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Walden University

College of Management and Human Potential

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Issam Harmouch

has been found to be complete and satisfactory in all respects,
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Walden University
2023

Abstract

Practice Size and Geographical Location and Annual Merit-Based Incentive Payment System Scores in Dermatology

by

Issam Hussein Harmouch

MHA, Walden University, 2018

MD, Atlantic University School of Medicine, 2016

BS, The University of Texas at Arlington, 2011

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Healthcare Administration

Walden University

May 2023

Abstract

Despite the transition to value-based care in the healthcare industry using the Merit-Based Incentive Payment Systems (MIPS), small and rural physician practices still score in the poor category annually. These poor performances negatively impact funding for staffing and service availability; further, little research has focused on the factors behind these poor performance scores. The purpose of this study was to examine the relationship between practice size and organization geographical location on annual MIPS scores among dermatologists in the South-Central United States. The Donabedian model was used as the theoretical framework for this study that focused on the three qualities of care: structure, process, and outcome. The research design included an independent samples *t* test, which evaluated the relationship between the variables. The findings of the parametric test demonstrated statistical significance (*p*-value <.001) for practice size. Geographical location was not statistically significant (*p*-value 0.23). Further analysis was conducted using the same parametric test for the South-Central United States and the relationship of the variables. Practice size in the region demonstrated statistical significance (*p*-value <.001) while geographical location in the region was not statistically significant. Texas was the only state to be significant within the region (*p*-value <.001). The most important implication of this study's findings for positive social change could be the direct support healthcare administrators will have to actively improve their organization's MIPS scores and the potential incentives and additional funding they may receive by CMS.

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Dedication

My dissertation is dedicated to my wonderful parents who instilled in me a desire to learn at a young age. Thank you, Mom and Dad, for your support, love, encouragement, and sacrifices. To my beloved wife, Reem, thank you for your constant support and encouragement. This dissertation would not have been possible without you all. To my future children, I hope this doctoral study proves that anything is possible with hard work and dedication.

Acknowledgments

I would like to thank two important groups of people, without whom this doctorate would not have been possible: my committee and the executive management team at my job.

I would like to first thank the members of my doctoral committee, not only for their time and patience but for their intellectual contributions to my development as a healthcare scholar. To my committee chairperson, Dr. Nicole McGuire, and my second committee member, Dr. Miriam Ross, thank you for being supportive and being a strong guiding force.

Finally, I want to thank the executive management team at my job, Daniel Salvato, Chief Executive Officer, and Sylvia Benitez, Human Resource Director. Thank you for mentoring and coaching me professionally and for positioning me to be responsible for the organization's quality measures. Without that, this research would not have been possible.

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Section 1: Foundation of the Study and Literature Review

Introduction

The healthcare field is evolving every year with new updates. The most recent update was the Affordable Care Act, which was signed into effect in 2010 by President Barack Obama. This transitioned healthcare from a volume-based approach to a more value-based approach. With these changes came different types of quality payments that healthcare organizations and clinicians needed to abide by. One of these quality components is the Merit-Based Incentive Payment System (MIPS). MIPS scores are calculated annually and contain four categories: quality, cost, promoting interoperability, and improvement activities. A minimum passing score of 70 by the Centers for Medicare and Medicaid Services (CMS) signifies that an organization or physician did not get penalized and received an incentive from the governmental organization. Challenges in incentivization occur in smaller practice sizes and rural practices more often than medium, large, and urban practices as these types of practices are not able to meet the minimum 70% passing score. In this study, I focused on determining if there was a correlation between practice size and geographical location on annual MIPS scores in dermatology. This study was needed because administrators in smaller practices and rural locations experience challenges with supporting staff and technology. In a recent article, it was found that orthopedic surgeons who practiced in smaller clinics and treated complex patients were at an increased risk of receiving penalties while also having a lower chance of receiving a perfect score (Cwalina et al., 2022). The positive social change that attributed to this topic are the strategies for healthcare administrators to increase funding that supports staff and technology. Providing healthcare administrators with the funding to actively improve MIPS scores may lead to incentives and additional funds by CMS to support these smaller practices and those in rural locations.

Background

The research literature on this study topic includes articles that provide how smaller practices and rural practices both suffer from lower MIPS scores because of several contributing factors. An important factor is having a certified electronic medical record capable of providing a real-time scoreboard of MIPS progress and a MIPS advisor to monitor adherence to MIPS reporting and guidelines (Modernizing Medicine, 2022). The other factor is employing skilled staff to facilitate MIPS reporting. Employing staff with at least 1 year of clinical experience, leadership skills, and completion of MIPS training within the organization is ideal. A lack of advanced electronic health record (EHR) reporting software and skilled staff may result in poor finances (Khullar et al., 2021. The gap in knowledge for this study was determined after reviewing literature regarding the topic and by analyzing public CMS data. There is very little literature on the correlation between practice size and geographical location on annual MIPS score performance among dermatologists in the South-Central United States. Understanding the correlation between practice size and geographical location on annual MIPS scores could help to identify why small and rural practices tend to receive poor MIPS performance scores.

