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The Relationship Between Lack of Physician Interest in Rural U.S. Practices and Recruitment Strategies

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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
the review committee have been made.

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Walden University
2023

Abstract

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MBA, Ottawa University, 2019

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Doctoral Study Submitted in Partial Fulfillment

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Doctor of Healthcare Administration

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Abstract

The United States has been experiencing a physician shortage across all areas of medicine, and especially in rural and underserved populations. There have been limited changes made to hiring strategies and policies associated with recruitment in many small rural health care facilities. As the shortage continues, the health outcomes of populations affected indicate a reduction in positive health outcomes. The purpose of this quantitative study was to examine if there is a correlation between the lack of physician interest in recruitment and hiring strategies in rural health care organizations. The theoretical framework for this study is Lewin's three step model of change. Secondary data were collected from two surveys, including a CEO survey regarding the biggest challenges of being in a rural healthcare organization, and a survey of final-year medical school residents. A total of 786 respondents participated in the 2019 surveys. The data were analyzed using multiple regression analysis. The results indicated that there was no statistically significant relationship between the lack of physician recruitment when comparing compensation, sign on bonuses, and residency programs. There was no statistically significant relationship found when analyzing physician placement statistics compared with geographic location, personal time, lifestyle, financial package, engagement with recruiters, and loan forgiveness. Implications for positive social change include increasing the number of rural physicians that can result in improving the health outcomes of rural communities through increased access to health care.

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Dedication

I dedicate this research study to my husband, Luke. You have been my biggest supporter in all my endeavors. If it were not for your encouragement and patience during the many hours that I dedicated to pursuing my doctoral studies, I would never have reached my goal. And to my daughter, Amelia, and my son, Summit, thank you for inspiring me to continue my educational journey and to be a role model for you. Your support and understanding were my motivation to complete this journey.

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Section 1: Foundation of the Study and Literature Review

Introduction

The United States has faced physician shortages across all areas of health care for years, with the impact from the shortage felt greatest in rural and underserved regions of the country. According to Pavlick (2019), 20% of Americans are in rural locations in the United States but only a fraction of primary care physicians practice in those same areas. Zhang et al. (2020) found that with current projections in the United States based on available literature, physician shortages will most likely impact the county through the year 2030.

Physician shortages create a negative impact on rural communities as seen in reported population health outcomes. According to Gong et al. (2019), data across the United States in 2016 found that mortality rates in rural areas remained higher than urban mortality in 47 states. Causes of the higher rural mortality rates at the state level were found to be poverty levels, lack of physicians in rural areas, and less health insurance among the population (p. 2003). Without significant changes made to improve the physician shortages across the country, rural and underserved areas will continue to experience a negative impact on population health outcomes, especially with the 65 and older population growing. The purpose of this study was to investigate current hiring strategies for rural health care facilities to determine why there is a lack of interest with physician recruitment.

In the first section of the study, I will provide a description of the quantitative study including the background of the problem, problem and purpose statements, nature

of the study, and research questions. In addition, the study's theoretical framework, definitions, assumptions, limitations, significance, and literature review are discussed in detail.

Problem Statement

Physicians directly contribute to the success of health care organizations by creating an environment of timely and efficient access to care for the community they care for. Currently, there is a significant lack of interest in physicians actively seeking employment in rural U.S. health care organizations, with few recruitment programs within these facilities to increase interest from physicians. A lack of physicians practicing in rural U.S. geographic locations has been linked to higher mortality rates, with socioeconomic status among rural populations further increasing the mortality rates (Gong et al., 2018).

The U.S. population of individuals 65 years and older not only impacts patients, but also a population of physicians still in practice. This population will utilize more health care resources, and with the current physician shortage, the increased patient needs will increasingly impact healthcare resources across the country. Zhang et al. (2020) wrote that the current physician shortage will continue to trend until around 2030. Rural locations across the United States are also impacted negatively due to physician shortages. In a study by Shipman et al. (2019), there has been a 15-year decline with incoming medical student graduates going into rural health care practices. Renjel et al. (2019) wrote that several efforts have been investigated to determine ways to increase physician numbers in rural areas. Health care organizations have attempted to draw

interest through financial incentives, loan repayment considerations, and additional investments in the facility and the community. Additionally, these facilities have also considered increasing rural physician training as well as working to recruit physicians that have a rural background (Renjel et al., 2019).

In research by Pavlik (2019), having a competitive salary was recommended as a major attractor to increase recruitment and retention for physicians. Pavlik also noted that the lack of recruitment to the rural workforce was due to limited resources in both professional and social aspects of lifestyles, difficulty obtaining medical specialists, and outdated technology resources within organizations. These concerns can create significant challenges for smaller organizations to actively recruit physicians. I found that there was a gap in literature with ways that existing health care organizations were conducting their recruitment processes. By examining the different challenges faced by health care organizations, research can be conducted to improve the policies in place for recruitment of physicians.

Purpose of the Study

The purpose of this quantitative study was to examine if there is a correlation between the lack of physician interest in recruitment and hiring strategies in rural health care organizations. The findings in this study could provide information that benefits how rural health care organizations could improve their recruitment strategies for new physicians and increase their success in retaining new physicians. The dependent variable in this study was the lack of physician interest in recruitment with rural United States health care organizations. Independent variables for the study examined hiring practices

that included considerations of increased compensation, offering signing bonuses, and establishing a residency program within the organization.

Research Questions and Hypothesis

This study examined if there is a correlation between the lack of physician interest in recruitment and hiring strategies in rural health care organizations. For this study, I identified the lack of physician interest in recruitment with rural U.S. health care organizations as the dependent variable, and the organization's hiring practices as the independent variables. The following research questions and hypotheses are presented in this study:

RQ: Is there a correlation between the lack of physician recruitment and hiring practices in rural health care facilities?

$H_0$1: There is no statistically significant correlation between the lack physician recruitment and hiring practices in rural U.S. health care facilities.

H_a1: There is a statistically significant correlation between the lack of physician recruitment and hiring practices in rural U.S. health care facilities.

RQ: Is physician recruitment in rural U.S. health care facilities successful when considering physician requirements for relocation?

$H_0$2: There is no statistically significant association between physician placement in rural U.S. health care facilities and success when considering physician requirements for relocation.

H_a2 – There is a statistically significant association between physician placement in rural U.S health care facilities and success when considering physician requirements for relocation.

Theoretical Framework

The theory that grounds this study is Lewin's (1947) three step model of change which focuses on identifying a process that is not effective, changing that process, and then implementing a new process to improve the issue. Lewin's field theory was developed for social and organizational change in the 1940's (Burnes, 2020). This theory supports the study because it considers the following ideas: (1) the standard current practice of physician recruitment, (2) identifies improvements that may increase physician interest, and (3) develops the new improvements into a process that can be implemented by health care organizations. When considering the study variables, the dependent variable of lack of interest from physicians in rural recruitment can be analyzed to understand the current standard. Then, the independent variables can be analyzed to determine if there are ways to increase interest. Thirdly, the outcome of the research can help develop new processes for the recruitment of physicians. The goal for this research was to identify new ways to create interest in careers for physicians in rural and underserved locations. Current health care organizational policies and practices are failing to create interest in physician careers. By using Lewin's three step model of change, new hiring strategies can be developed and implemented, along with the understanding of the implications for social change.

Nature of the Study

To address the research questions in this quantitative study, the specific research design included a multivariate multiple regression analysis that was used for the stated research questions (Frankfort-Nachmias et al., 2020). A multivariate multiple regression analysis uses a dependent variable and multiple independent variables for the purpose of the study (Frankfort-Nachmias et al., 2020).

