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Using Health Navigators to Reduce Readmission Rates Among Medicaid or Uninsured Female Patients in the Emergency Department

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Walden University
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Abstract

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by

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MHA, Walden University, 2016

MAIS, University of Houston - Victoria, 2006

BAAS, Texas A&M - Kingsville, 1993

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Healthcare Administration

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Abstract

There has not been a significant decrease in hospital readmission rates since the 1980s, which has impacted staffing, operational, and financial resources. Unnecessary 30-day readmissions result in penalties in reimbursement, additional costs, and adverse reactions resulting from the admission for the patient. This quantitative study explored the impact of using health navigators for an emergency department (ED) patient population. The theoretical framework was based on the Donabedian model. The study focused on female patients,some of whom were covered by Medicaid, and some were uninsured. This study posed research questions targeting reducing readmission for female ED patients with no insurance or Medicaid coverage. The three research questions sought to determine the relationship between adding health navigators and reducing unnecessary readmission rates in the ED for the target population. The study analyzed the correlation between the use of health navigators assigned to patients discharged from the ED and readmission rates tracked for 6, 12, and 18 months, and whether health navigators reduced the readmission rate of female ED patients covered by Medicaid or were uninsured. The results demonstrated a statistically significant difference in the readmission rates of female ED patients covered by Medicaid with the use of a health navigator at six months post intervention. Also, there was a relationship between gender and insurance coverage and rate of readmission with the use of a health navigator. These findings may be used by the health care industry to reduce readmissions resulting in positive social change.

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Dedication

This project is dedicated to the person who has inspired me in every area of my life, especially in my pursuit of education. My grandmother instilled in me the joy of being a lifetime learner; she taught me by example and word. Her saying, "the time will go by, and you will either regret not pursuing your goal/dream, or you will be celebrating the accomplishment, the choice is yours, but the time will go by either way!" This always inspired me to set the goal, take the chance, live the dream, and relish every moment of life!

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Section 1: Foundation of the Study and Literature Review

Healthcare administrators must be aware of and manage the admissions and readmission rates of their patient population (Dinerstein, 2018). This study used secondary research to examine whether health navigators could reduce the readmission rate and thus reduce Medicare penalties. The results could be used by Healthcare administrators to understand the impact of health navigators in areas with high readmission rates among female patients who are uninsured or covered by Medicaid. This research could contribute to positive social change by increasing the reach of health navigator programs and thus decreasing patient readmissions. With fewer unnecessary readmissions, all patients would receive better care and be healthier, which could, in turn, reduce healthcare expenditures. Reduction in readmission rates would decrease healthcare systems' cost and thus reduce overall healthcare spending for the country (American Hospital Association [AHA], 2018).

Section 1 covers the problem statement, purpose, research questions, theoretical foundation, nature of the study, definitions, assumptions, literature review, significance, and summary.

Problem Statement

A healthcare operational problem exists in the healthcare industry that involves a lack of a significant decrease in hospital readmission rates since the 1980s, which has impacted staffing resources, operational resources, and financial resources (Felix, Seaberg, Bursac, Thostenson, & Stewart, 2015; Dinerstein, 2018; McIlvennan, Eapen, & Allen, 2015). Unnecessary readmissions within 30 days of discharge result in penalties in

reimbursement, additional costs, and adverse reactions for all patients (Dinerstein, 2018). Current 30-day readmission rates average between 14.9% and 20% (Felix, Seaberg, Bursac, Thostenson, & Stewart, 2015). Historical Medicare patient readmissions within 30 days averaged 20% (McIlvennan, Eapen, & Allen, 2015). In Harris County, Texas, the largest county in Texas, ED visits totaled 1,636,187 in 2013, according to research conducted by Begley, Hamilton, and Jeong (2015). The patient population was comprised of 56.4% females and 43.6% males (Begley et al., 2015). Medicaid patients comprised 28.9% of ED visits, and uninsured patients made up 32.2% of the ED patients during 2015 (Begley, Courtney, Abbass, Ahmed & Burau, 2013). Nationally, 12.2% of ED patients are uninsured, while 29.3% are covered by Medicaid (Zhou, Baicker, Taubman, & Finkelstein, A. N. (2017). The Hospital Readmission Reduction Program (HRRP), established in 2012 as part of the Affordable Care Act (ACA), financially penalizes hospitals if they have a higher-than-expected risk-standardized 30-day readmissions rate (MedPAC, 2018).

Medicare groups readmissions into three categories: all-cause, unplanned, and potentially preventable (Centers for Medicare & Medicaid Services, 2018). According to the Medicare Payment Advisory Commission (MedPAC) in 2014, up to 12% of readmissions are potentially avoidable (McIlvennan, Eapen, & Allen, 2015). The *New England Journal of Medicine* (2018) reported that in 2011, 3.3 million hospital readmissions cost $41.3 billion. Since the inception of the HRRP) in 2012, CMS has penalized hospitals $1.9 billion for excess readmissions (AHA, 2018). Readmissions can be caused by multiple factors, including (a) instability in the patient upon discharge, (b)

insufficient support for the patient's recovery at discharge location, and (c) recurrence or an advance of the original disease because of poor compliance and inadequate supervision or follow-up (Dinerstein, 2018). There is no financial assistance component in the HRRP for healthcare providers (CMS, 2018). The addition of the Community-based Care Transitions Program (CCTP) created by the ACA tests models for improving care transitions from hospital to other settings and seeks to reduce readmissions for high-risk Medicare patients. CCTP provides for over $500 million in financial assistance to hospitals that have applied and are approved for the program (McIlvennan, Eapen, & Allen, 2015). Health navigators can provide transitional care, or care from hospital to other care settings, to patients post-discharge. In this study, health navigators are identified as case managers (inpatient) and care managers (outpatient). The CCTP can provide funding for transitional care efforts. This service is tracked by current procedural terminology (CPT) codes, which can further incentivize the coordination of inpatient and outpatient care (McIlvennan, Eapen, & Allen, 2015).

Reducing potentially preventable readmissions is essential for hospital administrators due to the substantial financial impact and critical to the patient from a health perspective. Research has been conducted to demonstrate the value of using health navigators for a variety of patients, including elderly patients, oncology patients, and ED patients in general. However, there is a gap in evaluating health navigators who support female patients—whether covered by Medicaid or uninsured—and in connecting them with community benefit, which includes programs that provide treatment and/or promote

health and healing, to reduce the continued high 30-, 60-, 90-day readmission rates (Felix, Seaberg, Bursac, Thostenson, & Stewart, 2015).

Purpose of the Study

This study sought to explore the use of health navigators for female ED patients, whether covered by Medicaid or uninsured. The research considered four dependent variables: the rate of readmission at 6, 12, and 18 months and coverage by Medicaid and no insurance coverage.

This study assessed the use of health navigators in the transition of care for patients from hospital to home to reduce 30-day readmission rates, which result in financial penalties from CMS and other payers. While this study focused on specific CMS penalty-sensitive conditions, navigator services are applicable across other services that may be relevant in reducing 30-day readmission rates (Prieto-Centurion et al., 2019).

This research determined how health navigators' use potentially affects the readmission rate for female patients accessing care in the ED with no insurance and female patients covered by Medicaid. Among the key contributing factors to unnecessary 30-day readmissions are (a) communication among care teams, (b) communication between patient and provider, and (c) better support for patient self-management (Auerbach, et al., 2016). The dataset used for this research contained observations of over 27,412 ED patients, from December 2013 through July 2019, from a health system in Houston, Texas.

Research Question(s) and Hypotheses

This study posed three research questions to determine the relationship between the process change of adding health navigators and the desired result of reducing unnecessary readmissions rates in the ED for the target population.