The study was needed to help healthcare administrators find strategies to increase funding to support staff and technology. This study helps fill in the gap of knowledge and provides scientific literature and statistics that can assist healthcare administrators to be better equipped to handle MIPS performance in smaller and rural practices. CMS provides support for small and rural clinics because of the hardships that they might face. Special allowances are provided annually by CMS that reduce the burden on small practices, such as adding 5 points to the MIPS final score. Also, rural clinics can be exempt from MIPS reporting if they are part of rural organizations such as the Rural Health Clinic (Quality Payment Program [QPP], n.d.c.). According to CMS, smaller practices may face reporting challenges outside of their control, such as the use of a noncertified EHR. A couple of these specified reasons in 2018 included physicians in small practices and physicians who were using a decertified EHR technology. As a result, in 2018, practices that reported a hardship within the promoting interoperability category of MIPS automatically had their score recalculated and possibly reallocated to the quality performance category (QPP, n.d.b.). By providing this assistance to healthcare administrators, they will be able to actively improve MIPS scores, which can lead to incentives and additional funding by CMS to support smaller practices, thereby leading to positive social change.

Problem Statement

The research problem for this study is the poor performance in the MIPS quality category that negatively impacts funding for staffing and service availability. A recent study of anesthesiologists during the 2017-2018 MIPS performance years showed that when reporting for larger practice sizes or groups, there was an increase in percentage of the organization receiving an incentive payment from CMS (Gal et al., 2021). The opposite was true for smaller practices where physicians debated to sell their practice or to onboard with a larger organization as a result of the penalties received (Gal et al., 2021). The Medicare Access and CHIP Reauthorization Act (MACRA) implemented a program for the first 5 years of the QPP, MIPS, where $20 million was allocated per year from 2016 to 2020 to assist small and rural practices (Joszt, 2017). The funds were meant to assist practices to conduct training and MACRA education. The goal was to prepare practices for the new payment system. The improvement activity category in MIPS for small practices had decreased requirements when submitting organization scores annually (Barbieri et al., 2017). This shows that the federal government supported those in small and rural practices to edge them in the right direction for MIPS. Current practice-based research has suggested that it costs $12,811 per physician to report on MIPS because of the low-performance scores associated with small, rural, and independent practices (Khullar et al., 2021).

Purpose of the Study

The purpose of this quantitative study was to examine the statistical significance between practice size and organization geographical location and low MIPS scores among dermatologists in the South-Central United States. Administrators in smaller practice sizes and rural locations experience challenges in financially supporting staff and technology. In this study, I examined the relationship between practice size and organization geographical location and low MIPS scores among dermatologists in the South-Central United States as a quantitative study. The independent variables of the study included practice size and the geographical location of an organization while the dependent variable contained 2018 annual MIPS scores.

Research Questions and Hypotheses

This study contained the following research questions and hypotheses:

Research question (RQ)1: Is there a statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States?

$H_0$1: There is no statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States.

H_a1: There is a statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States.

RQ2: Is there a statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States?

$H_0$2: There is no statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States.

H_a2: There is a statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States.

Theoretical Framework

The theoretical framework for this study was Donabedian's model of 1966. Donabedian (2005) indicated that the various elements of care and the values that they represent provide for the criteria and standards used to assess care. Seven elements of quality of medical care in Donabedian's model includes optimal conditions, intervention outcomes, decrease in cost, fairness, balancing cost and benefits, accessibility, and social acceptability (as cited in Ameh et al., 2017). Donabedian (1966) found that the three qualities of care, structure, process, and outcome, all have a direct effect on one another. Structure measures influence processes, and the outcome quality is influenced by this. The framework is important in this study as it provided a foundation to view the current MIPS reporting model as the standard used to assess the care provided based on the three qualities of care: structure, process, and outcome. An example is a healthcare organization purchasing an EHR where smaller practice sizes and rural organizations can improve the quality of health information of their patients. This not only leads to an increase in incentives and reimbursements from CMS but also leads to improved quality of life for all patients.

Context

The traditional payment system for reimbursing physicians before a value-based approach took place was a fee-for-service approach that entailed physicians providing care and being paid in entirety for that service. The driving force for physicians was providing volume over value that resulted in larger monetary funds being produced. In 2015, MACRA was introduced and shifted the healthcare industry from volume to value-based care. In 2017, MIPS was introduced, and physicians had to start abiding by performance-based payment where reporting would be on the quality-of-care patients received, the value-based approach with payment adjustments, and administrative data per year. The four categories for MIPS are quality, cost, promoting interoperability, and improvement activities.