For RQ1, the dependent variable was the lack of physician recruitment statistics in rural U.S. hospitals, and the independent variables are increased compensation, offering signing bonuses, and establishing residency programs within the hospital. For RQ2, the dependent variable was physician placement, and the independent variables were geographic location, adequate personal time, lifestyle, financial package, engagement with recruiters, and educational loan forgiveness.

Data were collected from two different surveys. The American College of Healthcare Executives (ACHE) published a 2019 survey that discussed the top challenges CEOs are facing in health care organizations, which indicated physician recruitment as a challenge. Merritt-Hawkins published a 2019 survey that discussed final-year medical residents and top priorities for committing to a medical practice. The data from both surveys were analyzed together to determine if there is a correlation between variables.

Literature Search Strategy

The Walden University Library, Google Scholar, and Walden Discovery were utilized for searching for relevant literature. Keywords and phrases included physician recruitment, physician retention, rural health care, and underserved populations. The

search process began as a board search that was further limited to peer-reviewed journals and articles with a date range of 2018-2022. I evaluated several different types of studies including quantitative, qualitative, and mixed method research designs. Articles for this research study were obtained from ProQuest, JABS, AJRH, URJ, Sage, Science Direct, and Health Affairs. In addition, research tables were utilized from the ACL, AAMC, and Merritt Hawkins.

Literature Review

There are multiple reasons that health care organizations fail to recruit and retain physicians. An organization's current hiring practices may be outdated, salary expectations may be out of range, and there may be a lack of amenities for a physician's family. Lack of educational opportunities for physicians in medical school also creates limitations for experience in rural settings. This may impact a new graduate's options when considering medical practice and is found in medical school programs that do not have a dedicated rural health residency for students.

The COVID-19 pandemic placed additional strain on healthcare organizations during 2020. According to Sirkin et al. (2023), primary care physicians responded to the challenges that COVID-19 presented. Many health care organizations continued to provide essential health services to their communities, while also adjusting how services were provided. The changes in clinical practice also impacted hiring processes in health care organizations, as well as medical school rotations within some healthcare facilities (p. 76).

Failure to successfully market physician career opportunities can create challenges within the organization that may have an impact on the access to care the organization provides, as well as community health outcomes. Rural settings are best served by having access to nearby medical care. If the distance is too far, or there is not reasonable and timely access to care, the overall health of the population can decline. As the aging population in the United States continues to rise, the need for more physicians will also continue to grow.

Current Recruitment Strategies and Concerns

A lack of physician interest regarding recruitment in rural locations continues to be a major struggle for rural health care organizations. In research by Asghari et al. (2020), physicians cited scope of practice as a top priority in deciding on a practice. Rural jobs that provide a wide scope of patients, have flexible hours, and manageable call schedules were equally important to the physicians that were polled. When that data is compared to current rural health staffing models, many health care organizations are faced with limited staffing to cover hospitals which reduced staffing flexibly and creates more rigorous call scheduling. These concerns can escalate the problems associated with lack of physician interest.

Medical school curriculum has also influenced shortages in rural health care regions. According to Pavlik et al., (2019), recruiters face challenges when attempting to place physicians in healthcare organizations including a limited number of qualified candidates, a lack of curriculum options for medical schools, a high need for new physicians, and the increasing numbers of retiring physicians that are 65 years and older.

These four challenges directly impact a population's need for health care. In addition, there are issues that rural healthcare organizations face when recruiting a workforce including lower salaries compared to urban facilities, longer work hours, and concerns with location (Pavlik et al, 2019).

According to Danish et al. (2020), there are both fundamental and acquired factors that contribute to work motivation. Danish et al. described a review of the policies to improve rural physician recruitment through Herzberg's two-factor theory. The paper explained how policies can impact recruitment and retention through different factors. Intrinsic factors include:

1. *Achievement:* success or failure and seeing the results of one's work.
2. *Recognition:* acts of notice, admiration, and critique.
3. *The work:* good/bad feelings, varied/routine, easy/difficult, interesting/boring.
4. *Responsibility:* authority needed for the job and overseeing.
5. *Advancement:* growth in position.
6. *Personal growth:* recognizing ways for self-improvement (Danish et al., 2020).

Extrinsic factors include:

1. *Administrative policies:* effectiveness of management compared with employee expectation.
2. *Supervision:* leadership, fairness, ability to teach and assign responsibility or recognition of issues within.
3. *Interpersonal relationships:* interactions between people in the work environment.

4. *Work conditions:* total consideration of the work environment.

5. *Salary:* compensation.

6. *Status:* social or professional rank as compared with personal life.

7. *Security:* job security and company stability

8. *Personal life:* how the job impacts a work/life balance (Danish et al., 2020).

In an analysis by Renjel et al. (2019), the authors conducted interviews with physicians that included five key areas for recruitment including: levels and requirements of practice, appreciation of a rural lifestyle, ability of shaping their practice model, and work environment/administration values. Their research found that the appeal of a rural lifestyle was overwhelmingly positive, while the practice model and work environment indicated areas that could benefit from improvement.

When considering compensation packages, Asghari et al. (2020) found that physicians placed a priority on financial incentives. These incentives ranked higher than increased salary recommendations in the same study. Asghari et al. also indicated that when rural health care organizations offered financial incentives such as sign on bonuses or student loan repayment, the organizations were more likely to recruit physicians than locations that did not offer incentives.

Educational Considerations

Growing up in a rural setting is a top reason that medical students decide to return to a rural practice. Medical students that have had experience in rural health care settings have a more in-depth understanding of what is required to work in a rural practice. Shipman et al. (2019) research indicated a fifteen-year decline within rural medical

students, with rural students in an underwhelming representation all incoming medical students in 2017. The authors found that a four-fold increase rural medical student would be required to create a proportional standard of rural representation in the overall U.S. population Shipman et al., 2019).

In the article by Jattan et al. (2019), the authors examined the current opportunities for medical students to spend time training in rural settings, along with current academic curricula available to the medical students. Results from their research found that while there are training rotations available for medical students, there is an ongoing lack of teaching opportunities from the physicians in the different rural locations. Fifty-nine percent of rural health care organizations had residents training. The lack of a structure program was noted in these rural programs when compared with their urban counterparts (Jattan et al., 2019). The urban health care organizations offered larger team support and far more experiences for medical students participating in medical practice, whereas rural health care organizations included medical students in a less structured day to day approach.

In an article by Johnson et al. (2018), the authors found that a major dis-satisfier for rural based physicians was the heavier workload and the increased responsibilities that came with the position. Expectations for clinical practice and on-call rounds can create burnout and decreased satisfaction for physicians, especially new graduates. When these factors combine with concerns of social isolation, the issues with recruitment increase for a health care organization.

Population Size and Age

A current issue impacting the physician shortage is the increasing elderly population in the United States. The Administration for Community Living (ACL) (2021) reported that persons 65 years and older totaled 54.1 million in 2019, representing 16% of the population. The population of 65 and older Americans has increased 14.4 million (or 36%) since 2009, compared to an increase of 3% for the under-65 population (p. 4). Consistent goals among health care organizations include providing a higher quality of care, increasing access, and reducing medical costs through an increased numbers of healthcare providers (Zhang et al., 2020). Due to the United States' aging population, population growth, and an increase in the insured population following the Affordable Care Act (ACA), increasing physician access for patients has been found to be the top healthcare issue in the country (Zhang et al., 2020).

According to Flaherty et al., (2019), as the U.S. population ages in the next ten years, the elderly population will increase to 69 million, with two of every three individuals in that population dealing with multiple chronic conditions (p. S400). And because of the increased need for primary care, there is a widening gap in the workforce of skilled physicians to provide effective and appropriate care to the growing population (Flaherty et al., 2019). This shortage will impact both urban and rural healthcare organizations but will be felt much stronger in a rural setting that may face physician shortages.