RQ1 –What is the relationship between the use of health navigators and the rate of readmissions for female ED patients who have Medicaid at six months post-discharge for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is no statistically significant difference in the rate of readmission for female ED patients who have Medicaid with the use of a health navigator at six months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rate for female ED patients who have Medicaid with the use of a health navigator at six months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

RQ2 –What is the relationship between the use of a health navigator and the rate of readmissions for female ED patients who have Medicaid at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is no statistically significant difference in the rate of readmission for female ED patients who have Medicaid with the use of a health navigator

at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rate for female ED patients who have Medicaid with the use of a health navigator at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

RQ3 – What is the relationship between the use of a health navigator and the readmission rates for uninsured female ED patients for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is not a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator for a patient population of ED patients treated at a health system in Houston, Texas.

Theoretical Foundation for the Study

The theoretical framework used for this study was the Donabedian model, which was developed by Avedis Donabedian (2005) to evaluate the quality of care and to measure improvement in care. The theory uses three components—structure, process, and outcomes, along with a balancing measure—to measure quality and improvement in care.

The structure of care component identifies the context in which the care occurs and other elements, such as the healthcare professional's training, in this case, the health navigator.

The Donabedian theoretical model is well aligned with this research to analyze improvement projects and provide process, outcome, and structure and balancing measures (NHSI ACT Academy, 2008). The *process measures* demonstrate how the process and system work to produce the outcome or demonstrate whether there is a relationship between the implementation of health navigators and a reduction in readmissions. The process component determines what takes place in the interaction between health navigator and patient. The *outcome measures* indicate the impact on the patient (NHSI ACT Academy, 2008). In this study, the outcome component identifies the impact on the health of the patient with the health navigator's service. It reveals whether there is a relationship between the interaction of the navigator and the readmission rate. The *structure measure* shows the service attributes, in this case, the health navigator and the tasks and services provided (NHSI ACT Academy, 2008). Finally, the *balancing measure* in the Donabedian model shows the relationship or consequences of the change implemented; in this study, the introduction of health navigators in the ED (NHSI ACT Academy, 2008). In this study, the balancing measure is the monitoring and measuring ED readmission rates following the workflow change of adding the navigators.

Nature of the Study

This study used correlational, quantitative research methods with secondary data from a dataset provided by a health system in Houston, Texas. This study also used data from the Agency for Healthcare Research and Quality (AHRQ), specifically from the

Healthcare Cost and Use Project (H-CUP-US) of the National Readmission Database (NRD). The NRD enables analyses of national readmission rates for all types of payers and the uninsured (AHRQ, 2018). This database is limited to inpatient admissions and discharges, which aligned with this study.

The study analyzed the correlation between the use of health navigators at a health system in Houston, Texas, who were assigned to patients discharged from the ED; their readmission rates tracked for 6, 12, and 18 months. Health navigators for this study were identified as case managers (inpatient) and care managers (outpatient). SPSS software was used to analyze the data. Statistical decomposition methods were applied to the data to determine whether the use of health navigators reduced the readmission rate of female ED patients, whether covered by Medicaid or uninsured.

Secondary datasets were accessed from a health system in Houston, Texas, and AHRQ, specifically H-CUP-US (2017). The health system dataset contained 27,412 patients identified as assigned a health navigator post-discharge from the ED. Patients were tracked at intervals of 6, 12, and 18 months. The AHRQ dataset contained discharge-level information on inpatient, ambulatory surgery, or ED care in U.S. hospitals. The AHRQ dataset included the following elements: national readmission rates by diagnosis, procedure, patient demographics, expected payment source, costs associated with readmissions, reasons for readmissions, the impact of health policy changes, and readmissions by special populations (AHRQ, 2019).

Literature Review

In the following literature review, I explored peer-reviewed articles centered on ED use and payer mix in Houston, Texas—including uninsured, commercially insured, and government payers (Medicaid/Medicare), national statistics were included as well. Sociodemographic factors affecting healthcare selection and utilization were also included in this research. Significant research was conducted in the literature presented by the AHA, H-CUP, AHRQ, and the National Readmission Database. Research also focused on Health Navigators in various care scenarios, including geriatric, oncology, and cardiology. Specific research was conducted in the area of health disparities and women. This study's primary dataset was derived from a health system in Houston, Texas, and H-CUP data.

The following two databases were used, EBSCO and CINAHL (Cumulative Index to Nursing & Allied Health Literature). The following keywords were used: *health navigators, patient navigation, readmission rates, 30-day readmissions, emergency department, uninsured,* and *avoidable readmissions.*

A healthcare operational problem exists in the healthcare industry that involves a lack of a significant decrease in hospital readmission rates since the 1980s, which has impacted staffing resources, operational resources, and financial resources (Felix, Seaberg, Bursac, Thostenson, & Stewart, 2014, Dinnerstein, 2018; McIlvenan, Eapean, & Allen, 2015). Unnecessary readmissions within 30 days of discharge results in penalties in reimbursement from Medicare, additional costs, and adverse reactions for the patient.

Reducing potentially preventable readmissions is essential for hospital administrators due to the substantial financial impact and critical to the patient from a health perspective.

Factors Influencing Readmissions

Understanding the cause of readmissions is important in determining successful strategies in reducing unnecessary 30 day readmissions. According to research conducted by Nagasako, Reidhead, Waterman and Dunagan (2014), hospital readmissions are identified as costly and an all too common occurrence. This is especially true among patients covered by Medicare. Social factors including race, gender and education level are cited as potential determinants of readmissions and patient outcomes.

Herrin, St Andre, Kenward, Joshi, Audet, and Hines (2015) present research that examines the influence of community characteristics and health system characteristics at a county level on 30 day readmission rates. While previous research had been conducted examining the relationship between sociodemographic charcteristics, the connection of the health system and community or county component had not had substantial research. Specifically, access to care within a community is cited as a factor in the likelihood of readmission. Additionally, number of Medicare beneficiaries per capita is cited as a demographic factor that has impact upon the 30 day readmission rate. The number of primary care practitioners and specialists were also associated with the readmission rate. The number of primary care practitioners can influence access to care and provide patients with limited options for care other than emergency department care.

Impact of Readmissions

Hospitals are incentivized to reduce readmission rates for a variety of factors. Upadhyay, Stephenson and Smit (2019) cite transparency of quality of indicators as an important incentive. Patients have increasing access to hospital quality data and quality scores based on readmission rates can impact patient choices of health care systems. Quality scores are linked to profitability and market share for health systems. Additionally, the penalties associated with unnecessary readmissions based on the CMS Readmission Reduction Program is a strong financial incentive for health care administrators to focus on reducing readmission rates.

According to Felix, Seaberg, Bursa, Thostenson, and Steward (2015), unnecessary 30-day readmissions negatively impact healthcare providers' costs, health systems and negatively impact patient outcomes. Poor care coordination upon discharge is an indicator, along with multiple clinical factors that can determine readmission rates. According to the New England Journal of Medicine (2018), in 2011, there were 3.3 million hospital readmissions in the United States, which resulted in $41.3 billion in associated costs. In a study presented as part of the HCUP (Healthcare Cost and Utilization Project), Bailey, Weiss, Barrett, and Jiang (2019) reported that for any diagnosis, the average cost of readmission is $14,400 for readmissions between the years 2010-2016.

Hospitals see a substantial financial impact on unnecessary readmissions when patients readmit within 30-days of discharge (Upadhyay, Stephenson, & Smit, 2019). The Hospital Readmission Reduction Program (HRRP) is a Medicare value-based purchasing program that decreases payment to hospitals that do not meet performance indicators in

six conditions (Upadhyay, Stephenson, & Smit, 2019). In a study presented as part of the HCUP (Healthcare Cost and Utilization Project), Bailey, Weiss, Barrett, and Jiang (2019) reported that for any diagnosis, the average cost of readmission is $14,400 for readmissions between the years 2010-2016. With the Affordable Care Act's implementation, readmission rates are required to be released and are considered a critical quality metric for healthcare systems (Upadhyay, Stephenson, & Smith, 2019). Consequently, increased readmission rates cause higher use of resources and decreased margins, but they may ultimately deter prospective patients as readmission rates are published quality metrics (Upadhyay, Stephenson, & Smit, 2019).

