enrollment HELP patients and a similar control group. Uninsured chronic disease patients (i.e., those enrolled in HELP and a similar control group) were included, with inpatient and ED encounters tracked. In the first research question, the dependent variable was uninsured chronic disease patients' ED cost (a continuous variable), while the independent variable was HELP enrollment (a categorical variable). In the second

research question, the dependent variable was uninsured chronic disease patients' inpatient costs, while the independent variable was HELP enrollment.

Methodology

HELP was a program implemented by a healthcare system in the north Texas area. The study population included all enrolled HELP patients with at least three program visits and a similar control group with inpatient or ED encounters during the year post-enrollment. One-year post-enrollment for the control group was determined by the date of the patient's first encounter found in the dataset and tracked for one year from this date. The target population was estimated to be 1,200 patients. The timeframe for included patients was from program implementation in the fall of December 2018 through February 2020. All patients resided in the north Texas area, were uninsured, and had hospital activity at one of the healthcare system facilities.

Secondary Dataset and Sampling Information

The secondary dataset I used for this study was abstracted from the EHR for the north Texas healthcare system's HELP patients and a similar control group. This dataset contained admission data from inpatient, ED, and outpatient encounters and was considered the source of truth for patient data. The dataset included demographic data, diagnoses, procedures, biometrics, lab results, and health-related records for patients utilizing the health system. The cost data were abstracted from the cost accounting system. This dataset contained costs, charges, revenues/payments, primary demographic information, diagnoses and procedures, and all coding associated with every encounter within the healthcare system. The dataset also included the costs of care comparing

activity (inpatient and ED) post-enrollment in the program along with the control group of patients. HELP enrollment, the number of inpatient admissions and ED visits, and costs of care were used.

The original EHR data system contained significant protected health information (PHI); however, the abstracted dataset was deidentified by the health system prior to sending to me. Individual patient records were numbered beginning with one and subsequent records for the same patient used the same numbering system. The selection of health records was limited to all patients with three or more HELP visits and a similar control patient group from 2013 to 2020. Approval to use the data from the healthcare system was obtained upon approval from the Walden University's Intuitional Review Board (IRB) with approval number 04-19-22-0825502. The IRB of the north Texas healthcare system determined the study did not require their IRB approval. The healthcare system approved the release of this information with evidence of Walden IRB approval.

Data Analysis Plan

A *t*-test compared the means between two groups (see Boston University of Public Health, 2016). The *t*-test utilized a continuous, dependent variable and a categorical independent variable. In RQ1, I sought to identify whether there was a statistical difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing the ED. The *t*-test was carried out to establish whether there was a significant difference in ED costs between the HELP patients and the control group or non-HELP patients. In

RQ2, I sought to identify whether there was a statistical difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing the inpatient services, another *t*-test established whether there was a significant difference in inpatient costs between the HELP and non-HELP patients. The data were analyzed using the Statistical Package for the Social Sciences (SPSS).

The data were first tested for the assumptions of a *t*-test. The first assumption was that the dependent variable was continuous (see Cornell University, n.d.). The data met this criterion because the dependent variable, hospital cost for uninsured chronic disease patients, had a continuous level of measurement. The second assumption was that the independent variable had two independent groups that were categorical (see Cornell University, n.d.). In this case it was HELP enrollment or non-enrollment. The third assumption was there should be no association between the dependent variable observations in each group or between the groups themselves, implying that observations should be independent (see Cornell University, n.d.). The fourth assumption was that the dependent variable was normally distributed for each of the groups in the independent variable (see Cornell University, n.d.). In this case, a Shapiro-Wilk test was carried out to determine whether hospital cost for uninsured chronic disease patients was normally distributed for both the enrollment and non-enrollment groups (see Kim & Park, 2019).

Threats to Validity

Internal validity was defined by Patino and Ferreira (2018) as how well the findings represent the studied population. In this study, the greatest threat to internal

validity was the selection of three or more visits for HELP patients and the use of post-enrollment hospital activity for both enrolled HELP patients and the similar control group. While the program used three or more visits as fully enrolled in HELP, it may not be the appropriate timing for a patient to be completely invested in HELP. The comparison of 1-year post-enrollment also may not be the appropriate timing to see meaningful change in inappropriate healthcare utilization.

External validity was the ability to generalize the study results to a broader population (Patino & Ferreira, 2018). HELP was a program designed for an uninsured population with specific chronic diseases. A threat to external validity was that the results may not translate to an insured population. An additional threat was that the results may not translate to similar programs, particularly if they do not contain all elements of HELP.