In an article by Skinner et al. (2019), another dimension with the aging population in the United States is the impact of physicians also nearing the retirement age. There has

been little research done on how the aging physician workforce will contribute to the ongoing need for physician recruitment. One known issue is that the need for recruitment will continue to increase in the next years. Health care organizations should have a plan in process well before the actual need is presented. Skinner et al. concludes that when considering the current physician practice models today, it may be necessary to change the how the facility staff's a practice by adding advanced practice professionals to supplement staffing needs in health care organizations. These advanced practice professionals work under the supervision of a physician but maintain their own patient load.

Population Health Outcomes

Since the 1980s, mortality rates are more prominent in rural areas when compared to urban areas in the U.S., with a steadily increasing gap. Additionally, it has been reported that U.S. life expectancy was reduced in rural when compared with urban areas during the same period (Gong et al., 2018). The authors conducted a research study to determine a Wellbeing Index for each state based on socio-economic deprivations. When comparing urban and rural areas, the number of primary care physicians was higher in urban settings in all but three states. This same study also found that state policies play an important role in determining the conditions that impact mortality rates (Gong et al., 2018). And while physician shortages have an impact on all-cause mortality rates, there are multiple indicators that states should be aware of.

Primary care is essential for healthcare organizations to promote health equity and efficient access to care through interactions with the population (Streeter et al., 2020).

Primary care services aim to be the first step for patients seeking care within a health care system, with the level of care increasing into comprehensive care coordination as needed (Streeter et al., 2020). Increasing the availability of health care professionals in underserved areas has become an ongoing goal to improve health equity and address other barriers that impact access to healthcare. The authors found that even though these social determinants are known, there has still been inadequate growth to better develop a plan to tackle issues such as physician shortages.

Research also shows that there will continue to be a high demand for a health workforce that can provide quality care for the increasingly older adult population (Flaherty et al., 2019). Addressing the growing demand for healthcare in an aging population will also improve the health outcomes for a community. Several opportunities can advance progress in this area based on the current state of the workforce, training recommendations, and barriers. Recently, the American College of Physicians published a request for promotion of health equity, addressing social determinants of health, and reducing barriers to care through recognition of physician work force shortages (Streeter et al., 2020).

According to Basu et al. (2019), service areas that have a greater physician presence tend to have lower mortality rates. Through the years of 2005 through 2015, research has shown a decrease in physician presence with an increase in overall mortality rates. Another common trend that researchers are finding is the correlation between lack of physician availability and overall population health outcomes. One point the authors touched on was what a future analysis of the primary care shortage could focus on. The

recommendation was to explore the practice dynamics of teamwork across physician practices in both primary and specialty care, and then contract with payment models to better determine new approaches that may positively impact mortality rates and other outcomes within the community (Basu et al., 2019). Overall, programs to specifically direct more resources to primary care physician supply will continue to be important for population health.

As the growing population continues to age in the United States, there will be a greater strain on the healthcare delivery system throughout the country. Faced with limited physicians and other resources, it will be necessary to change the way health care is delivered in both urban and rural locations. Bhatt et al. (2018) wrote that hospitals and the community stakeholders could work together to identify barriers within their community to determine what is impeding the facility from achieving better health outcomes through shared goals to make changes that promote a healthier community. Overall, improving access to high quality care in vulnerable communities through development of new ways to use limited resources and to transform care for changing communities can have a significant impact in rural communities (Bhatt et al., 2018).

Research Gap

Although researchers have investigated this issue, there is limited literature on how rural health care facilities can create, implement, and market recruitment programs prompting increased physician recruitment placement in practices future planning, prompting increased physician placement in practices in the future. The Rural Health Information Hub (2022) provides resources and data related directly to rural health care

recruitment and retention in the United States. The information includes topics such as resources, models, and funding opportunities for health care organizations.

Significant changes to hiring practices have not occurred in the past decade for many rural healthcare organizations, and smaller, isolated regions are less desirable for many physicians and their families. Without changes to current processes, rural health care organizations will continue to combat issues with challenging physician recruitment.

Literature Review Conclusion

There has been concern about physician shortages from numerous authors and medical organizations. Data repeatedly shows that the U.S. population is aging, with the 65 and older group growing substantially. And even though the population is continuing to grow, many rural healthcare organizations continue to face struggles with recruitment of physicians. When considering the research by Zhang et al. (2020), 20% of Americans are in rural locations in the U.S., but under ten percent of primary care physicians practice in these rural areas. The authors also found that with current projections in the US, physician shortages will most likely continue to impact the county through 2030 (Zhang et al., 2020).

A contributing factor to the lack of interest in physician recruitment is the lack of in-depth medical school training for students. Many programs offer limited rural resident rotations, which limits the medical student's perspective in rural practices. Jattan et al. (2019) found that fifty-nine percent of rural health care organizations had residents training, but a lack of structured residency was noted in these rural programs when compared with their urban counterparts (Jattan et al., 2019).

Mortality rates of a community are a good indicator of socioeconomic status and disparities. For rural healthcare organizations, a lack of physicians can have a staggering effect on the community's health outcomes. Understaffed physician practices lessen efficient and timely access to care. Streeter et al. (2019) wrote that there have been multiple calls to increase awareness of the ongoing physician shortage across the United States, but there have been little changes to improve the current situation.

Definitions

Definitions for the study include:

Aging population: Individuals aged 65 and older (Roberts et al., 2018).

Compensation: Agreed salary amount between employer and employee to provide physician services.

Physician recruitment: Strategies utilized by a health care organization to hire and retain physicians (Pavlik, 2019). Strategies can include financial incentives and other methods to attract prospective physicians.

Physician shortage: Lack of physicians directly affects the ability of a facility to improve the health status and overall health equity of a population (Danish, 2020).

Program evaluation: A systematic way to improve current processes by involving procedures that are functional, reasonable, and ethical (CDC, 2021).

Physician recruitment: the action to fulfill an initial interest to develop a medical practice in said location (Danish et al., 2020).

Recruitment programs: Processes and procedures used by healthcare organizations to actively seek candidates for employment.

Retention: The motivation behind the decision to practice in rural location and staying at the location after experiencing life in a rural setting (Danish et al., 2020).

Rural Location: defined as Micro area (10,000-49,9999 people) and located in counties outside of urban populations (HRSA, 2022).

Sign on bonus: Money received for entering an agreement for employment with a health care organization.

Underserved populations: Populations that face barriers to accessing health care services, including geographical locations, age, and financial status (Zhang, 2020).

Assumptions

The study's premise was based on rural health care organizations and their struggles to recruit new physicians. This does not mean that all rural health care organizations are struggling with physician recruitment, but current data does indicate that there is a major need among many rural healthcare organizations. There are various resources that indicate physicians have different requirements for selecting a particular organization, which are reviewed through datasets for this study. There are potentially more physician feedback points, but the study is limited to the questions asked in the Merritt-Hawkins study.

Second, I assumed that all literature selected for this study was collected properly and peer reviewed. The Walden Library was my primary location for information, with

the assumption that the information was properly presented and without bias. The articles obtained were compared across available literature throughout the Walden database.

Scope and Delimitations

The scope of the study is to compare data from rural healthcare organizations that indicate the need for physician recruitment. Larger, urban healthcare organizations outside of this scope were not analyzed in the secondary data set. The data set contains variables used by physician interviews along with data regarding healthcare organization needs to determine the different factors impacting physician recruitment.