While readmission rates overall fell 7% for patients covered by Medicare from 2010-2016, they increased for uninsured patients by 14% (Bailey, Weiss, Barrett, and Jiang, 2019). During this time period, patients covered by Medicare were the highest for 30-day readmissions, followed by Medicaid and uninsured patients (2019). According to Dinnerstein (2018), readmissions can result from a variety of factors, including discharging the patient too early, before stabilization; discharge to a location that cannot support recovery; recurrence or worsening of original disease because of poor patient compliance or inadequate supervision.

ED Utilization

ED visits are among the highest costs of treatment resources, with the average cost of an ED visit $1,016 in 2017 (Consumer Health Ratings, 2020). ED use can result in high-cost services to individuals with an average cost of treatment in the ED estimated at $2,032, which is approximately 12 times higher than a physician's office visit for

similar conditions (LaPointe, 2019). In Harris County during 2007, there were 1,060,825 total ED visits (Begley, Courtney, Abbass, Ahmed, & Burau 2013). Uninsured patients comprised 30.6% of all ED visits, and Medicaid patients comprised 18.6% of ED visits (Begley, Courtney, Abbass, Ahmed, & Burau 2013). Female patients made up 52.5% of all ED visits (Begley, Courtney, Abbass, Ahmed, & Burau 2013).

In research conducted by McCormack, Jones and Coulter (2017), demographic factors are examined as factors in ED utilization. Factors included age, gender, race/ethnicity, urbanicity and federal poverty level (FPL). Females were 41% more likely to have a nonurgent ED visit and patients age 50-65 represented the lowest utilization of ED visits. Between 30-50% of all ED visits are classified as nonurgent care needs which could be serviced by lower level of care providers.

In Houston, Texas, 26 emergency departments provide services to the general public (Begley, Courtney, Abbass, Ahmed, & Burau, 2013). A large not for profit health system in Houston, Texas, which was the focus of this study as of 2013, made up 9 of the hospitals with ED services included in this research. Medicaid patients utilize the ED at higher rates than patients covered by commercial insurance or private insurance (Kim, McConnell, & Sun, 2017). A variety of factors may contribute to the higher use rates, including lower copayments or limited access to primary care services (Kim, McConnell, & Sun, 2017). Research conducted by Kim, McConnell, and Sun (2017) reported that approximately 44.5% of Medicaid patients visit the ED at least once per year, which is four times higher than commercially insured patients. The research also showed that Medicaid patients utilized ED care in significantly higher numbers than Medicaid

patients who accessed other care services such as mental health and inpatient care (Kim, McConnell, & Sun, 2017).

The Texas Medicaid program is the third largest Medicaid program in the country. Delcher, Yang, Ranka, Tyndall, Vogel and Shenkman (2017), conducted research on the Texas Medicaid program population. The Texas Medicaid population proportionally utilize the ED at a rate of more than twice what non-Medicaid populations do. According to this research, females utilized ED services at 79.10% for ED visits between five to six times and at a rate of 67.48% for 15 or more ED visits in a year in 2014. Females represented extremely high utilization of ED services, those with 15 or more visits at a rate of 75%. Within the population of Texas Medicaid patients, 31% utilized ED services at least one time per year. Extremely frequent ED utilization, measured as greater than 10 ED visits within one year was reported as less than 1% of all Texas Medicaid patients. However, the extremely frequent utilization represented 17.4% of total ED costs. Medicaid costs make up between $27 billion to $47 billion annually of national health care expenditures. Approximately $64.4 billion is spent on potentially avoidable ED visits including all ED patients.

Health Navigator Program

Health navigation services have developed in response to healthcare delivery services' complexity and have been implemented in various patient care settings (Carter, Valaitis, Lam, Fether, Nicholl, & Cleghorn, 2018). Patient navigation services assist patients with a variety of services intended to break down barriers of care, bridge gaps of

service, and assist patients with complex care needs by assisting with needed resource connections (Carter, Valaitis, Lam, Fether, Nicholl & Cleghorn, 2018).

Health navigators may be referred to under different titles, including community health worker, community health liaison, case manager, or health advocate (Carter, Valaitis, Lam, Fether, Nicholl, & Cleghorn, 2018). Barriers to care can include access to health care, insurance, poor health literacy, transportation, childcare, and more, according to research conducted by the Colorado Department of Public Health and Environment (2019).

According to Wells, Valverde, Ustjanauskas, Calhoun, and Risendal (2019), health navigators used in healthcare systems may possess a variety of skills, including care coordination and referral services. Patient navigators' various skillsets are presented and analyzed. This research defined the essential qualification for health navigators as being a "cultural broker and interpreter" (p. 9). It is not necessarily a requirement for health navigators to hold a clinical degree, depending on the services they provide. In roles where navigators provide expanded services such as screening, diagnostic, and treatment services, they would require clinical qualifications and licensure. Correlations identified include services provided by navigators to uninsured or Medicaid patients frequently involved in providing basic navigation and care coordination and referrals to services. Health navigators' services are suggested to reduce some health disparities identified in uninsured patients and Medicaid patients.

Healthcare disparities exist across the country and can be impacted by geographical location, gender, age, race, ethnicity, and disability (Natale-Pereira, Enard,

Nevarez, & Jones, 2011). Health disparities can impact access to care and the use of care, but according to research by Carter, Valaitis, Lam, Fether, Nicholl, and Cleghorn (2018), it can also impact patient outcomes. Navigators are a crucial component in assisting patients in overcoming barriers and coordinating access to comprehensive services. Patients may face challenges such as language barriers, cultural beliefs, transportation, and child care. The authors also propose that distrust of healthcare services and perception of disrespect may be an area that Navigators can assist with addressing.

Prieto-Centurion, et al. (2019) conducted and presented the Patient Navigator to Reduce Readmissions (PARTNER) study. This study assessed the use of Navigators in the transition of care for patients from hospital to home to reduce 30-day readmission rates, resulting in financial penalties from CMS and other payers. While this study focused on specific CMS penalty sensitive conditions, it is acknowledged that navigators' services are applicable across other services and may be relevant in reducing 30-day readmission rates (Prieto-Centurion, et al., 2019).

The ACA did not allocate any direct funding to provide health navigator services. The offset that providers should consider when implementing a navigation program is a potential reduction in Medicare penalties for 30-day readmissions. Shommu, Ahmed, Rumana, Barron, McBrien, and Turin (2016) reported that while cost-effectiveness is an important consideration for communities when considering this type of program, the quality-adjusted life years gained present the benefit in health navigator use.

Additional research conducted by Wang, et al. (2015) suggested that personal contact between patients and health navigators helps patients stay engaged and navigate

the healthcare system. This study also demonstrated higher compliance rates by patients and engagement in their healthcare (Wang, et al., 2015). This study reported that direct contact between the health navigators and patients improves patient outcomes and management of healthcare issues, thus potentially reducing readmissions.

Vargas (2016) presented research that suggests that uninsured patients may have a distrust or misunderstanding of the health care system in general. Health navigators may help this patient population that fosters a distrust of the system. Health navigators may assist this population by building rapport with patients, addressing some negative perception of the health care system. Vargas suggests that the navigators unlike typical health care workers such as physicians and nurses, may present a more trustworthy partner in accessing health resources.

Definitions

Emergency department admission: An ED admission is defined as a patient with a disposition from ED to "admitted as an inpatient" or "transfer to a short-term hospital" (Venkatesh, Dai, Ross, Schuur, Capp & Krumholz, 2015, p.4).

30-Day unplanned readmissions: According to the Centers for Medicare and Medicaid, readmission and death rates are measured within 30 days because it is less likely that readmissions and deaths after that period or after a more extended period would have an association with the care received in the hospital and potentially would be related to other illnesses, the behavior of the patient, or care received after discharge (CMS, 2020).