Ethical Procedures

In following ethical protocols, I obtained Walden IRB approval. The healthcare system determined the study did not need their IRB approval as it did not include human subject research. As I did not have access to PHI, that eliminated many privacy risks. Regardless, I maintained the confidentiality of all data received.

Summary

The methods and reasoning for data analysis were given in this section of this doctoral study. This doctoral study was quantitative, and the dependent variables in each research question had a continuous level of measurement. The independent variables had a nominal level of measurement. The research questions were designed to determine

whether there were significant differences between post-enrollment HELP patients and a similar control group in ED and inpatient costs. The target group was all uninsured HELP patients with three or more visits from the healthcare system's EHR and a similar control group of uninsured, chronic disease patients with inpatient and ED utilization.

Section 3: Presentation of the Results and Findings

The purpose of this quantitative study was to investigate whether the HELP outpatient CCM was of any significance to healthcare systems' cost of uninsured chronic disease patients' overutilization of urgent and emergent services. HELP was a program implemented by a healthcare system in the north Texas area. The study population included all enrolled chronic disease HELP patients with at least three program visits. The timeframe for included patients was January 2018 through February 2020 to avoid the impact of the COVID-19 pandemic. All patients resided in the north Texas area and were uninsured. Using quantitative statistical analysis, the data were analyzed to test if there was a significant difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing ED services. The data were also analyzed to determine if there was a significant difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing inpatient services. The objective of descriptive statistics was to distinguish between the study's variables utilized to formulate the research questions. The identified research questions and validated hypotheses were as follows:

RQ1: Is there a statistical difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing the emergency department?

RQ2: Is there a statistical difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing the inpatient services?

Both research questions contained a null hypothesis and an alternative hypothesis (see Section 1). Section 3 contains a description of the secondary dataset, the results of the analysis, and a summary.

Data Collection of Secondary Dataset

The dataset used was abstracted from the EHR for the north Texas healthcare system's HELP patients and a similar control group. This dataset contains admission data from inpatient, ED, and outpatient encounters and was considered the source of truth for patient data. The dataset included demographic data, diagnoses, procedures, biometrics, lab results, and health-related records for patients utilizing the health system. The cost data were abstracted from the cost accounting system. This dataset contained costs, charges, revenues/payments, primary demographic information, diagnoses and procedures, and all coding associated with every encounter within the healthcare system. The dataset also included the costs of care comparing activity (inpatient and ED) post-enrollment in the program along with the control group of patients. HELP enrollment, the number of inpatient admissions and ED visits, and costs of care were used. The selection of health records was limited to all patients with three or more HELP visits and a similar control patient group with inpatient and ED utilization from 2018 to 2020.

Results

Descriptive Statistics

The descriptive statistical data generated for the research study used the results for ($N = 42,182$) cases of the categorical variables as shown in the Table 1. This analysis encompassed the independent variable, HELP patient. As shown in the table, approximately 96.8% ($n = 40,813$) were not HELP patient encounters, while the remaining 3.2% ($n = 1,369$) were HELP patient encounters. Likewise, 18.5% ($n = 7,802$) were inpatient encounters, while the remaining 81.5% ($n = 34,380$) were ED patient encounters.

Table 1

Summary of Descriptive Statistics for HELP patient, Enc Patient Type Desc, Gender, and Age Group

Variable	Characteristic	$N = 42,182$	Percentage
HELP Patient	Control group	40,813	96.8%
	HELP patient	1,369	3.2%
Enc patient type desc	Inpatient	7,802	18.5%
	Emergency department	34,380	81.5%
Gender	Female	22,427	53.2%
	Male	19,752	46.8%
Age group	18–29	3,755	8.9%
	30–39	9,085	21.5%
	40–49	12,959	30.7%
	50–59	11,505	27.3%
	60–69	4,391	10.4%
	70–79	350	0.8%
	80+	137	0.3%

Approximately 53.2% ($n = 22,427$) of the encounters were female, while the remaining 46.8% ($n = 19,752$) were male. Approximately 8.9% ($n = 3,755$) of the encounters had ages between 18–29, 21.5% ($n = 9,085$) of the encounters had ages between 30–39 years. Approximately 30.7% ($n = 12,959$) of the encounters had ages between 40–49, 27.3% ($n = 11,505$) of the encounters had ages between 50–59, 10.4% ($n = 4,391$) of the encounters had ages between 60–69, 0.8% ($n = 350$) of the encounters had ages between 70–79. Approximately 0.3% ($n = 137$) of the encounters were 80+ years old.