Interventions

The creation of innovative systems with MIPS was necessary to provide quality care to patients. The MIPS response interventions implemented in 2017 are described in the Donabedian model that categorizes structure, process, or outcome as a quality of care. These interventions included quality, cost, promoting interoperability, and improvement activities.

Study of the Interventions

The Donabedian model was used to conceptualize, plan, and evaluate the MIPS interventions. This study focused on the 2018 MIPS scores to investigate the relationship between practice size and geographical location on the annual MIPS scores.

Nature of the Study

In this study, I investigated the relationship between practice size and geographical location on annual MIPS scores. The quantitative study included a multiple linear regression model as the research design from public data provided by CMS. The variables for the study included two independent variables, practice size and geographical location, and one dependent variable, annual MIPS scores. The secondary data were obtained from the CMS website under Quality Payment Program Experience. The 2018 MIPS public reporting scores from the CMS website were used.

Literature Search Strategy

The following databases were used for this study through the Walden University library: EBSCO, PubMed, and Elsevier. Google and Google Scholar were also used as databases. The search terms consisted of different terms that were searched together with a total of four searches. The first was *Merit Incentive Payment System*. The second was *Merit Incentive Payment System* and *practice size*. The third was *Merit Incentive Payment System* and *dermatology*. The last search was *Merit Incentive Payment System*, *practice size*, and *rural*. These literature searches were conducted as exclusively peer-reviewed articles over a period of 5 years, spanning from 2017 to 2022.

Literature Review Related to Key Variables and Concepts

Practice Size

In this study, I compared different practice sizes and specialties. It is important to identify the relationship that exists between smaller practice sizes and annual MIPS scores. These practices continue to receive penalties from CMS for their inability to achieve passing scores annually in MIPS. Investigating medium and large practice sizes of different specialties and the types of resources and finances available to facilitate MIPS achievement can assist healthcare administrators in being better equipped with resources that include technology, an EHR system, and funding for ideal employees to improve their practice's overall MIPS performance scores.

Orthopedic surgeons is one specialty that has difficulties achieving CMS incentives. Physicians who report as individuals for annual MIPS or in a small practice were more likely to receive penalties and less likely to receive a 100% score per year. Being a smaller practice has a direct impact on MIPS scores. These surgeons had lower scores and had higher penalties in smaller practices if they cared for complex patients (Cwalina et al., 2022). Those physicians who practice as individuals or in a small group may have a better chance of surviving by forming partnerships with larger hospital practices. This helps to focus on the MIPS criteria needed to not be penalized. Having the ancillary staff support for quality reporting frees up administration and allows for everyone's focus to be on providing the best quality of care to patients (Cwalina et al., 2022).

Anesthesia was another specialty where a study involving MIPS was conducted. The study included 2017 and 2018 anesthesia physician MIPS performance and how reporting through a larger group practice size would have an increased percentage of the organization receiving a bonus payment (Gal et al., 2021). The conclusion was that larger practice sizes were more efficient in MIPS scores than smaller practices. This was observed as physicians would sell their small practice to a larger organization or the physician would join an organization that would have the infrastructure to handle MIPS (Gal et al., 2021). Among the 20,490 physicians who reported both in 2017 and 2018 in the study, 10,559 (51.3%) received a better score than the first year of MIPS implementation while 347 (1.7%) decided to report as a group instead of individually (Gal et al., 2021, p. 1). Physicians in a group of less than 15 and those who treat lower-class patients could end up on the lower spectrum for annual MIPS performance. Continued research has revealed that large healthcare systems and groups have the required administrative infrastructure to collect and submit MIPS data.

In another study, primary care physicians (PCPs) recommended changes in order to improve the MIPS program. These changes were part of their own suggestions that were observed in their respective clinics. Among the 20 PCPs who joined this study, 13 PCPs were familiar with MIPS and seven PCPs stated that they worked in small practices

(Berdahl et al., 2019). The advantages and disadvantages of MIPS were found in the study. In order to provide the correct measurements and needed improvements and enhancements to healthcare, the advantage to MIPS is having the correct practice infrastructure that included technology, an electronic medical record system, and the resources needed for staff. The disadvantages included the administrative burden and smaller practices feeling overwhelmed by complying with MIPS. Stakeholders have forecasted the need for structural changes to organizations because of MIPS. Small practices tend to join larger practices that could discharge the quality reporting burden (Berdahl et al., 2019). The fear of PCPs is that small and rural practices will continue to receive low performance scores in MIPS and that physician satisfaction will continue to decrease. This results in practice consolidation that increases because of the restructuring of the American healthcare system, which moves away from pay-for-performance and moves toward the QPP, MIPS.