Health Navigator: For this study, a health navigator is a member of the healthcare team who helps individuals overcome barriers to quality care. Health navigators are identified as Case Managers (Inpatient) and Care Managers (Outpatient). These barriers can include access to health care, insurance, poor health literacy, transportation, childcare, and more, according to research conducted by the Colorado Department of Public Health and Environment (2019). In this study, health navigators are identified as Case Managers (Inpatient) and Care Managers (Outpatient).

Payer: Payer is the expected payer for the hospital stay (Sun, Karaca, & Wong, 2017). Payer grouping by HCUP data sources and for this research include: Medicare, which includes patients covered by fee-for-service and managed care Medicare; Medicaid, which includes patients covered by fee-for-service and managed care Medicaid; Private Insurance which includes commercial carriers and private health maintenance organizations (HMOs) and preferred provider organizations (PPOs); and Uninsured, which includes the status of *self-pay* and *no charge.*

Assumptions

Assumptions in this study included the assignment, and the use of health navigators may reduce the readmission rate. An additional assumption is that gender and financial status, that is, uninsured or government insurance coverage status, does not correlate with the readmission rate impacted using health navigators. Additional assumptions are that the use of health navigators in the ED care location is in alignment with other use cases such as geriatrics and oncology. Assumptions in this study also included the accuracy of the secondary data.

Limitations

This study was limited to a health system in Houston, Texas. The scope included female ED patients that had presented to the health system for the period of 2013 – 2019 and tracked their subsequent ED use post intervention of a health navigator.

The study intended to identify the impact of health navigators on this patient population. The data analyses focused on recurring readmission rates for this patient population. The results cannot conclude that the use of health navigators improved any clinical outcomes or health status. There may be financial limitations to the adoption of health navigator programs as funding is typically the responsibility of the health system. Currently, limited funding at the state or national level exists.

Scope and Delimitations

This research focused on gender and insurance as a predetermination of avoidable readmission rates. The percentage of the patient population contained in the data set represents an opportunity to have a significant positive impact on the research problem.

The dataset used for this research contains observations of 27,412 ED patients from December 2013 through July 2019 at a health system in Houston, Texas. In the population, patients were observed at 6, 12, and 18 months of pre-/post-intervention Patients included in the study received health navigation services post-ED intervention.

This research faced limitations due to the use of secondary data sources, which can include incomplete datasets and variances in data formatting. Additionally, the primary dataset used includes patients assigned health navigator services at a Houston,

Texas health system. While the patient population consists of 27,412 patients, the single health system and single geographic location may limit the application of these results in other healthcare markets due to differences in community benefits available to patients. The H-CUP-US dataset used annual discharge data.

Consequently, the annual file included patients admitted in the year prior and discharged in the current year but excluded patients admitted in the current year but discharged in the next year. This resulted in the chance of 30- or 60-day readmissions for patients admitted in the latter part of the year not being captured if the subsequent admission crossed into the next year (AHRQ, 2018). Because of the annual file structure, 2010-2016, NRD data cannot be combined across data years to create a multiyear database. Access to data, the cost for dataset access, and data storage requirements also created barriers.

Significance

Healthcare administrators must be aware of and manage admissions and readmission rates for their patient population (Dinnerstein, 2018). This study examined the potential for the use of health navigators assigned to patients to assist in navigating the healthcare system and identifying and using community benefits to reduce readmission rates and potential penalties charged to health systems resulting from unnecessary readmissions.

This research has implications for positive social change. The results could be used to analyze the effectiveness of health navigator programs and propose guidelines for their expansion to help patients identify and use community benefits. Patient outcomes

may be improved, and patient well-being may be increased. Reduction in readmission rates will decrease healthcare systems' costs, thus reducing overall healthcare spending for the country (AHA, 2018).

Summary and Conclusions

This study used secondary data to determine whether the use of health navigator services reduces readmission rates for the population of 27,412 Emergency Department patients at a health system in Houston, Texas. The research was designed to analyze the effectiveness of and propose guidelines for ease of adoption and use of health navigators in other health systems for Medicaid and uninsured female patients. Healthcare administration can use the results to understand the impact of health navigators in patient care areas with high readmission rates.

The literature review indicated that barriers to access and resources can increase readmission rates. Many factors can affect how to access care and follow-up on care, and compliance is addressed by patients discharged from the emergency department. Research has been conducted in various use cases, and this study focused on gender and insurance status as potential factors increasing the readmission rate.

Governmental and policy changes are imposing penalties on healthcare systems when readmission rates exceed specified limits. Quality standards identify readmission rates as a factor in disease management and patient safety and quality. Research in this area indicates that health navigators have proven to have a positive impact on care transition in oncology patients, cardiology patients, and geriatric patients. Gender and insurance coverage status has not been researched significantly from an ED discharge

perspective. Therefore, this study provided some insight into those factors and the relationship to readmission rates.

In Section 2, I present an overview of the research design and data collection utilized in this study. Section 3, I summarized the results and findings of the study. Section 4 I present information on the implications of the study results and presented opportunities to apply these findings in healthcare systems.

Section 2: Research Design and Data Collection

This study sought to explore the impact of using health navigators for ED patients, focusing on female patients covered by Medicaid or uninsured. The research considered four dependent variables: rate of readmission at intervals of 6 and 12 and 18 months and coverage by Medicaid or no insurance coverage. The independent variables were health navigator engagement, patient care location of the ED, and patient gender.

In Section 2, I cover the following: an introduction of the research design and rationale, a discussion of the methodology, a review of the secondary data types and sources of information, threats to validity, and ethical procedures. This section offered support for the research methodology used. It covered the following topics: research design and rationale, methodology, sampling and sampling process, quantitative data, instrumentation, data analysis, threats to validity (external and internal), and ethical procedures.

Research Design and Rationale

This study used a correlational quantitative research method and used secondary data in the dataset provided by a health system in Houston, Texas (2019). Additionally, this study used data from the Agency for Healthcare Research and Quality (AHRQ), and specifically from the Healthcare Cost and Utilization Project (H-CUP-US) National Readmission Database (Barrett & Bailey, 2018). The National Readmissions Database (NRD) enables analyses of national readmission rates for all types of payers as well as the uninsured (AHRQ, 2018). The NRD database data is drawn from the H-CUP State Inpatient Database (SID) program with verified patient linkage numbers that can be used

to track readmissions across hospitals within a state. The NRD is the only nationally representative database dedicated to the study of hospital readmissions. This database is limited to inpatient admissions and discharges, which will align with this study. The NRD allowed for a comparison of readmission rates.

The study analyzed the correlation between the use of health navigators at a health system in Houston, Texas, assigned to patients discharged from the ED and the readmission rates tracked for 6, 12, and 18 months. The study compared the readmission rates to those patients without navigational services as reported in AHRQ statistical data. Statistical decomposition methods were applied to the data to determine whether the use of health navigators had a positive impact on reducing the readmission rate of female ED patients covered by Medicaid or uninsured.

This study's design was selected as a quantitative study to determine if there are quality of care and readmission rate improvements. Additionally, the design is used to provide a statistical evaluation of the potential impact based on gender and insurance coverage or lack of insurance coverage.

Methodology

Power Analysis. The dataset used for this secondary data analysis contained observations of 27,412 ED patients, from December 2013 through July 2019, at a health system in Houston, Texas. I used SPSS to conduct a (post hoc) power analysis on this secondary dataset. A priori power analysis was appropriate for this study, where $\alpha = .05$ and power ($1 - \beta$ error probability) = .8. The effect size was set at a medium effect size, $f^2 = .15$. The sample size was $N = 27{,}412$, which reflected the secondary dataset (filtered

for ED patient location, a date range of December 1, 2013, through July 31, 2019, and all-payer/financial classes). Females comprised 16,176 patients or 59.0% of the total sample size; 22,224 or 81.1% of patients were self-pay/uninsured and Medicaid patients made up 3,974 or 14.5% of the population (see Appendix C). Data were collected via the NOMAD reporting system, which contains Cerner EMR (electronic medical record) and Allscripts Health Quest Patient Registration and Patient Accounting System records. All ED patients during the 2013–2019 period were included in the population. Patients were observed at 6, 12, and 18 months pre and post-intervention. Patients included in the study received health navigation services post-ED intervention.