Table 2 shows the descriptive statistics for the dependent variables (cost). For the inpatient encounters, the No HELP patient total encounter cost had a mean ($M = 12436.47$, $SD = 17,086.2$) and the HELP patient mean ($M = 11,068.3$, $SD = 13,478.2$). The No HELP patient encounter total direct cost had a mean ($M = 7,781.55$, $SD = 11,441.57$), and the HELP patient encounters had a mean ($M = 6835.7$, $SD = 9,266.31$). For the ED patients, the No HELP encounter total cost had a mean ($M = 821.94$, $SD = 1,085.23$) and HELP patient encounters had a mean ($M = 917.75$, $SD = 656.79$). The No HELP patient encounter total direct cost had a mean ($M = 484.90$, $SD = 675.05$) and the HELP patients had a mean ($M = 529.39$, $SD = 9266.31$).

Table 2*Group Statistics of Enc Patient Type Desc*

Enc patient type desc	Total cost	HELP patient	<i>N</i>	Mean	Std. deviation	Std. error mean
Inpatient	Encounter total cost	Control group	7417	12,436.47	17,086.2	198.4
		HELP patient	385	11,068.3	13,478.2	686.91
	Encounter total direct cost	Control group	7417	7,781.55	11,441.57	132.85
		HELP patient	385	6835.7	9,266.31	472.25
Emergency department	Encounter total cost	Control group	33,396	821.94	1,085.23	5.94
		HELP patient	984	917.75	1,105.17	35.23
	Encounter total direct cost	Control group	33,396	484.9	675.05	3.69
		HELP patient	984	529.39	656.79	20.94

Independent *t*-Test

The data were first tested to determine if it met the assumptions of *t*-test. For both the inpatients and the ED, it was determined that the normality assumption was not met. The Shapiro-Wilk test suggested that the dependent variable, cost, was not normally distributed for each group of the independent variable (Not HELP patients and HELP patients). The second assumption was also not met as cost had significant outliers for every group of the independent variable (Not HELP patients and HELP patients). Since the data did not meet the normality assumption for the independent *t*-test, a Mann-Whitney test was employed instead. The Mann-Whitney U is a non-parametric test designed to determine if there were any significant differences between a single dichotomous independent variable and a scale or ordinal dependent variable (Chen et al., 2016). It was the independent samples *t*-non-parametric test's counterpart (Chen et al., 2016). This indicated that the test made no assumptions about the distribution of the analysis' dependent variable. As a result, when assessing dependent variables on an ordinal scale, the Mann-Whitney U-test was the best choice (Chen et al., 2016).

Table 3 shows the results of the Mann-Whitney test. The results suggested that for the first hypothesis, I rejected the null hypothesis concluding that there was a statistical difference in cost 1-year post-enrollment between uninsured post HELP enrollment patients and a control group of similar uninsured chronic disease patients utilizing the ED. Encounter total cost results were ($U = 14858527, p < .05$) and encounter total direct cost was ($U = 15054182, p < .05$). The cost 1-year post-enrollment was higher for the HELP patients than that for the No HELP patients.

Table 3

Mann-Whitney Test Statistics

Test statistic	Inpatient		Emergency department	
	Encounter total cost	Encounter total direct cost	Encounter total cost	Encounter total direct cost
Mann-Whitney U	1,407,946	1,399,653	14,858,527	15,054,182
Wilcoxon W	1,482,251	1,473,958	572,521,633	572,717,257.5
Z	-0.46	-0.653	-5.124	-4.487
<i>p</i> -value	0.645	0.514	< .001	< .001

Note. Grouping variable: HELP_patient

The test also revealed that for the second hypothesis, I had no reason to reject the null hypothesis and concluded that there was no statistical difference in cost 1-year post-enrollment between uninsured post HELP enrollment patients and a control group of similar uninsured chronic disease patients utilizing inpatient services. The results for encounter total cost were ($U = 1407946, p > .05$) and for encounter total direct costs ($U = 1399653, p > .05$). These results implied that there was no significant difference in costs between the HELP patients and No HELP patients for inpatient services.

Summary

The goal of this quantitative study was to determine whether the HELP outpatient CCM affected urgent and emergent treatment costs. All HELP patients with chronic diseases who completed three or more program visits were included in the research population. The data violated the assumptions of independent *t*-test, therefore, a Mann-Whitney test was employed instead.