Limitations

This study's limitations include the focus on graduating medical students looking to establish a practice. This created the potential for bias from survey responses since physicians already in an established practice and now looking for a change in employment would not be considered. Additionally, there was a potential for bias with non-responses to the surveys. This is true for both the graduating medical students as well CEO's participating in the top issue's survey. Participant non-responses could have occurred due to lack of availability to take the surveys or confusion with the survey process.

Significance

I analyzed data and examined relationships between top issues that CEO's have indicated as major concerns in overall operations when compared with final-year medical school residents and top priorities for selecting a medical practice. The significance of the study included recognizing a need for changes to current physician recruitment practices,

determining the need for updating existing policies and procedures relevant to physician recruitment.

According to the NCLS (2020), as many as one in four rural hospitals are currently at risk of closing. With rural hospital closures, there is significantly reduced access to health services including Emergency Room care. Another major concern with closures results in job loss and other adverse economic effects to the community. In addition, health care providers often leave their local community following a rural hospital closure. This study may create a social impact by finding ways to improve and change how physicians are recruited, thus creating positive social change for the entire community served by the health care organization.

Summary and Conclusion

The primary focus of this research paper was to address issues with physician recruitment in rural locations. Looking at what drives physicians to seek employment inside rural geographical locations when compared with top priorities for living in a rural community can be useful in shaping new policies for healthcare organizations to actively recruit for these positions. Danish et al. (2020) found that coercive strategies from decision-makers can ensure recruitment area failing to improve retention because of their negative effect on motivation from staff already employed within the organization (p. 430). Appropriate levels of physician staffing can positively impact an organization by providing faster, more effective care within the organization. This creates an efficient business model that can improve the overall health of the community served through the efficient delivery of health care services.

In the first section, I provided the background of the problem, problem statement, purpose of the study, theoretical framework, nature of the study, significance, assumptions, limitations, delimitations, and a review of the literature. In the following sections, I will provide further details on research design, data collection, and implications for change.

Section 2: Research Design and Data Collection

Introduction

The inability for health care organizations to recruit and retain physicians in a rural setting has negatively impacted communities for years. There have been numerous strategies implemented by different health care organizations, but the numbers of physicians actively recruited continues to be low (Asghari et al., 2019). Furthermore, multiple reviews of facility-initiated rural recruitment continue to indicate a lack of findings available for decision-makers within these facilities (Asghari et al., 2019).

For an administrator, reviewing previously conducted research for recruitment planning is necessary to develop a specific plan for a health care organization. It is important to note that what works for one organization may fail for another. It is up to the administrator to decide on the best path that will fulfill the needs of their organization. Danish et al. (2020) wrote that an issue that continues to impact recruitment has been attributed to weak or lacking policy development. Danish et al. also found that more regulations, financial components, educational, and support policies tailored to an individual can be considered for more optimal recruitment policy.

In this section, I will provide the purpose statement of the study followed by the role of the researcher. Also included is a description of the study questions and participants, research method and design, population and sampling, and data collection and analysis. The secondary data sets include survey results from hospital CEO's indicating top issues in hospitals across the United States, as well as survey data from final-year residents' values on selecting a location to begin their medical practice. Section

two also includes reliability and validity measures as well as ethical considerations used to ensure the overall integrity of the research study.

Research Design and Rationale

The purpose of this quantitative study was to examine if there is a correlation between the lack of physician interest in recruitment and hiring strategies in rural health care organizations. I examined two different approaches to recruitment practices. The first approach looked at the relationship between the overall successes of physician recruitment compared with hiring practices in rural health care facilities. The second compared physician recruitment success when considering physicians requirements for job relocation. The dependent variable in this study was the lack of physician interest in recruitment with rural U.S. health care organizations. Independent variables for the study examined hiring practices that included considerations of increased compensation, offering signing bonuses, and establishing a residency program within the organization.

For the research design, multiple regression testing was utilized. Through comparison of data between hospital CEOs and graduating medical students, the goal was to determine what correlations are present and how rural physician practices attract new talent. The information from the research may provide insight on news ways to increase efforts in rural healthcare, thus creating positive social change through improved health outcomes for rural communities.

Methodology

Population

A critical access hospital is defined as a hospital that has no more than twenty-five patient beds. These facilities are located at least thirty-five miles from another hospital and have an average length of stay of 96 hours or less. Critical access hospitals also provide around the clock emergency care services (RHIhub, 2021). The target population for this study included a 2019 survey from the American College of Healthcare Executives. The ACHE asked CEO survey respondents to rank eleven issues affecting their hospitals by level of significance. The survey was emailed to 1,481 community hospital CEOs who are also ACHE members. 395 CEOs, or 27 percent, responded (ACHE, 2019). The researcher had access to this information through the ACHE website for actively enrolled members.

Sampling

The topics listed below were included on the ACHE survey sent to CEOs to rank according to needs.

- Financial challenges
- Personnel shortages
- Behavioral health/addiction issues
- Governmental mandates
- Patient safety and quality
- Access to care
- Patient satisfaction

- Physician-hospital relations
- Technology
- Population health management
- Reorganization (e.g., mergers, acquisitions, restructuring, partnerships)

The Merritt-Hawkins survey was emailed to approximately 20,000 final-year medical students across all specialties using a randomly selected email list provided by a third-party database vendor (Merritt-Hawkins, 2019). Surveys were sent to residents via email with a total of 391 responses received for a response rate of 2% (Merritt-Hawkins, 2019). The questions listed below were included on the survey sent to medical residents.

1. What is your medical specialty?
2. Are you a US medical school graduate?
3. About how many times during the course of your residency have you been solicited about medical practice job opportunities by recruiters, hospitals, medical groups, or others? Please include all recruiting letters, phone calls, personal conversations, emails or other forms of communication you may have received. Are you a US medical graduate?
    a. Number of recruitment solicitations by primary care, surgical, diagnostic and IM sub/ other specialists.
    b. Number of recruitment solicitations by U.S. Medical School graduates and International Medical School (IMG) graduates.
4. How would you consider your level of contact from recruiters during your residency?

   a. By primary care, surgical, diagnostic and IM sub/other
   b. By U.S. Medical Graduates and International Medical Graduates (IMGs)

5. What is your preferred method of dealing with recruiters?
6. At what point in your residency did you begin to seriously examine practice opportunities – actually obtaining information, arranging interviews, etc.?
7. What is important to you as you consider practice opportunities?
8. Which of the following practice settings would you be most open to?
9. Based on population, in what size community would you most like to practice?
   a. By primary care, surgical, diagnostic, and IM sub/other.
   b. By U.S. Medical Graduates and International Medical Graduates (IMGs)
10. Which of the following types of compensation would you prefer at the start of your first professional practice?
11. What level of compensation do you anticipate achieving in your first professional practice?
   a. Level of expected compensation by primary care, surgical, diagnostic, IM sub/other.
   b. Level of expected compensation by US Medical Graduates and International Medical Graduates (IMGs).
12. What do you owe in student loans?

a. Owed in student loans by primary care, surgical, diagnostic and IM sub/other.
b. Owed in student loans, U.S. Medical Graduates and International Medical Graduates (IMGs).

13. Are you concerned about educational loan repayment/forgiveness?
    a. Concerned about educational loan repayment/forgiveness by primary care, surgical, diagnostic and IM sub/other.
    b. Concerned about educational loan repayment/forgiveness by U.S. Medical Graduates and International Medical School Graduates (IMGs).
14. How prepared are you to handle the "business side" of your medical career, including employment contracts, compensation arrangements, and other facets of employment?
15. During the course of your medical training did you receive any formal instruction regarding "employment" issues such as contracts, compensation arrangements, interviewing techniques, reimbursement methods, etc.?
16. What causes you the most concern as you enter your first professional practice? Please rate the following factors, with one being the most concerning and three being the least concerning.
17. If you were to begin your education again, would you study medicine or would you select another field?