This study posed three research questions involving quality improvement processes that targeted the reduction of readmission for female ED patients with no insurance or with Medicaid coverage. The research questions sought to compare patients in the target population who got help from health navigators (and any resulting reduction of unnecessary readmission rates in the ED) to patients who did not receive navigational services.

RQ1 –What is the relationship between the use of health navigators and the rate of readmissions for female ED patients who have Medicaid at six months post-discharge for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is no statistically significant difference in the rate of readmission for female ED patients who have Medicaid with the use of a health navigator

at six months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rate for female ED patients who have Medicaid with the use of a health navigator at six months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

RQ2 –What is the relationship between the use of a health navigator and the rate of readmissions for female ED patients who have Medicaid at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is no statistically significant difference in the rate of readmission for female ED patients who have Medicaid with the use of a health navigator at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rate for female ED patients who have Medicaid with the use of a health navigator at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

RQ3 – What is the relationship between the use of a health navigator and the readmission rates for uninsured female ED patients for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is not a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator for a patient population of ED patients treated at a health system in Houston, Texas.

Secondary Data Types and Sources of Information

Secondary datasets used were accessed from a health system in (2019) and the (AHRQ), specifically the (H-CUP-US) (2017). The dataset contains 27,412 patients identified as those assigned a health navigator post-discharge from the emergency department. Patients are tracked at intervals of 6, 12, and 18 months. The AHRQ dataset contains discharge-level information on inpatient, ambulatory surgery, or ED care in U.S. hospitals. The AHRQ dataset includes the following data elements: national readmission rates by diagnosis, procedure, patient demographics, or expected payment source, costs associated with readmissions, reasons for readmissions, the impact of health policy changes, and readmissions by special populations (AHRQ, 2019). Access to this dataset was requested and approved through the System Director, Clinical Research Operations at a health system in Houston, Texas – Texas Medical Center IRB process. Walden University IRB study number 11-12-20-0522850.

Threats to Validity

This research faced limitations due to the use of secondary data sources, which can include incomplete datasets and variances in the formatting of data. Additionally, the primary dataset used included patients assigned health navigator services at a Houston, Texas health system. While the patient population includes over 27,412 patients, the single health system and single geographic location may limit the application of these results in other healthcare markets due to differences in community benefits available to patients. The H-CUP-US dataset uses annual discharge data.

Consequently, the annual file included patients admitted in the year prior and discharged in the current year but excludes patients admitted to a hospital in the current year but discharged in the next year. This will result in 30, or 60-day readmissions for patients admitted in the latter part of the year, potentially not being captured if the subsequent admission crosses into the next year (Agency for Healthcare Research and Quality, 2018). Because of the annual file structure, 2010-2016, NRD data cannot be combined across data years to create a multiyear database. Access to data, the cost for dataset access, and data storage requirements may also create barriers.

Ethical Procedures

Patient data for this study were de-identified patient data. The dataset for this study would be destroyed upon completion of the research and presentation of the findings. Original data used for the compilation of the dataset is maintained and destroyed based on a health system's regulatory and organizational policies in Houston, Texas.

Summary

This study presented a quantitative approach of secondary data sources and examined the potential impact of the use of health navigators for ED patients. The primary focus was female patients who are either covered by Medicaid or female patients who were uninsured. The study provided some insight into factors of readmission rates and the potential for reduction of readmission rates. The secondary dataset was limited to ED patients at a health system in Houston, Texas, observed from December 2013 through July 2019.

In Section 3, I present the results and findings from this study.

Section 3: Results and Findings

Introduction

The purpose of this quantitative study was to explore the impact of using health navigators for an ED patient population of over 27,412. The population in this study was observed from December 2013 through July 2019.

The study focused on female patients who were covered by Medicaid or uninsured. This research sought to determine how health navigators affected this population's readmission rate. The patient population of 27,412 patients was a representative sample of the population overall during this study. According to the U.S. Census Bureau (2020), the population of Houston, Texas, as of July 1, 2019, was 2,320,268. Females comprised 50.1%. People without health insurance under the age of 65 made up 25.5%.

This section offers support for the data collection process and results of the analysis. It covered the following topics: sampling and sampling process, quantitative data, instrumentation, data analysis, and ethical procedures.

Review of Research Questions

This study posed three research questions involving quality improvement processes that targeted the reduction of readmission for female ED patients with no insurance or with Medicaid coverage. The research questions sought to determine the relationship between the process change, the addition of health navigators, and the desired result of the reduction of unnecessary readmission rates in the ED for the target population.

RQ1 –What is the relationship between the use of health navigators and the rate of readmissions for female ED patients who have Medicaid at six months post-discharge for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is no statistically significant difference in the rate of readmission for female ED patients who have Medicaid with the use of a health navigator at six months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rate for female ED patients who have Medicaid with the use of a health navigator at six months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

RQ2 –What is the relationship between the use of a health navigator and the rate of readmissions for female ED patients who have Medicaid at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is no statistically significant difference in the rate of readmission for female ED patients who have Medicaid with the use of a health navigator at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rate for female ED patients who have Medicaid with the use of a health navigator at

12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

RQ3 – What is the relationship between the use of a health navigator and the readmission rates for uninsured female ED patients for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is not a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator for a patient population of ED patients treated at a health system in Houston, Texas.

Data Handling

Data Transfer, Translating, Scrubbing, Coding, and Organizing

Data transfer, data translation, data scrubbing, coding, and organizing were key elements in conducting the analysis for this research. Below I detail how those steps were undertaken to ensure high quality and reliable data for this study.

Data Transfer

Upon approval from both the health systems in Houston, TX (HSC-MH-20-1039) and Walden Institutional Review Board (11-12-20-0522850), the dataset was retrieved from the NOMAD reporting system through the Information Systems Division Office.

The health system's NOMAD reporting system houses data from Cerner EMR, Allscripts/McKesson Patient Accounting, and Patient Management systems, among other data sources. This dataset included demographic data, billing data, registration data and is in a de-identified format.

Data Translation

The dataset for this study was imported into SPSS software for analysis. The initial analysis reviewed 27,412 observations of ED patients from December 2013 through July 2019 at a health system in Houston, Texas. This study's data was transferred from the original file format of .csv to a Microsoft Excel spreadsheet. The dataset was cleaned and organized thoroughly and was imported into SPSS for statistical analysis.

Data Scrubbing

The SPSS file was filtered by ED Patient location for the date range December 2013-July 2019. Additional filters were applied using the variables gender = F and Insurance = Self-Pay or Medicaid.

Dependent Variable Coding

The research considered dependent variables, including the rate of readmission at time intervals of 6, 12, and 18 months. Dependent variables included coverage by Medicaid and no insurance coverage.

Independent Variable Coding

The dataset contained three independent variables (IVs): health navigator engagement, patient care location of the emergency department, and patient gender.

These variables were used in the descriptive analysis and the correlation analysis. These variables were initially coded and extracted from the dataset used for this study.

Results

Table 1 below includes the descriptive statistics presenting the patients' statistical makeup based on ED location, gender, and payer type. This subset comprised the accounts for the date range December 2013 through July 2019. Table 2 presents the U.S. population's statistical makeup as of July 1, 2019, which correlated to this study's time period (U.S. Census Bureau, 2020).

Inferential Statistics for Primary Variables

The following section provides inferences and conclusions regarding the research variables and questions. The results presented contain inferential statistics for the dependent variables (Rate of Readmission, Insurance coverage – Medicaid and No Insurance Coverage*)*, the independent variables (health navigator Engagement, Patient Location, and Patient Gender*).* The research questions are presented below.