Continuing with practice sizes, Kullar et al. (2021) studied the amount of time and financial cost for small, medium, and large physician practices that reported MIPS annually. The financial cost of reporting MIPS per year was significant and was estimated to cost $12,811 for the mean-per-physician cost (Khullar et al., 2021, p. 4). The researchers found that small practices and primary care practices were paying more to participate in MIPS compared to larger practices while there was also a disproportionately negative association with small, rural, or independent practices (Khullar et al., 2021). Furthermore, small primary care practices were spending $18,466 per physician, which was the highest amount of money spent on qualifying for incentives from CMS. Another figure of numbers is the amount of time physicians spent per year on MIPS activities. These numbers consist of 201.7 hours annually that physicians, clinical employees, and administrators spent on the 2019 MIPS program, while the nurses and medical assistants spent 99.2 hours on each physician annually in support participation (Khullar et al., 2021, p. 6). This leads to the increase in financial support needed and the administrative burden that can result because of physicians and their staff devoting excessive time attempting to pass MIPS annually. Khullar et al. identified the social problem that administrators in smaller practice sizes and rural locations experience challenges in financially supporting staff and technology.

Otolaryngologists were part of a study focusing on the resources of this specialty to have full implementation of MIPS. Rathi et al. (2018) found that the cost of resources increases as there was an increase from 10% in 2018 to 30% in 2019 regarding improvement activities. These physicians have continued complex cases that they endure, which prove that quality measures and metrics will be challenging to select. The American Academy of Otolaryngology-Head and Neck Surgery were able to decrease the overall weight of MIPS reporting for all otolaryngologists as they sought after CMS to change the requirements. The only physicians within that specialty who were excluded were physicians who saw a low volume of patients, and small practices who cared for complex patients that were provided bonuses (Rathi et al., 2018). The challenges that were endured by otolaryngologists, practice size, setting, and informational capabilities, poses a threat to adapting to the MIPS payment reform. Roughly half of these specialists work solo or in a group practice and may not have the financial infrastructure for negative adjustments that are necessary for compliance. Again, MIPS compliance requires changes for solo practitioners and small practices.

Rural/Urban Areas

The performance of nephrologists in the 2018 MIPS performance year was based on the predictors of participation type and the size of their practice, the location, and geography. Practices in locations that were defined as rural, health professional shortage areas (HPSA) and hospital-based settings observed lower performance scores on MIPS before final scores were analyzed (Tummalapalli et al., 2021). Hence, the exact opposite resulted in greater MIPS scores for this specialty in 2018: participating in the alternative payment model, practices with greater than 15 physicians, non-HPSA settings, and nonhospital-based settings. Tummalapalli et al. (2021) proposed recommendations that included financial penalties depending on practice location as well as incentivizing low performing practices in the quality category that would improve performance scores.

Continuing with the challenges of rural practice settings, some financial challenges arose with the implementation of MIPS that affected rural dermatology care. Barbieri et al. (2017) researched the implications MIPS has on dermatologists and what the results are for physicians after the year of implementation. The findings verified that MACRA set aside $20 million per year from 2016 to 2020 that would help small and rural practices. Practices with fewer than 15 physicians have decreased requirements when reporting on the improvement activity category (Barbieri et al., 2017). An additional challenge is organizations identifying the most relevant MIPS measures and needing to report on those measures. Having the capability to report on improvement activities results in a positive reimbursement year or a negative one.

Another study revealed multiple challenges that practice administrators came across. Khullar et al. (2021) gathered several administrator perceptions of the quality program and how practice size and practice setting impacted annual MIPS incentives. The most impactful reasons included measures that did not closely resemble with the specialty, a significant amount of pressure on administrators when reporting, several changes to the quality program during the year, and small incentives. Also, questions were raised as to whether the MIPS program improved patient quality of care. The researchers attempted to fill the gap between the relationship between practice size, geographical location, and annual MIPS scores. Khullar et al. found that 46.7% of practices reported through the MIPS quality program. A few themes emerged from this study that focused on including and improving a value-based approach to patient care through primary practices but also that MIPS is complex for administrators, which favors small incentives and external support. Two of the themes are important for this study: MIPS quality measures are more important to PCPs than specialists, and MIPS creates a significant amount of pressure on administrators during the year that is a result of continuous additions and removal of certain program measures and standards during any MIPS performance year. Khullar et al. (2021) established that primary physicians experience an increase in relevance to reporting on MIPS than specialty practices. Several administrators voiced their concerns that the main reason for their practices to be a part of MIPS was primarily to prevent their organization from being penalized by CMS.