Instrumentation and Operationalization

For this study, a multivariate multiple regression analysis was utilized for both research questions (Frankfort-Nachmias et al., 2020). This type of analysis uses a single dependent variable and multiple independent variables to determine the relationship between the variables (Frankfort-Nachmias et al., 2020). The study was developed to assess issues impacting physician recruitment. The use of multiple regression provides insight into if the relationship is significant when comparing the variables. Additionally, a confidence level of 95% was used for the study. A margin of error and a confidence interval of 5% was used for the calculations analyzing the data. The analysis was considered cross-sectional as secondary data sets collect data from a population at a specific time.

For RQ1, the dependent variable was the physician recruitment statistics in rural hospitals, and the independent variables were increased compensation, offering signing bonuses, and establishing residency programs within the hospital. For RQ2, the independent variable was physician placement, and the independent variables include geographic location, adequate personal time, lifestyle, financial package, engagement with recruiters, and educational loan forgiveness.

The data was analyzed and provided insight into how effective current recruitment programs are in rural areas. I recognized that physician recruitment in rural locations such as critical access hospitals has been challenging for years, but no major changes have occurred to create a more appealing recruitment for new physicians. In this

section, I explained the research design and methods with the goal of improving current practices within rural healthcare organizations.

Estimated Sample Size Power Analysis

For the validity of the study, it was necessary to determine the appropriate sample size for the research. The ACHE includes 48,000 health care executives. The ACHE provides ongoing research in healthcare management through surveys, interviews, and focus groups that allow members to participate throughout the year. Data is collected and distributed yearly to members through numerous publications. For the 2019 survey, 1,481 community hospital CEOs were contacted to participate in the survey, with 395 members responding in total.

In 2019, Merritt-Hawkins conducted a study for final-year medical students and fellows to determine the level of demand for graduating residents as well as career preferences and future practice plans. For the 2019 survey, 20,000 residents and fellows were contacted to participate in the study, with 391 participants responding in total.

Given the following parameters by Charan et al. (2013), an ideal sample size can be determined by utilizing a confidence level of 95%, and margin of error and confidence levels of 5%. Results of the calculations indicated that 377 participants were needed for this study. With the sample populations being greater than 10,000, the population size was sufficient for the study.

Data Analysis and Collection Plan

The statistical study used for this quantitative research project is a multivariate multiple regression analysis (Frankfort-Nachmias et al., 2020). This type of analysis uses

a dependent variable and multiple independent variables (Frankfort-Nachmias et al., 2020). In the first research question, the dependent variable was physician recruitment statistics in rural hospitals, and the independent variables included increased compensation, offering signing bonuses, and establishing residency programs within the hospital. For the second research question, the independent variable was physician placement, and the independent variables included geographic location, adequate personal time, lifestyle, financial package, engagement with recruiters, and educational loan forgiveness.

The statistical test used for the study was multiple regression. In this type of testing, the regression model estimates how multiple independent variables affect one dependent variable (Frankfort-Nachmias et al., 2020). To minimize researcher bias, I used two secondary-data online surveys and used SPSS to analyze the data.

Research Questions and Hypotheses

For this study, two research questions were developed and tested. They are as indicated below.

RQ: Is there a correlation between the lack of physician recruitment and hiring practices in rural U.S. health care facilities?

$H_0$1: There is no statistically significant correlation between the lack physician recruitment and hiring practices in rural U.S. health care facilities.

H_a1: There is a statistically significant correlation between the lack of physician recruitment and hiring practices in rural U.S. health care facilities.

RQ: Is physician recruitment in rural U.S. health care facilities successful when considering physician requirements for relocation?

$H_0$2: There is no statistically significant association between physician placement in rural U.S. health care facilities and success when considering physician requirements for relocation.

H_a2: There is a statistically significant association between physician placement in rural U.S health care facilities and success when considering physician requirements for relocation.

Data collection for this study occurred after I received IRB approval. I conducted the study through secondary data sources. The CEO survey that was used was sent to 1,481 ACHE members who are also hospital CEOs. Three hundred ninety-five CEOs from community hospitals responded to the survey. For the Merritt-Hawkins survey, the authors emailed the survey to approximately 20,000 final-year residents through a third party. There were 391 responses received, which was a response rate of 2%. There was no identifying personal data on either survey that needed to be scrubbed prior to analysis.

Analysis and interpretation of the data has been presented in a narrative format for the study in the following sections. Additionally, the use of tables for visualization of the results were included in the research. The results of the study were measured to determine statistical significance based on the alpha value ($p < 0.05$). I have securely stored the secondary data in a password protected computer drive. This will be maintained for 5 years to protect the data contained in the files.

Threats to Validity

The data was obtained from secondary data sets collected by an independent research group as well as a professional society comprised of health care executives. The data was obtained from multiple locations throughout the United States. The questions included in the surveys could have limited the respondents' responses based on personal preference and experiences. Additionally, data from final-year medical residents could be skewed if they were considering different areas of practice. Data selected for the research are from 2019 which allows for consistency with the data analysis. Furthermore, I have worked to reduce threats to validity by ensuring the study will be succinct and deliberate in action.

Ethical Procedures

The data that was utilized in the study was completely removed of identities to protect the rights of participants prior to the researcher gaining access. Both the ACHE and Merritt-Hawkins had already eliminated personal information, so there were no risks for confidentiality or privacy infringements.

Summary

Section two provided information on the study population and the developed hypotheses utilizing secondary datasets. I included a purpose statement, research methods and design, population sampling, data collection, data analysis, and reliability and validity of the study project. The participants identifying information will remain confidential within the datasets by the conducting professional societies. The secondary data set will be kept on a password-protected thumb drive, and the information will be

kept for five years. Analyzing the relationship between lack of physician interest in rural U.S. practices and recruitment strategies was the purpose of this study.

Multiple regression was used to compare the variables. The dependent variable was physician recruitment statistics in rural hospitals and physician placement, whereas the independent variables include increased compensation, offering signing bonuses, and establishing residency programs within the hospital, geographic location, adequate personal time, lifestyle, financial package, engagement with recruiters, and educational loan forgiveness. Threats to validity included information prior to or after 2019 and improper collecting and reporting of data. Section 3 provides information about the results of the study, including tables to indicate findings related to the research questions.

Section 3: Presentation of the Results and Findings

Introduction

The purpose of this quantitative study was to examine if there is a lack of physician interest in recruitment correlated with current hiring strategies in rural health care organizations. The alternative hypotheses considered a correlation between hiring practices and physician recruitment in the United States. The dependent variable in this study was the lack of physician interest in recruitment with rural US health care organizations. Independent variables for the study examined hiring practices that included considerations of increased compensation, offering signing bonuses, and establishing a residency program within the organization. In this section, I will discuss the purpose of the study and describe the data collection methods and secondary data sets. I will also report on the results of the research and how it applies to the research questions.

The research questions and hypotheses were as follows:

RQ: Is there a correlation between the lack of physician recruitment and hiring practices in rural health care facilities?

$H_0$1: There is no statistically significant correlation between the lack physician recruitment and hiring practices in rural U.S. health care facilities.

H_a1: There is a statistically significant correlation between the lack of physician recruitment and hiring practices in rural U.S. health care facilities.

RQ: Is physician recruitment in rural U.S. health care facilities successful when considering physician requirements for relocation?

$H_0$2: There is no statistically significant association between physician placement in rural U.S. health care facilities and success when considering physician requirements for relocation.