Research Question 1

RQ1 –What is the relationship between the use of health navigators and the rate of readmissions for female ED patients who have Medicaid at six months post-discharge for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is no statistically significant difference in the rate of readmission for female ED patients who have Medicaid with the use of a health navigator

at six months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rate for female ED patients who have Medicaid with the use of a health navigator at six months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

To determine the variation among the rate of readmission for female ED patients who have Medicaid with the use of a health navigator at six months post intervention, a series of chi-square statistical tests were performed to conduct comparisons. The comparisons showed distinct differences in readmission rates among females with Medicaid or no insurance coverage at six months post engagement with a health navigator.

According to the statistical test, the Pearson chi-square estimate presented in figure 2, there was a returned value of 1411.654, with 696 degrees of freedom and a *p*-value of .000. The relationship between readmission rate at six months and gender and insurance coverage is statistically significant (X^2 =1411.654, p>.05). Although a statistical relationship was revealed, based on the Cramer's *V* statistic of .232, gender and insurance coverage had a very strong statistical effect on readmission rate at six months with the use of a health navigator.

Research Question 2

RQ2 –What is the relationship between the use of a health navigator and the rate of readmissions for female ED patients who have Medicaid at 12 months post

intervention for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is no statistically significant difference in the rate of readmission for female ED patients who have Medicaid with the use of a health navigator at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rate for female ED patients who have Medicaid with the use of a health navigator at 12 months post intervention for a patient population of ED patients treated at a health system in Houston, Texas.

To determine the variation among the rate of readmission for female ED patients who have Medicaid with the use of a health navigator at twelve months post intervention, a series of chi-square statistical tests were performed to conduct comparisons. The comparisons showed distinct differences in readmission rates among females with Medicaid or no insurance coverage at twelve months post engagement with a health navigator.

According to the statistical test, the Pearson chi-square estimate presented in figure 3, there was a returned value of 892.224, with 488 degrees of freedom and a *p*-value of .000. The relationship between readmission rate at 12 months and gender and insurance coverage is statistically significant (X^2 =892.224, p>.05). Although a statistical relationship was revealed, based on the Cramer's *V* statistic of .185, gender and insurance

coverage had a very strong statistical effect on readmission rate at twelve months with the use of a health navigator.

Research Question 3

RQ3 – What is the relationship between the use of a health navigator and the readmission rates for uninsured female ED patients for a patient population of ED patients treated at a health system in Houston, Texas for the period of December 2013 – July 2019?

H_{01} – There is not a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator for a patient population of ED patients treated at a health system in Houston, Texas.

H_1- There is a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator for a patient population of ED patients treated at a health system in Houston, Texas.

To determine the variation among the rate of readmission for female ED patients who have no insurance with the use of a health navigator, a series of chi-square statistical tests were performed to conduct comparisons. The comparisons showed differences in readmission rates among females with no insurance coverage post engagement with a health navigator.

According to the statistical test, the Pearson chi-square estimate presented in figure 4, at six months, there was a returned value of 308.813, with 1 degree of freedom and a *p*-value of .000. The relationship between readmission rate at six months and

gender and no insurance coverage is statistically significant (X^2 =303.813, p>.05). Although a statistical relationship was revealed, based on the Cramer's *V* statistic of .086, gender and no insurance coverage had a very strong statistical effect on readmission rate with the use of a health navigator.

According to the statistical test, the Pearson chi-square estimate presented in figure 5, at 12 months, there was a returned value of 205.227, with 1 degree of freedom and a *p*-value of .000. The relationship between readmission rate at six months and gender and no insurance coverage is statistically significant (X^2 =205.227, p>.05). Although a statistical relationship was revealed, based on the Cramer's *V* statistic of .052, gender and no insurance coverage had a very strong statistical effect on readmission rate with the use of a health navigator.

According to the statistical test, the Pearson chi-square estimate presented in figure 6, at 18 months, there was a returned value of 178.770, with 1 degree of freedom and a *p*-value of .000. The relationship between readmission rate at six months and gender and no insurance coverage is statistically significant (X^2 =178.770, p>.05). Although a statistical relationship was revealed, based on the Cramer's *V* statistic of .049, gender and no insurance coverage had a very strong statistical effect on readmission rate with the use of a health navigator.

Table 1 *Descriptive Statistics – Patient Type, Patient Gender, and Insurance*

	Total	%
Total 2013-2019 All-Payer, ED, M/F	27,411	100
Female	16,176	59

Male	11,235	41
Uninsured	22,224	81
Medicaid	39,74	14

	Total	%
Total 2013-2019 All-Payer, ED, M/F	27,411	100
Female	16,176	59
Uninsured	12,672	46
Medicaid	2,857	10

Source. Memorial Hermann, 2019

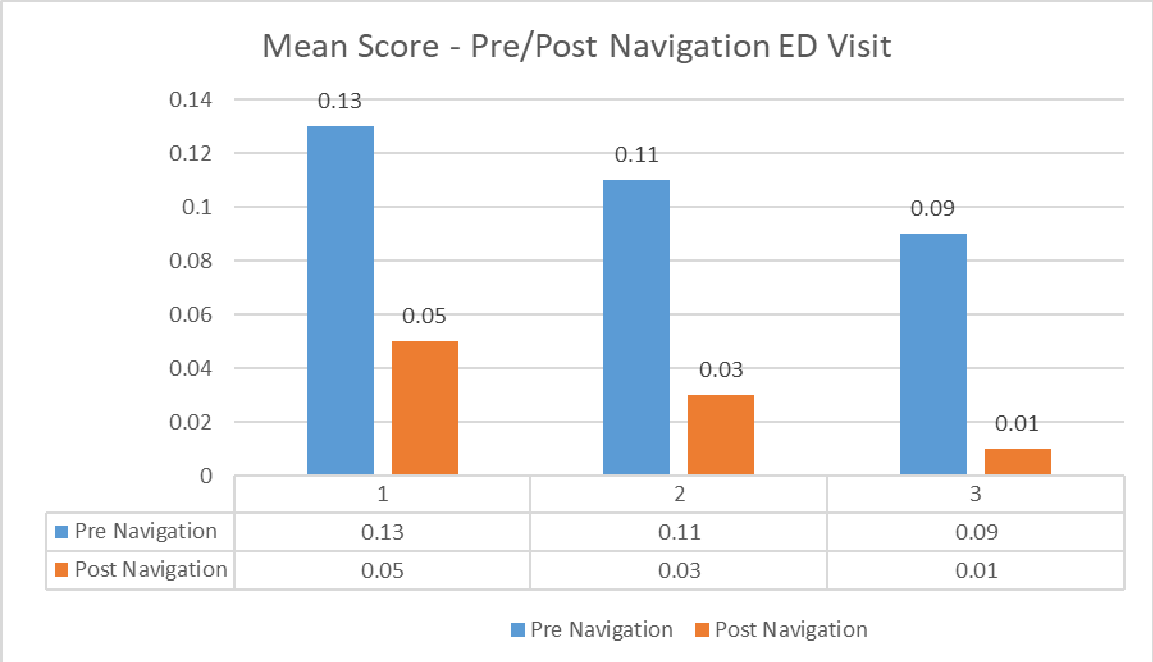
Table 2

Descriptive Statistics – Total Population

	Total	%
Total Population, July 1, 2019 (v2019)	2,320,268	100
Female	1,162454	50.1
Male	1,157,813	49.9
Uninsured	591,668	25.5

Source. U.S. Census Bureau, 2020

Figure 1 *Mean Patient ED Visits, Pre- and Post-navigation at 6 months, 12 months, and 18 months.*



Source. Memorial Hermann, 2019

Table 3 *Descriptive Statistics – Visit Financial Description*

Visit Financial Description		Frequency	Percent	Valid Percent
Valid	Medicaid HMO	1,532	6%	6%
	Medicaid Out State	71	0%	0%
	Medicaid Pending	27	0%	0%
	Medicaid Traditional	2,344	9%	9%
	Self Pay	22,224	81%	81%
	Total	26,198	96%	96%