The results suggested that for the first hypothesis, the null hypothesis was rejected, and a conclusion was made that there was a statistical difference in cost 1-year post-enrollment between uninsured post-enrollment HELP patients and a control group of similar uninsured chronic disease patients utilizing the emergency department. The cost 1-year post-enrollment was higher for the HELP patients than for the No HELP patients. The test also revealed that for the second hypothesis, there was no reason to reject the null hypothesis and a conclusion was made that there was no statistical difference in cost 1-year post-enrollment between uninsured post-enrollment HELP patients and a control group of similar uninsured chronic disease patients utilizing inpatient services. These results implied there was no significant difference in inpatient costs between the HELP patients and No HELP patients.

Understanding whether the HELP outpatient CCM was of any consequence to the healthcare systems' cost of uninsured chronic illness patients' overuse of urgent and emergent treatments depended on the results of the analysis of a secondary dataset. The results of the hypothesis testing were combined with opportunities for applying what has

been learned to professional practices in the next part. The conclusions will also be examined in relation to the theoretical framework, along with any remaining limitations.

Section 4: Application to Professional Practice and Implications for Social Change

My topic focused on the impact of an outpatient CCM on uninsured inpatient and ED utilization. Choi et al. (2020) established that there are gaps in care between uninsured and insured adults, with the uninsured being seven times more likely than insured to delay or forego needed care, to have emergency admissions for chronic conditions, to have longer lengths of stay, and to have higher charity care costs for the healthcare system. The study investigated whether the HELP outpatient CCM had any bearing on the cost to the healthcare system from excessive use of urgent and emergent treatments by chronic illness patients who lack insurance. A healthcare system in North Texas introduced the HELP program. All enrolled HELP patients with chronic diseases who completed three or more program visits were included in the study population. Based on the factors in the study questions, quantitative methodologies were applied to answer the research questions. I generated research questions to establish if there was a statistical difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing the ED and also to determine if there was a statistical difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing inpatient services. I employed SPSS software to analyze the data and complete the testing of the hypothesis.

Interpretation of the Findings

The findings of this study added to the understanding of how an outpatient CCM affects the use of emergency rooms and hospital stays for uninsured individuals. For

RQ1, I sought to determine whether there was a statistical difference in costs 1-year post-enrollment when comparing uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing the emergency department. There was a statistical difference in cost 1-year post-enrollment between uninsured post-enrollment HELP patients and a control group of similar uninsured chronic disease patients utilizing the ED. However, for ED encounter total direct cost, the cost 1-year post-enrollment was higher for the HELP patients than for the No HELP patients. According to Choi et al. (2020) and Garthwaite et al. (2018), uninsured individuals with a chronic disease do not have access to self-management education, consistent and appropriate healthcare, necessary medications and supplies, and frequently have other barriers due to SDoH. These patients frequently use the ED for care resulting in uncompensated costs to the healthcare system. That finding contradicted this study because the HELP patients had a higher cost in the ED than the non-HELP patients in 1-year post-enrollment.

In order to answer RQ2, I tested the hypothesis that, when comparing uninsured HELP patients with a control group of comparable uninsured chronic disease patients who used inpatient services, there was a statistically significant difference in costs 1-year after enrollment. According to the SPSS analysis' findings, there was no statistically significant cost difference between 1-year post-enrollment HELP patients and a control group of comparable uninsured chronic disease patients using inpatient services. This suggested that there was no significant cost difference between HELP patients and No HELP patients for the inpatient costs. HELP, an outpatient CCM that combined clinical care, education, support for SDoH, and peer support, was implied to have had little

impact on lowering the cost of uninsured chronic disease patients use of urgent and emergent services to the healthcare system.

Limitations of the Study

The secondary dataset was abstracted from the EHR system for the north Texas healthcare system's HELP patients and a similar control group. A researcher's capacity to design an instrument that specifically analyzes what they are interested in is constrained by the use of a secondary dataset. The data were also just a representation of north Texas and not the entire United States. If a broader geography of patient data had been available, a different result may have been achieved. The other limitation was that the data were also limited to four specific chronic diseases (i.e., diabetes, heart failure, hypertension, and hyperlipidemia). If the HELP model encompassed a broader range of chronic diseases, a different result may have been achieved. Additionally, the short 13-month study period may not have been long enough to see impact of HELP on its patients.