H_a2: There is a statistically significant association between physician placement in rural U.S health care facilities and success when considering physician requirements for relocation.

Data Collection of Secondary Data Set

The ACHE survey included deidentified data from community-based hospital CEOs. There was no missing data in the survey to be reported. The data were entered into Microsoft Excel and converted into a compatible file within SPSS. The data were analyzed using SPSS Version 28. The data remained confidential since there was no identifying information from the respondents included in the surveys. The total number of respondents for the survey was 395.

The Merritt-Hawkins survey included data from final-year medical residents from 2019. There were no missing data in the survey to be reported. The data were entered into Microsoft Excel and converted into a compatible file within SPSS. The data was analyzed using SPSS Version 28. The data remained confidential since there was no identifying information from the respondents included in the surveys. The total number of respondents for the survey was 391. According to the sample size calculator, 385 respondents were required for this study.

Table 1 represents the CEO responses regarding top concerns for community-based hospitals when considering physician shortages. The data set included 241

responses for primary care shortages compared with 154 responses indicating that other areas within hospitals were experiencing personnel shortages, for a total of 395 responses.

Table 1

What Percent of CEOs Indicated a Shortage in Primary Care Physicians?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Primary care physicians	241	61.0	61.0	61.0
	Other personnel shortages	154	39.0	39.0	100.0
	Total	395	100.0	100.0	

Table 2 through Table 4 take into consideration the current recruitment practices within health care organizations. In Table 2, 45% of final-year medical residents indicated that they received more than 100 solicitations from recruiters, hospitals, and medical groups regarding job opportunities.

Table 2

How Many Times Have You Been Solicited About Medical Practice Job Opportunities by Recruiters, Hospitals, Medical Groups, or Others?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	0 to 10	31	7.9	7.9	7.9
	11 to 25	39	10.0	10.0	17.9
	26 to 50	63	16.1	16.1	34.0
	51 to 100	82	21.0	21.0	55.0
	over 100	176	45.0	45.0	100.0
	Total	391	100.0	100.0	

Table 3 indicates the level of contact from recruiters to final-year medical students regarding job opportunities. A total of 61.9% of survey respondents indicated that there was too much contact through solicitations during their final year of school.

Table 3

How Would You Consider Your Level of Contact from Recruiters During Residency?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Too much	242	61.9	61.9	61.9
	Just right	125	32.0	32.0	93.9
	Not enough	20	5.1	5.1	99.0
	Not contacted	4	1.0	1.0	100.0
	Total	391	100.0	100.0	

Table 4 indicates the timing when final year medical students began to seriously look at job opportunities and career options. A total of 49.1% of survey respondents indicated that they began the process around 1 year before the anticipated graduation.

Table 4

At What Point in Your Residency Did You Begin to Seriously Examine Practice Opportunities?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	6 months before completion	102	26.1	26.1	26.1
	1 year before completion	192	49.1	49.1	75.2
	Over 1 year before completion	97	24.8	24.8	100.0
	Total	391	100.0	100.0	

Table 5 through Table 10 focuses on what key physician requirements for relocation are important when considering a hiring strategy. Table 5 looks at the value in geographic location for relocation. The top scoring response indicated that location is very important to physicians.

Table 5

How Important is Geographical Location You as You Consider Practice Opportunities?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Very important	301	77.0	77.0	77.0
	Somewhat important	82	21.0	21.0	98.0
	Not important	8	2.0	2.0	100.0
	Total	391	100.0	100.0	

Table 6 analyzes the importance of medical facilities offering a good financial package. A total of 74.9% of the respondents indicated that this was a very important factor in considering a health care organization. Very often, physicians considering a practice opportunity will look for a breakdown of what the health care organization offers for themselves and their family. Financial packages may include a competitive salary, health insurance for themselves and their family, disability insurance, retirement savings, and competitive paid time off. Many health care organizations also include monetary amounts for physicians to attend continuing education courses and other medical conferences to increase knowledge in their specialty.

Table 6

How Important is a Good Financial Package as You Consider Practice Opportunities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	293	74.9	74.9	74.9
	Somewhat important	94	24.0	24.0	99.0
	Total	391	100.0	100.0	

Table 7 analyzes the importance of having adequate personal time. Like Table 6, this attribute is also heavily factored when physicians are considering where to begin their medical practice. Reasonable clinic and call schedules and opportunities for time off were indicated as very important to physicians when considering medical practices. Also having built in time allotted for continuing medical education and education opportunities would fall under this category.

Table 7

How Important is Adequate Personal Time as You Consider Practice Opportunities?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Very important	289	73.9	73.9	73.9
	Somewhat important	94	24.0	24.0	98.0
	Not important	8	2.0	2.0	100.0
	Total	391	100.0	100.0	

Table 8 considers the importance of lifestyle when last year medical students are considering medical practice opportunities. This looks at factors within the location including housing availability and commerce in the area. Additionally, schools and other family type opportunities may be considered depending on the physician. According to Merritt-Hawkins (2019), only 1% of residents who are U.S. medical school graduates would prefer to practice in a town of 25,000 people or less.

Table 8

How Important is Lifestyle as You Consider Practice Opportunities?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Very Important	278	71.1	71.1	71.1
	Somewhat Important	105	26.9	26.9	98.0
	Not Important	8	2.0	2.0	100.0
	Total	391	100.0	100.0	

Table 9 indicates responses for educational loan forgiveness for final year medical residents. According to Merritt-Hawkins (2019) about half of U.S. graduates (48%) said they carry $200,000 or more of educational debt when they graduate from medical school. And although that is a significant statistic, 47.3% of the survey respondents ranked educational loan forgiveness as not important, and 27.6% ranked it as only somewhat important. A while that is a lower indicated recruitment perk to the survey respondents, health care organizations may still choose to use that as a strategy in their recruitment process.

Table 9

How Important is Educational Loan Forgiveness as You Consider Practice Opportunities?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Very important	98	25.1	25.1	25.1
	Somewhat important	108	27.6	27.6	52.7
	Not important	185	47.3	47.3	100.0
	Total	391	100.0	100.0	

Table 10 analyzes responses to preferred types of compensation among final year medical residents. The responses clearly indicate that a salary with production option is the preferred option when considering job opportunities. Production is based on the amount of revenue incurred by the physician's services, which can be very motivating for ambitious physicians looking to increase their annual salary.

Table 10

Which of the Following Types of Compensation Would you Prefer at the Start of your First Professional Practice?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Salary w/ production	246	62.9	62.9	62.9
	Salary	121	30.9	30.9	93.9
	Income guarantee	24	6.1	6.1	100.0
	Total	391	100.0	100.0	

Table 11 considers final year medical resident preferences in specific population areas. The responses indicated that 20% of final year medical residents would choose to practice in population areas under 100,000. Populations of 250,001 to 1 million were indicated as the most popular for final year medical residents.

Table 11

Based on Population, in What Size Community Would You Most Like to Practice?

		Frequency	Percent	Valid percent	Cumulative percent
Valid	10,000 or less	8	2.0	2.0	2.0
	10,001 - 25,000	8	2.0	2.0	4.1
	25,001 - 50,000	20	5.1	5.1	9.2
	50,001 - 100,000	43	11.0	11.0	20.2
	100,001 - 250,000	78	19.9	19.9	40.2
	250,001 - 500,000	86	22.0	22.0	62.1
	500,001 - 1 million	86	22.0	22.0	84.1
	Over 1 million	62	15.9	15.9	100.0
	Total	391	100.0	100.0	

Results

I performed the data collection and organization and created a statistical data analysis with IBM SPSS for both research questions, including testing assumptions within the data. The presentation of the findings begins with an overview of the study analysis. The significant findings and conclusions for each research question then follow. Finally, I will discuss the relationship of findings to the literature, theoretical framework, and effective business practices.