Other administrators have stated that the payments by CMS are not equivalent with the energy to report on the measures. A survey conducted by the American College of Physicians observed that participants favored MIPS as it would improve patient quality of care but also did not have much familiarity with the program (as cited in Khullar et al., 2021). This verifies the administrative burden and the increase in financial investments to receive a passing grade annually.

PCPs improve health results and reduce health bias for populations who experience discrimination and various barriers to their health. Individuals in this type of population have several burdens to accessing healthcare. These burdens include physical and geographical, affordability, and receptiveness from their clinician (Eggleton et al., 2017). Eggleton et al. (2017) studied a coding matrix that allowed researchers to incorporate quality into healthcare by using the three qualities of care by Donabedian. There were two levels of codes that showed quality dimensions and 12 domains in healthcare. The researchers discovered that 143 of 270 measures were related specifically to PCPs. Five domains did not contain the appropriate quality measures, while primary care only contained 10% of the quality measures in another five domains. Within the structure dimension under the geographical and physical access domain, Eggleton et al. reported that geographical barriers such as rural areas faced issues in getting health services. This article addressed the theoretical framework of Donabedian (structure, process, and outcome) while providing evidence that rural barriers to health care are implicated, especially with MIPS performance scores.

Practice Infrastructure

MIPS has resulted in many healthcare administrators strategizing to achieve success or incentives to not be penalized by CMS under this value-based payment system. Kauffman et al. (2020) researched larger organizations implementing operational changes at a higher pace than other organizations due to capital investments, thereby creating financial leverage and progressive organizational structure. Kauffman et al. focused on how health information technology directly impacts an organization's MIPS scores based on the organization's size. Larger organizations have strong financial incentives to maximize their MIPS performance while smaller organizations were incentivized to not comply with MIPS measures. Kauffman et al. attempted to identify how to maximize performance in MIPS. In 2022, the previous national average performance scores in MIPS allowed for the threshold to be raised by CMS. Organizations with more than 15 physicians have the capital needed to be successful in MIPS while smaller organizations cannot keep up with capital expenditures, which leads to negative payment adjustments over time being paid to those larger healthcare systems. What the future holds for physician groups might change necessitating restriction or closure of physician groups because of becoming increasingly dependent on Medicare reimbursement because of the rise in the population ages (Kauffman et al., 2020., p. 8).

During the 2019 MIPS reporting year, high risk cases received 13.4 points lower than the lowest risk cases (Johnston et al., 2020). Johnston et al. (2020) discovered that higher socially at-risk Medicare patients were compared to lower socially at-risk Medicare patients. They further researched how those clinicians fared in their annual

MIPS performance scores. Johnston et al. found that higher socially at-risk Medicare beneficiaries performed worse in the 2019 MIPS and received unfavorable value-based reimbursement relative to their peers who had a low percentage of those beneficiaries. High risk practices tend to lack resources in technology and infrastructure compared to low risk practices (Johnston et al., 2020). The lack of these resources in high-risk practices had poor performance when attempting to meet the value-based payment reporting requirements. This study revealed the disparities between physicians with high-level Medicare beneficiaries and lower MIPS performance scores because of the technology dependency that is needed. Clinics that do not have the resources do not have the financial aptitude to hire employees who are familiar with electronic data upload processes (Johnston et al., 2020).

Psychiatrists have compared their MIPS performance scores and reimbursement with other specialty physicians in the 2020 MIPS performance year. According to Qi et al. (2022), these psychiatrists received poor quality measure scores in 2020 due to poor documentation of continuation of care coordination for their patients, which was attributed to a lack of utilization of technology. This validated why psychiatrists performed poorly on MIPS, resulting in penalization from CMS and thereby decreasing their bonuses, which was fewer than any other specialists. The issue of treating higher caseloads is another example of why physicians receive lower scores because of a lack of technology to promote interoperability. Psychiatrists face a greater challenge because of this. Physicians who accept Medicare and who have higher caseloads of patients have been statistically proven to perform worse on the MIPS program (Qi et al., 2022). Again, there are disparities most often with poor results in the quality and promoting interoperability categories of MIPS. This continues to relay that technology is an issue as well as having the right staff address the quality portion of MIPS.

Next, Apathy and Everson (2020) attempted to define payment adjustments and their scores for physicians who passed MIPS during the first year of implementation. Several physicians have emphasized the significance in pressure in participating in the quality program that included administrative costs of reporting and the potential inequities of quality measures. The researchers suggested that because of the limited incentives clinicians are receiving, the future of MIPS is stalled (Apathy & Everson, 2020). The results of the study showed only 20.8% of clinicians who reported in 2017 received a composite score of 100 because they participated in all three categories in 2017: quality, improvement, and advancing care information where they received an exemption. The advancing care information category is involved in the technological advancements for practices to succeed in MIPS. These practices were exempt; they were not able to successfully strategize their practice for MIPS success. Advancing care information was the most skipped category in MIPS. This created a large barrier for physicians participating in the program as it required physician information technology systems being costly to improve (Apathy & Everson, 2020).