Recommendations for Further Research

A person's motivation to engage in healthy activities and their level of health awareness are important motivators. Behavior changes that aim to improve one's lifestyle and maximize health potential are positively influenced by health promotion. Due to SDoH, individuals without insurance frequently face additional obstacles including lack of access to self-management education, regular and appropriate treatment, necessary medications, and supplies. These individuals frequently visit the emergency room, putting the healthcare system at a financial loss (Choi et al., 2020; Garthwaite et al.,

2018). Even though this is the case, this study's findings showed HELP, an outpatient CCM that combines clinical care, education, support for SDoH, and peer support, did not have a significant impact on lowering the cost of uninsured chronic disease patients' use of urgent and emergent services to the healthcare system in North Texas. It is recommended that if the objective was to reduce the cost, they should try another self-management education model or expand the list of treated chronic diseases.

The data used in the study were limited to North Texas. It is recommended that future researchers adopt data from a broader geography to achieve different results. The HELP model may be effective in reducing costs in other areas. It is also recommended that data for additional chronic diseases are included, which may give a better picture of the overall effect of HELP on cost.

Additionally, continued research on HELP's impact on uncompensated healthcare costs should be studied. The 13-month timeframe may not have been long enough to see a significant impact from the model. Three visits also may not be the appropriate number of encounters for a patient to become fully invested in HELP.

Implication for Social Change

Having or not having health insurance has a substantial impact on managing and controlling chronic diseases because it is a key predictor of access to care and health outcomes. Individuals without insurance and those covered by Medicaid, for instance, have worse health outcomes than those with private insurance and Medicare, including unnecessarily frequent hospitalizations. For example, the rates of diabetes admissions for Medicaid and uninsured patients were comparable to or higher than those for diabetic

insured patients (Fisher & Ma, 2015). Exploring healthcare models that increase both the quality and access to healthcare services could create social reform that goes beyond health coverage. This study's findings shed light on how the outpatient CCM affects uninsured inpatient and ED use, which may allow for better patient care and lower cost constraints on the healthcare system. The purpose of the study was to determine whether the outpatient CCM of HELP, combining clinical care, education, support for SDoH, and peer support, had any bearing on the cost to the healthcare system of urgent and emergent service utilization by chronic disease patients who lack insurance. Adults who lack insurance are seven times more likely than those who have insurance to put off seeking care, be admitted to the hospital in an emergency for a chronic condition, stay longer, and generate charity care, all of which result in gaps in care that increase the cost of healthcare (Choi et al., 2020). The findings of this study may also assist health system administrators and government agency officials with an understanding on the effect of self-management education on healthcare systems cost of uninsured chronic disease patients' utilization of urgent and emergent services.

Implications for Professional Practice

For professional practice, the findings of this study might motivate healthcare professionals to incorporate self-management education and SDoH support for uninsured chronic disease patients to reduce costs for the healthcare system. Poor cost management negatively impacts overall financial bottom lines for systems and hospitals. More than any other industry, health care has the opportunity to improve outcomes while lowering costs. With these effective tools in place, health care providers can make much better use

of the medical staff, facilities, tools, and administrative resources. They can also better organize how patients move through the system and choose treatments that lead to better outcomes while phasing out those that do not. The need for intelligent and equitable use of the limited healthcare resources is driven by mounting pressure to reduce health care expenditures. In order to improve health outcomes, healthcare spending must be tied to high quality and effective service delivery. This calls for comprehending the advantages and efficacy of clinical procedures, being aware of the main causes of health care expenses, and being aware of potential ways to cut costs.

Conclusion

In order to improve care for the uninsured patient population and lessen the financial load on the health system, I aimed to explore how the outpatient CCM affected the utilization of ED and inpatient services for the uninsured. The study's objective was to determine whether the outpatient CCM known as HELP, which combines clinical care, education, SDoH support, and peer support, had any bearing on the cost to the healthcare system caused by uninsured chronic disease patients' dependence on urgent and emergent services. Adults who lack insurance are seven times more likely than those who have insurance to put off seeking care, be admitted to the hospital in an emergency for a chronic condition, stay longer, and spend more on charity care, all of which result in gaps in care that increase the cost of healthcare (Choi et al., 2020).

The findings suggested that there was a statistical difference in cost 1-year post-enrollment between uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing the ED. The cost 1-year post-enrollment was higher for

the HELP patients than that for the No HELP patients. The outcomes also revealed there was no statistical difference in cost 1-year post-enrollment between uninsured HELP patients and a control group of similar uninsured chronic disease patients utilizing inpatient services. This finding implied there was no significant difference in costs between the HELP patients and No HELP patients for the inpatients. This finding implied the HELP outpatient CCM combining clinical care, education, SDoH support, and peer support was not significant in reducing healthcare systems cost of uninsured chronic disease patients' utilization of urgent and emergent services.

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