Multiple Regression

Multiple regression is a form of simple linear regression. It is used to predict the value of a dependent variable based on the value of two or more other independent variables (Laerd Statistics, 2018). For both research questions, multiple regression was used to test for statistical significance. The alpha value is the level of confidence in the statistical test, which is indicated by the *p* value. The alpha level should be greater than 95% ($p < 0.05$) to reject the null hypothesis. If the data indicates a value greater than 5% error ($p > 0.05$), it will be rejected in favor of the null hypothesis with no statistical significance indicated (Frankfort-Nachmias & Guerrero, 2020).

Research Question 1

RQ: Is there a correlation between the lack of physician recruitment and hiring practices in rural health care facilities?

In Table 10, R has a value of .125. The R value, as referred to as the multiple correlation coefficient measures the strength of linear relationships in predictor relationships with ranges from -1 to +1. The closer to zero an *R* value indicates a lower level of prediction (Laerd Statistics, 2018). Looking at R^2, the value is .016. This indicates that the independent variables explain 1.6% of the variability of the dependent variable. The Durbin-Watson statistic reported was as 2.550. The Durbin-Watson statistic ranges from 0 to 4, where 2 represents no correlation between residuals. Table 12 indicates a value close to 2; therefore, it can be accepted that the errors were independent.

Table 12. *Model Summary*

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.125[a]	.016	.008	1.65221	.016	2.033	3	387	.109	2.550

a. Predictors: (Constant), Financial package, Type of compensation, Residency program opportunities
b. Dependent Variable: Physician placement

Table 13 shows the ANOVA test from SPSS. The *F*-ratio provides results on the overall regression testing for research question 1. From the data below we find that the independent variables do not statistically predict the dependent variable, $F(3, 387) = 2.033$, $p = 0.109$.

Table 13. *ANOVA*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.652	3	5.551	2.033	.109[b]
	Residual	1056.432	387	2.730		
	Total	1073.084	390			

a. Dependent Variable: Physician placement
b. Predictors: (Constant), Financial package, Type of compensation, Residency program opportunities

Table 14 provides the significance levels for the three independent variables tested against the dependent variable. A multiple regression test was performed to predict

physician placement from type of compensation, residency program opportunities, and financial packages. These variables statistically were predicted as physician placement, $F(3,387) = 2.033$, $p = 0.109$, $R^2 = .016$. All three independent variables were not statistically significantly to the prediction, $p < .05$.

Table 14. *Coefficients*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower	Upper
1	(Constant)	4.843	.159		30.382	<.001	4.529	5.156
	Type of compensation	.270	.138	.099	1.958	.051	-.001	.540
	Residency program opportunities	-.157	.118	-.067	-1.331	.184	-.388	.075
	Financial package	-.095	.182	-.026	-.520	.603	-.452	.263

a. Dependent Variable: Physician placement

Research Question 1 Outcome

Is there a correlation between the lack of physician recruitment and hiring practices in rural health care facilities?

As a result, the researcher supported the null hypothesis: $H_0$1- There is no statistically significant correlation between the lack physician recruitment and hiring practices in rural U.S. health care facilities.

Research Question 2

Is physician recruitment in rural U.S. health care facilities successful when considering physician requirements for relocation?

In Table 15, R has a value of .177. As stated previously, the closer to zero an *R* value indicates a lower level of prediction (Laerd Statistics, 2018). Looking at R^2, the value is .031. This indicates that the independent variables explain 3.1% of the variability of the dependent variable. The Durbin-Watson statistic reported was as 2.574. Table 15 indicates a value close to 2; therefore, it can be accepted that the errors were independent.

Table 15. *Model Summary*

Model Summary[b]

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.177[a]	.031	.016	1.64737	.031	2.066	6	383	.056	2.574

a. Predictors: (Constant), Loan forgiveness, Geographic location, Personal time, Recruiter engagement, Financial package, Lifestyle
b. Dependent Variable: Physician placement

Table 16 shows the ANOVA test from SPSS. The *F*-ratio provides results on the overall regression testing for research question 2. From the data below we find that the independent variables do not statistically predict the dependent variable, $F(6, 383) = 2.066$, $p = 0.056$.

Table 16. *ANOVA*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.643	6	5.607	2.066	.056[b]
	Residual	1039.393	383	2.714		
	Total	1073.036	389			

a. Dependent Variable: Physician placement
b. Predictors: (Constant), Loan forgiveness, Geographic location, Personal time, Recruiter engagement, Financial package, Lifestyle

Table 17 provides the significance levels for the six independent variables tested against the dependent variable. A multiple regression test was performed to predict physician placement from type of compensation, residency program opportunities, and financial packages. These variables statistically were predicted as physician placement, $F(6,383) = 2.066$, $p = 0.056$, $R^2 = .031$. Five out of the six independent variables were not statistically significantly to the prediction, $p < .05$. These independent variables were geographic location, personal time, financial package, recruiter engagement, and loan forgiveness. The independent variable labeled lifestyle indicated statistical significance with $p < 0.05$.

Table 17. *Coefficients*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	4.865	.248		19.597	<.001	4.377	5.353
	Geographic location	-.287	.176	-.083	-1.630	.104	-.632	.059
	Personal time	.041	.171	.012	.243	.808	-.294	.377
	Lifestyle	-.346	.168	-.106	-2.063	.040	-.676	-.016
	Financial package	-.095	.182	-.026	-.519	.604	-.453	.264
	Recruiter engagement	.087	.065	.068	1.341	.181	-.040	.214
	Loan forgiveness	-.093	.065	-.072	-1.433	.153	-.220	.035

a. Dependent Variable: Physician placement

Research Question 2 Outcome

RQ2 – Is physician recruitment in rural U.S. health care facilities successful when considering physician requirements for relocation?

As a result, the researcher supported the null hypothesis: $H_0 2$ – There is no statistically significant association between physician placement in rural U.S. health care facilities and success when considering physician requirements for relocation.

Summary

In section 3, the researcher discussed the review of data collection, descriptive statistics, results, and findings of the study. Three research questions were established and analyzed to test for association. The model summary, ANOVA, and coefficients were analyzed to determine statistical significance. For research question 1, the study examined the correlation between lack of physician recruitment and hiring practices. The results revealed no statistical significance for association between the variables, indicating rejection of the alternative hypothesis for the null hypothesis. When examining research question 2, there was no statistical significance in comparing physician placement to relocation requirements, indicating rejection of the alternative hypothesis for the null hypothesis. Section four provides interpretation of the findings, limitations of the study, recommendations for future research, and implications for social change.

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

Introduction

The purpose of this research was to determine whether there was a significant correlation between lack of physician recruitment statistics and requirements for physician relocation. I researcher used secondary data sets from both the ACHE as well as Merritt-Hawkins to compare data between hospital CEOs and final year medical residents preparing to begin their first medical practice. Multiple regression testing was used to determine correlations between the dependent and independent variables for both research questions.

Interpretation of the Findings

Research Question 1 Analysis

The dependent variable was lack of physician recruitment statistics, and the independent variables were increased compensation, sign on bonuses, and residency programs. Secondary data were analyzed from the Merritt-Hawkins 2019 survey of final year medical residents and CEO reports from the ACHE. The total number of respondents was 391, with no missing information reported. The confidence level was 95%. The results of the SPSS analysis indicated that there was no statistical significance, with $p = .109$. The Durbin-Watson score was 2.550. When analyzing the independent variables and the levels of significance individually, types of compensation was $p = .051$, residency program opportunities was $p = .184$, and financial package was $p = .603$. The overall regression was not statistically significant with results shown as $F(3,387) = 2.033$, $p = 0.109$, $R^2 = .016$.