Colla et. al. (2020) researched how MIPS directly affects physicians who care for dually eligible patients, such as those who have several complex, costly activities to improve their health. With dually eligible patients, there are several barriers to overcome. The article discusses how pay-for-performance might encourage physicians and organizations to provide more attention to patient care but does not improve patient outcomes and causes future consequences. Colla et. al. (2020) found that CMS penalizes small practices with disadvantaged populations, such as dually eligible patients while providing incentives to well off healthcare organizations. Healthcare organizations with greater than 15 physicians tend to have better cost advantages than organizations with fewer than 15 physicians. This allows for these types of organizations to invest in better technology that eases the metrics for pay-for-performance (Colla et al., 2020). Since financial challenges exist with smaller practices and physicians who care for complex patients, having a health system affiliation is important. This is also associated with higher MIPS performance scores than those health systems that do not have affiliations.

Definitions

Annual MIPS scores: This is the yearly score produced by a single clinician or group for the performance period that authenticates the payments applied to every Medicare Part B clinician or group that participated. Four categories comprise the entire score which is broken down into percentages that affect the entire score. The categories and percentages for the year 2018 are quality (50%), cost (10%), improvement activities (15%), and promoting interoperability (25%; QPP, n.d.a.).

Geographical location: This is the physical place and conceptualization of the role of place, location, and geography in health. In the United States, geographical location represents both Urban and Rural areas. According to the U.S. Bureau of the Census and the U.S. Office of Management and Budget, urban areas have complex qualities that take into consideration the economy of the area that includes the nature of a place, its transportation, and the population of individuals living in a fixed area. They have a high population density. Rural areas are outside of urban areas and have a low population density (Dumas, 2021, p. 10238).

Practice size: According to the Quality Payment Program Experience Report Data Dictionary, practice size is the count of clinicians that are linked with a taxpayer identification number (TIN) based on the last determination period. The size ranges from small, medium, to large (CMS Data, n.d.).

Assumptions

This study contains assumptions. First, individual clinicians or groups not reporting their annual MIPS scores for the year 2018. This does not hold a bias to the study as there are a high number of clinicians and/or groups reporting their scores. Also, the 2018 MIPS performance year is only the second year of the quality reporting payment model. Healthcare organizations need to understand and adequately prepare for further changes as the long-term goal of CMS will be to move all physicians to the alternative payment model where reimbursement depends completely on the quality of care and cost-efficiency. The hardships explained earlier are not a permanent means to successfully passing MIPS every year. This is why healthcare administrators need to actively prepare for these changes using this research.

Scope and Delimitations

The dataset was obtained from the CMS website for CMS Provider Characteristics and Initiatives under the QPP Experience of 2018. The delimitations of this study include an annual dataset of the year 2018 that provides participation and performance information in the MIPS performance year which covers the entire basis of eligibility and participation, all four MIPS categories, and the final scores and payment adjustments for every clinician or group that submitted their scores. This study does not contain any control groups for comparison from the dataset. The dataset that was selected for this study delimits the variables and is narrowed down to only contain dermatologists in the South-Central United States.

Limitations

This study relied on secondary data analysis and the following limitations are hereby acknowledged. This study is only limited to one year of annual MIPS scores by CMS, 2018 as it was the only available public data. Another limitation of the study is that not all dermatology health service organizations within the South-Central United States participated in the annual MIPS reporting.

Significance

This study is significant as it adds to the growing body of knowledge on practice size, practice geographical location, and the overall final MIPS annual performance scores. Healthcare administrators may find strategies to increase funding to support staff and technology. Providing healthcare administrators with the funding to actively improve MIPS scores may lead to incentives and additional funding by CMS to support smaller practices, thereby leading to positive social change.

Summary and Conclusion

Section 1 elaborated on practice size and geographical location and how they affect annual MIPS scores. The problem statement, the purpose of the study, theoretical framework, comprehensive literature reviews with a concentration on limitations, and assumptions of each study provide the necessary background support for the study. Section 1 concluded with a description of the positive social change that had an impact on the study. What is known currently is that practice size and geographical location have an effect on annual MIPS scores and what is not known so far is the extent of the independent variables on the dependent variable. It is known that poor performance in the MIPS quality category negatively impacts funding for staffing and service availability. Smaller practice sizes and rural clinics have the most challenges regarding the social problem. The social problem in this study involved administrators in smaller practices and rural locations that experienced challenges in financially supporting staff and technology.

Section 2 concentrated on the research design and data collection of the study. In the section, the methodology of the study was reviewed, the targeted population was discussed, the modeled studies were described, and the threats and validity were explained.