Figure 2 *Visit Financial Description*

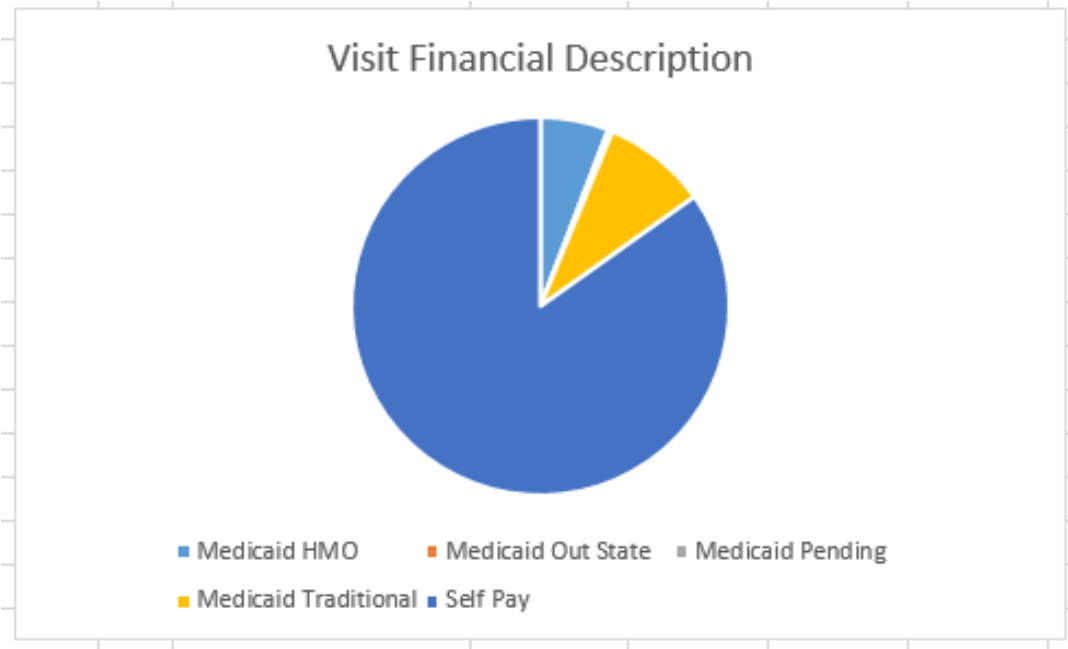


Figure 3 *Cross-tabulation Table – Gender and Readmission Rate at 6 Months*

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
gender * 6 mos	26198	100.0%	0	0.0%	26198	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1411.654[a]	696	.000
Likelihood Ratio	1682.790	696	.000
N of Valid Cases	26198		

a. 1211 cells (86.9%) have expected count less than 5. The minimum expected count is .41.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.232	.000
	Cramer's V	.232	.000
N of Valid Cases		26198	

gender	F	Count	12769
		Expected Count	12351.2
	M	Count	8068
		Expected Count	8485.8
Total		Count	20837
		Expected Count	20837.0

Figure 4 *Cross-tabulation Table – Gender and Readmission Rate at 12 Months*

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
gender * 12 mos	26198	100.0%	0	0.0%	26198	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	892.224[a]	488	.000
Likelihood Ratio	1076.445	488	.000
N of Valid Cases	26198		

a. 880 cells (90.0%) have expected count less than 5. The minimum expected count is .41.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.185	.000
	Cramer's V	.185	.000
N of Valid Cases		26198	

gender	F	Count	14090
		Expected Count	13872.2
	M	Count	9313
		Expected Count	9530.8
Total		Count	23403
		Expected Count	23403.0

Figure 5 *Cross-tabulation Table – Gender and Readmission Rate Uninsured Six months*

Crosstab

			V41		
				X	Total
V17	F	Count	23185	22668	45853
		Expected Count	24340.2	21512.8	45853.0
	M	Count	16371	12293	28664
		Expected Count	15215.8	13448.2	28664.0
Total		Count	39556	34961	74517
		Expected Count	39556.0	34961.0	74517.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	303.813[a]	1	.000		
Continuity Correction[b]	303.550	1	.000		
Likelihood Ratio	304.451	1	.000		
Fisher's Exact Test				.000	.000
N of Valid Cases	74517				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13448.23.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	-.064	.000
	Cramer's V	.064	.000
N of Valid Cases		74517	

Figure 6 *Cross-tabulation Table – Gender and Readmission Rate Uninsured 12 months*

Crosstab

			V42		
				X	Total
V17	F	Count	29590	16263	45853
		Expected Count	30488.1	15364.9	45853.0
	M	Count	19957	8707	28664
		Expected Count	19058.9	9605.1	28664.0
Total		Count	49547	24970	74517
		Expected Count	49547.0	24970.0	74517.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	205.227[a]	1	.000		
Continuity Correction[b]	204.998	1	.000		
Likelihood Ratio	206.594	1	.000		
Fisher's Exact Test				.000	.000
N of Valid Cases	74517				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9605.06.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	-.052	.000
	Cramer's V	.052	.000
N of Valid Cases		74517	

Figure 7 *Cross-tabulation Table – Gender and Readmission Rate Uninsured 18 months*

Crosstab

			V43		
				X	Total
V17	F	Count	34112	11741	45853
		Expected Count	34869.9	10983.1	45853.0
	M	Count	22556	6108	28664
		Expected Count	21798.1	6865.9	28664.0
Total		Count	56668	17849	74517
		Expected Count	56668.0	17849.0	74517.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	178.770[a]	1	.000		
Continuity Correction[b]	178.534	1	.000		
Likelihood Ratio	180.687	1	.000		
Fisher's Exact Test				.000	.000
N of Valid Cases	74517				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6865.87.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	-.049	.000
	Cramer's V	.049	.000
N of Valid Cases		74517	

Summary

Section 3 presented the data collection of the secondary dataset and the results for the statistical analyses conducted to answer the following research questions: In the first research question, RQ_1, the analysis determined that there was a statistically significant difference in the readmission rates of female ED patients who are covered by Medicaid with the use of a health navigator at six months post intervention. The analysis also indicated a relationship between gender and insurance coverage and the rate of readmission using a health navigator.

For the second research question, RQ_2, the analysis determined a statistically significant difference in the readmission rates of female ED patients covered by Medicaid with the use of a health navigator at 12 months post intervention. The analysis also demonstrated a relationship between gender and insurance coverage and the rate of readmission at 12 months with the use of a health navigator.

In the third research question, RQ_3, analysis determined a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator. Additionally, a relationship existed between gender and lack of insurance coverage and the rate of readmission rates with the use of a health navigator.

Section 4 presents the interpretation of the findings, limitations of the study, recommendations, and implications for professional practice and positive social change.

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

This retrospective, the quantitative study explored the impact of using health navigators for ED patients, focusing on female patients covered by Medicaid or uninsured, for the period 2013–2019 at a health system in Houston, Texas. This study assessed the use of navigators in the transition of care from hospital to home to reduce the 30-day readmission rates, rates that resulted in financial penalties from CMS and other payers. Secondary data from the health system in Houston were used to perform this study. The variables used to determine any statistical association were the rate of readmission at intervals of 6, 12, and 18 months, coverage by Medicaid, and no insurance coverage. Chi-square and multiple regression tests were performed. The results revealed statistically significant differences in readmission rates.

Interpretation of Findings

The results of this study are consistent with other studies involving the use of health navigators in different healthcare use cases such as oncology, geriatrics, and cardiology. While there are no comparable studies, there are commonalities with other studies on the use of health navigators. Demographic data on overall population trends provided insights worth comparing.

For RQ_1, the results demonstrated a statistically significant difference in the readmission rates of female ED patients covered by Medicaid with the use of a health navigator at six months post intervention. Also, there was a relationship between gender and insurance coverage and rate of readmission with the use of a health navigator.

For RQ_2, the results demonstrated a statistically significant difference in the readmission rates of female ED patients covered by Medicaid with the use of a health navigator at 12 months post intervention. Also, there was a relationship between gender and insurance coverage and the rate of readmission at 12 months with the use of a health navigator.