Research Question 2

The dependent variable was physician placement statistics, and the independent variables were geographic location, personal time, lifestyle, financial package, engagement with recruiters, and loan forgiveness. Secondary data were analyzed from the Merritt-Hawkins 2019 survey of final year medical residents and CEO reports from the ACHE. The total number of respondents was 391, with no missing information reported. The confidence level was 95%. The results of the SPSS analysis indicated that there was no statistical significance, with $p = .056$. The Durbin-Watson score was 2.574. When analyzing the independent variables and the levels of significance individually, geographic location was $p = .104$, personal time was $p = .808$, lifestyle was $p = .040$, financial package was $p = .604$, engagement with recruiters was $p = .181$, and loan forgiveness was $p = .153$. The overall regression was not statistically significant with results shown as $F(6,383) = 2.066$, $p = 0.056$, $R^2 = .031$. However, it is important to note that lifestyle was found to be statistically significant at $p = .040$.

Theoretical Framework

The theory that grounds this study is Lewin's (1947) three step model of change which focuses on identifying a process that is not effective, changing that process, and then implementing a new process to improve the issue. Lewin's field theory was developed for social and organizational change in the 1940's (Burnes, 2020). This theory supports the study because it looks at the standard current practice of physician recruitment, identifies improvements that may increase physician interest, and then develops the new improvements into a process that can be implemented by health care

organizations. When reviewing the study variables, the dependent variable of lack of interest from physicians in rural recruitment was analyzed to understand the current standard. Then, the independent variables were analyzed to determine if there are ways to increase interest. Once analyzed, research can be developed to create new processes for the recruitment of physicians. The goal for this research was to identify new ways to create interest in careers for physicians in rural and underserved locations because current health care organizational policies and practices are failing to create interest in physician careers. By using Lewin's three step model of change, new hiring strategies can be developed and implemented, along with the understanding of the implications for social change.

Limitations of the Study

The limitations of the study outline areas of opportunity for future research. I conducted this quantitative research study using secondary data. The sources of the data included a 2019 Merritt-Hawkins survey providing data from final year medical residents preparing to establish a medical practice. A 2019 CEO survey from the ACHE provided data regarding top issues confronting CEOs in rural hospitals. Limited research exists on reasons for rural healthcare organizations and their ongoing struggles to recruit physicians to their practices.

Recommendations

To address the gap between recruitment planning and hiring strategies, hospital administration teams may consider gaining further knowledge in recruitment processes in areas that physicians value when they consider relocating for medical practice

opportunities. I collected, analyzed, and interpreted data regarding current physician recruitment practices based on feedback from CEOs and medical students. However, this study found that there continues to be limited research on effective methods for recruitment.

The results of this study revealed the ongoing need to reduce the gap in knowledge of updated recruitment practices in rural US health care organizations. Suggestions for further research include:

1. Determine how hospital administration and HR can work together to create a more robust recruitment strategy.
2. Determine how hospital board members can take a larger role in physician recruitment planning.
3. Research issues that decrease physician satisfaction in medical practices located in rural locations.
4. Research issues contributing to medical staff concerns and the effect it has on organizational performance.
5. Study marketing opportunities that could be tailored to change the visual process of physician recruitment.
6. Study current medical school programs that offer rural medical rotations and gain a better understanding of the requirements medical students are looking for in a practice. Additionally, a researcher could examine what requirements, if any, are in place for accepting premed students from colleges in rural locations. Rural

track health care programs are limited currently, which may create an impact on student recruitment.

Implications for Social Change

This study aimed to demonstrate if there was a correlation between the lack of physician recruitment success rates compared with recruitment practices in rural health care organizations. There was no statistical significance found in research questions that were analyzed, which indicates that more research could benefit health care organizations facing physician shortages.

Professional Practice

According to Pavlick (2019), 20% of Americans are in rural locations in the United States., but only a fraction of primary care physicians practice in those same areas. Zhang et al. (2020) found that with current projections in the United States based on available literature, physician shortages will most likely impact the county through the year 2030. The ongoing physician shortages create major implications for health care organizations across the United States. Population health outcomes are directly impacted by areas that struggle to retain physicians. If access to care is limited, the overall mortality rate goes up in the region due to lack of readily available healthcare.

Findings from the current study found that a significant percentage of final year medical students would rather practice medicine in populations that range from 250,000 up to 1 million and greater. Larger urban health care organizations can offer more robust recruitment packages that appeal to more physicians. Additionally, the study found that requirements for physicians to relocate to medical practices needed to consider multiple

values to better appeal as a desirable location. Findings from the current study may also help health care organizations identify new areas of perceived value in physician recruitment that had not previously been recognized.

Social Change

Rural U.S. health care organizations continue to experience ongoing physician shortages within all areas of the medical field. Additionally, the United States population of individuals 65 years and older not only impacts patients, but also a population of physicians still in practice. This age group will use more health care resources, and with the current physician shortage, the increased patient needs will increasingly impact healthcare resources across the country.

Rural locations across the United States are also impacted negatively due to physician shortages. According to Shipman et al. (2019), there has been a 15-year decline with incoming medical student graduates going into rural health care practices. Renjel et al. (2019) wrote that several efforts have been investigated to determine ways to increase physician numbers in rural areas. Health care organizations have attempted to draw interest through financial incentives, loan repayment considerations, and additional investments in the facility and the community. Additionally, these facilities have also considered increasing rural physician training as well as working to recruit physicians that have a rural background (Renjel et al., 2019).

Even though there had been changes made by hiring organizations to create more robust compensation packages, the study failed to show a correlation in values such as geographic location, financial packages, and student loan forgiveness.

One variable that did show a correlation was lifestyle factors. In terms of social change, lifestyle can play a major part in this value. Creating an environment for physicians that is rewarding may create a much stronger organizational culture within a healthcare organization. Involvement of physicians within their communities strengthens the bond between patients, and that can directly impact the population health outcomes for a location. Social change in the mindset of health care is something that is not improved overnight, but rather over time. Health care organizations considering physician recruitment should be looking to plan much further beyond the standard 3- and 5-year strategic plans to make the greatest impact to social change.

Conclusion

This study addressed the concerns revolving around the lack of physician recruitment standards in which a research gap existed. Physician shortages have been studied widely, but lack of physician recruitment in rural U.S. locations has been limited. Because of the limited research available, I decided to see if there was a relationship between the lack of physician interest in rural U.S. practices and the recruitment strategies currently being used today. The results of the study found no statistical significance between the lack of physician recruitment when compared with increased compensation, sign on bonuses, and rural residency programs. Additionally, there was no statistical significance found with physician placement rates when compared with geographic location, personal time, lifestyle, financial package, engagement with recruiters, and loan forgiveness. After reviewing the individual regression results, I found that there was a statistical significance found between physician placements rates and

lifestyle. The result in this test indicates that more research could be conducted to further investigate what components of lifestyle are of value to physicians and how a recruitment program could be developed to better suit the requirements of incoming physicians.

Increasing positive physician recruitment practices can improve the organizational processes within a health care organization and create a positive social change that would directly impact the patient population within a community. As noted in the research, lifestyle values were viewed as very important to final year medical students looking for a location to begin their medical practice. Key considerations may be community amenities such as schools and commerce or outdoor recreational opportunities. Creating an environment that taps into the community's top features may create a desirable location that welcomes new physicians. And because each physician will have different values, it is essential for a rural location to promote the community itself beyond the health care organization. Successful recruitment based on these values can in turn reduce the future turnover of medical staff later, increasing the overall retention rates within the health care organization.

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