Section 2: Research Design and Data Collection

Introduction

The purpose of this quantitative study was to examine if there is a statistical significance between practice size and organization geographical location and low MIPS scores among dermatologists in the South-Central United States. In this section, I describe the independent variables, practice size and organization geographical location, and the dependent variable of annual MIPS scores. I also describe the research design and rationale, methodology, sampling, instrumentation, and operationalization on constructs, any threats to the validity of the data, and any ethical procedures.

Research Design and Rationale

This study was a correlational design that identified and described the trends in the MIPS 2018 performance year. The dependent variable was the annual MIPS scores in 2018, and the independent variables were practice size and geographical location. This study may help to add to the growing body of knowledge on practice size, geographical locations, and the overall final MIPS annual performance scores. This can help healthcare administrators find strategies to increase funding to support staff and technology in their practices. This can help to actively improve MIPS scores and may lead to incentives and additional funding by CMS to support smaller practices. In this study, I used a secondary dataset that is publicly available for MIPS from the performance year 2018 to classify trends in MIPS performance for rural versus urban clinicians and small practice sizes among dermatologists in the South-Central United States: Arkansas, Louisiana, Oklahoma, and Texas.

CMS made the 2018 Quality Payment Program Experience Report Public Use File (PUF) available to the public on October 28, 2020. It is available on CMS's public data website, data.cms.gov, and allows for MIPS participation and performance in the 2018 performance year to be viewed. The data dictionary provides several fields that include clinicians who were qualified and participated, the four MIPS categories, and final score and payment adjustments for individual clinicians who are classified by their National Provider Identifier. The PUF dataset includes all healthcare clinicians who identified to be qualified to participate in MIPS during the 2018 performance year. The clinicians who participated in MIPS had to follow certain qualification measures, including billing more than $90,000 annually in Medicare Part B claims and having more than 200 Medicare Part B beneficiaries during the eligibility timeline. The physicians who participated with this criterion were included in the PUF regardless of submitting data.

The South-Central United States was chosen for this study and included four contiguous states for the study: Arkansas, Louisiana, Oklahoma, and Texas. The PUF classifies the provider's billing address where services are being provided based on the state listed for the location. Within the selected South-Central United States, providers can be listed in a rural or urban practice and those in the practice size category: Small practices include 15 or fewer eligible clinicians, and large practices include 16 or more eligible clinicians. On the PUF, clinicians are directly indicated as rural, if applicable. The Federal Office of Rural Health Policy stated that a practice within a rural-designated zip code is classified as a rural location. Also, CMS lists an individual provider as rural if they fall under this category (Health Resources & Services Administration, 2022). In this study, providers who were not listed as rural based on the PUF were considered nonrural providers.

There were two RQs as previously stated in Section 1 that addressed the research problem: the poor performance in the MIPS quality category that negatively impacts funding for staffing and service availability. Through these RQs, I sought to find statistical significance with correlation among the two independent variables, dermatology practice size and dermatology geographical location on the dependent variable, 2018 annual MIPS scores in the South-Central United States. The independent variables used in this study were practice size and organization geographical location (rural vs. nonrural). The selection criteria for these two variables included factors that had a positive influence on annual MIPS scores from 2018. The dependent variable of the study was the 2018 annual MIPS performance scores. These scores consist of four different categories: quality, cost, improvement activities, and promoting interoperability.

The specific research design of the study included a multiple linear regression model. This was used to evaluate the relationship between the variables stated. The following tests were completed in this study within the Statistical Package for Social Sciences (SPSS): multicollinearity with a model summary, ANOVA test, coefficients, descriptive statistics, and a regression summary with table. This research design was needed as it calculated a better understanding of the relationship between variables. The final calculations allow healthcare administrators to be better equipped in increasing their funding to increase the support for their staff as well as fund the needed technology to succeed with MIPS. This was done by observing the relationships between the variables. This may help steer administrators in the right direction based on the visual representation of the connections and influences of each test and the link each variable has over each other. This helps healthcare administrators advance their knowledge in the discipline.

Methodology

The methodology for the study research design includes a description of the study population, setting, and sampling techniques used for the survey, data analysis plan, power analysis in order to obtain the sample size, threats and validity, and the conclusion. The target population for this study consisted of all dermatologists within the South-Central United States who reported on MIPS in the year 2018. The South-Central states consist of Arkansas, Louisiana, Oklahoma, and Texas. The target population consisted of 1,046 participating dermatologists within the region.