For RQ_3, the results demonstrated a statistically significant difference in the readmission rates of female ED patients who are uninsured with the use of a health navigator. Also, there was a relationship between gender and lack of insurance coverage and the rate of readmission rates with the use of a health navigator.

The literature is consistent in respect to insurance coverage by Medicaid or no insurance coverage and the rate of readmission. The lack of insurance or coverage by Medicaid places burdens on individuals and health systems. Unnecessary readmissions, defined as within 30 days, place an undue financial burden on health systems (Felix, Seaberg, Bursac, Thostenson, & Stewart, 2015; Dinerstein, 2018; McIlvennan, Eapen, & Allen, 2015). While there is no financial assistance component in the HRRP for healthcare providers (CMS, 2018), the addition of the (CCTP) created by the ACA does provide for over $500 million in assistance to hospitals that have applied for help and have been approved (McIlvennan, Eapen, & Allen, 2015).

As mentioned, there is limited evidence of previous research studies focusing on the specific impact of health navigators on the readmission rate for female ED patients with Medicaid coverage or non-insurance coverage. This study provides evidence to support the use of health navigators in the reduction of readmission rates for female

patients covered by Medicaid or with no insurance coverage. This study recommends further research into the relationship between the use of health navigators and this patient population.

Limitations of the Study

While extending the knowledge of the benefit of health navigators on this patient population, the findings of this study were limited to a health system in Houston, Texas. The scope included female ED patients that had presented to the health system for the period of 2013 – 2019 and tracked their subsequent ED use post intervention of a health navigator.

The study evaluation is intended to identify the impact of health navigators on this patient population. The data analyses focused on recurring readmission rates for this patient population. The results cannot conclude that the use of health navigators improved any clinical outcomes or health status. Those outcomes would require further investigation, including the patient population's acuity on initial and subsequent visits. Those factors may be important criteria in broader research that may enhance health navigator program adoption.

There may be financial limitations to the adoption of health navigator programs as funding is typically the responsibility of the health system. Currently, limited funding at the state or national level exists. While this study does not address clinical outcomes, future research may benefit the potential funding proposals for health navigator programs.

Recommendations

Despite the noted limitations, this study provided an important investigation expanding knowledge and analysis of health navigators' impact on readmission rates for female patients covered by Medicaid or with no insurance coverage. Additionally, the study expands the knowledge of health navigator programs on female ED patients, which is currently limited. This study demonstrates how health navigator programs can reduce unnecessary readmission rates, thus decreasing penalties and costs for health systems.

Implications for Professional Practice and Positive Social Change

Emergency departments are critical sources of critical care for patients. Emergency departments are also one of the highest healthcare settings costs in a health system (Consumer Health Ratings, 2020). Providing patient care in the appropriate setting can protect the health system and provide positive patient outcomes.

This study provides evidence on relevant and beneficial variables to patients and health systems. Health navigators assist patients in navigating the healthcare system and identifying and using community benefits to reduce the readmission rates, thus reducing readmission rates and potential penalties charged to health systems resulting from unnecessary readmissions. Reduction in readmission rates will decrease healthcare systems' costs, thus reducing overall healthcare spending for the country (AHA, 2018). CMS reduced federal funding for Navigator programs in 2018 to $10 million, and the current administration reduced funding for outreach outside of navigator programs by 90% (Pollitz, Tolbert, & Diaz, 2019).

Conclusions

Access to appropriate, safe care is critical for patient health. Reducing potentially preventable readmissions is essential for health systems. When patients access care in the ED setting, they are using the highest level of care and cost in the health system. Ensuring that patients can access the appropriate health resources, including community resources, can potentially reduce 30-, 60-, and 90-day readmission rates. The study results demonstrated statistical significance between the study variables. The analysis showed that readmission rates could be impacted by the use of health navigators in female ED patients covered by Medicaid or with no insurance coverage. As such, health navigator programs present an opportunity to impact readmission rates and reduce avoidable penalties to health systems and positively impact patient health.

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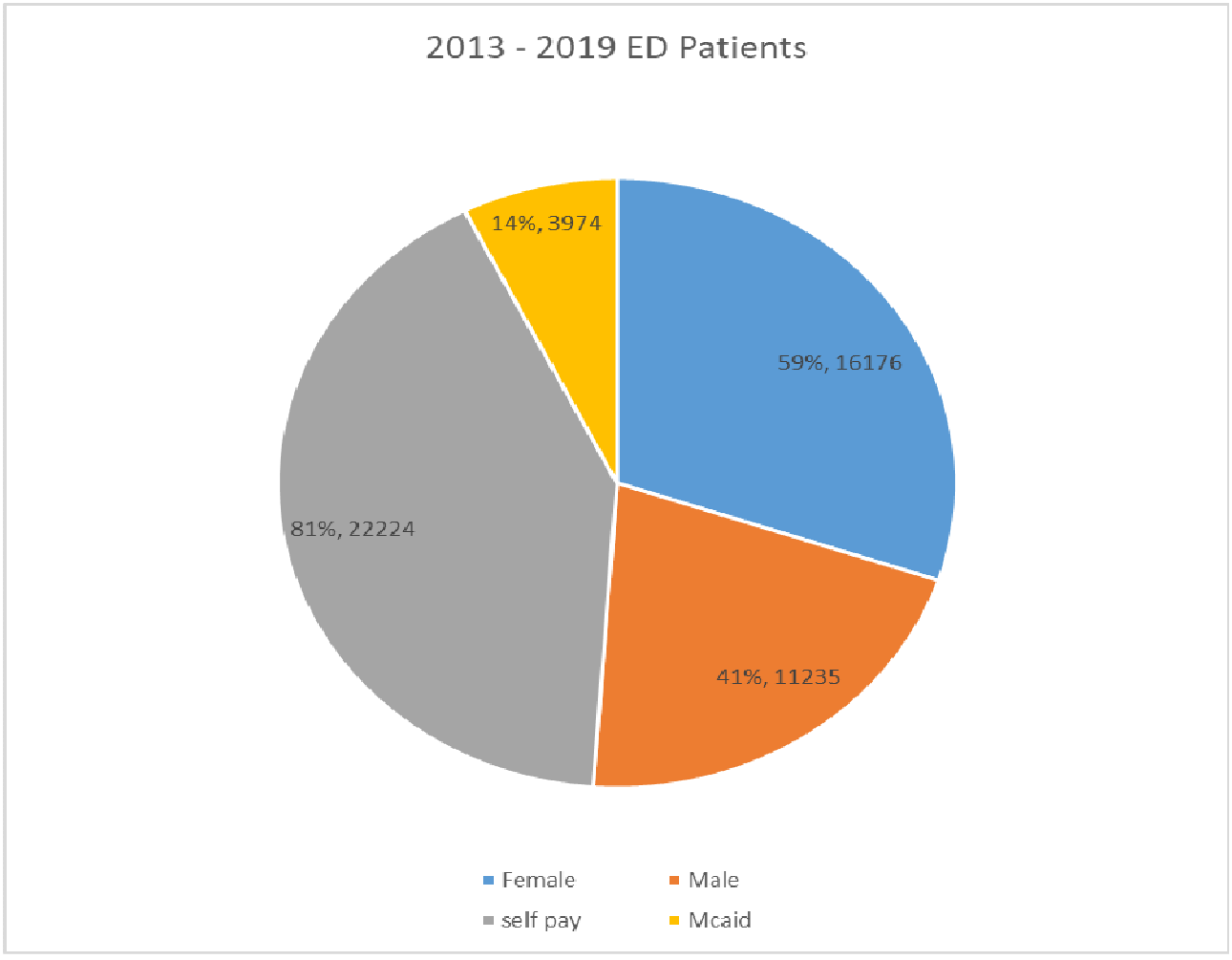
Appendix A: Dataset Composition



(Memorial Hermann, 2019)