Sampling and Sampling Procedures

The sampling strategy used was based on the study's criteria that included working in the dermatology specialty in the South-Central United States and partaking in the annual MIPS performance. The data collected from the CMS website are publicly available and contained the results for the 2018 MIPS performance year for providers. The sampling criteria included clinician specialty, a geographic location comprised of practice state and rural versus urban clinicians, practice size, and annual MIPS 2018 performance score. The sampling exclusion criteria were clinicians who billed less than $90,000 annually for Medicare Part B charges and clinicians who saw less than 200

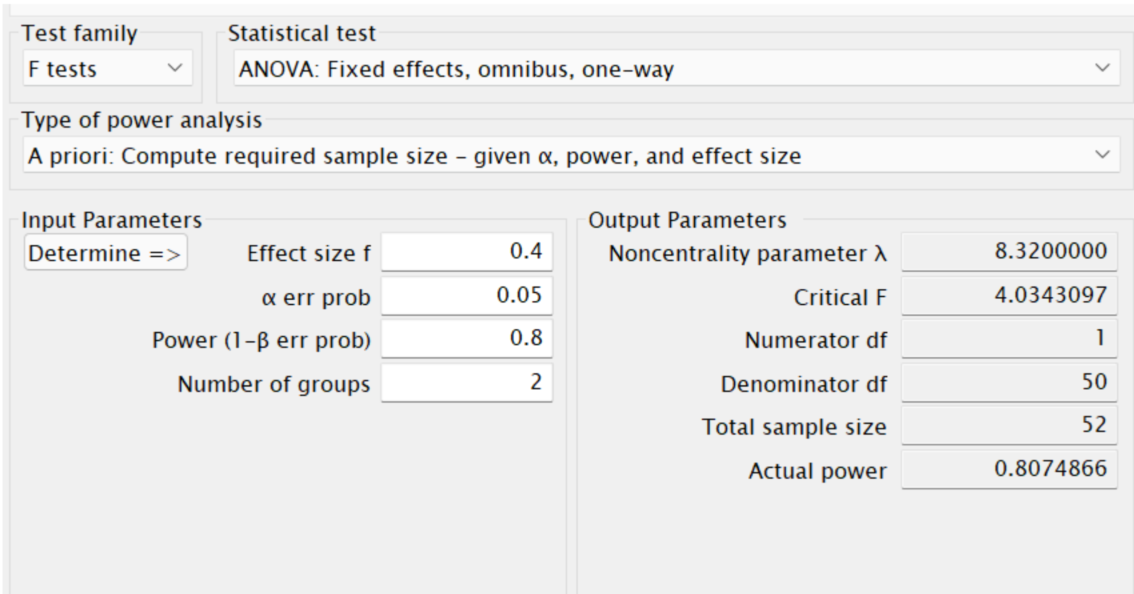
Medicare Part B patients annually. The reputability of the CMS data is the most trusted source as it is a government-controlled website where the dataset is provided directly from CMS, within the United States Department of Health and Human Services that administers the Medicare program.

A statistical power analysis associated with the hypothesis was set to determine the smallest sample size possible to reject the null hypothesis and avoid a type II error. This leads to a failure to reject the null hypothesis. The G*Power test is a tool used for the practical selection of the correct sample size. It is a software that offers free access but must have inputs for the estimated effect size, alpha, power (1-beta), and the statistical test. For this research, the minimum appropriate alpha was 0.05 and the medium effect size was 0.5. The sample sizes for RQ1 and RQ2 were calculated in G*Power.

The results of the calculation of the sample sizes for the statistical tests in G*Power were as follows: minimum of 52 participants for the sample group for RQ1 and RQ2. Figure 1 describes the calculation of the sample sizes for RQ1 and RQ2.

Figure 1

*Calculation of the Sample Sizes for RQ1 and RQ2 in G*Power*



Note. G*Power is a free-access application described by Faul et al. (2009). The free application was downloaded from https://www.psychologie.hhu.de/arbeitsgruppen/allgemeine-psychologie-und-arbeitspsychologie/gpower

Instrumentation and Operationalization on Constructs

Instrumentation

The instrumentation for this study was pertinent to the research goals to examine the annual 2018 MIPS performance scores. IBM SPSS nonparametric tests were used for measuring the relationships between the variables. In the secondary dataset, the physicians listed were selected according to their specialty, dermatology, and geographic location in the United States, South-Central United States. These participants were equally distributed across the two subgroups for RQ1 and the two subgroups for RQ2.

Operationalization of Variables

The operationalization process in this research is described in Table 1, which describes how variables characterize hypotheses and the measurable characteristics of those variables. Table 1 represents the operationalization of the variables. The process can be defined as transferring concepts to measurable characteristics of those concepts, variables, and indicators.

Table 1

Operationalization of Variables

Name of variable	Type	Level of measurement	Measure
2018 Annual MIPS performance scores	Dependent variables in RQ1 and RQ2	Interval	Percentage score, up to 100%. Four categories make up the score: quality, promoting interoperability, improvement activities, and cost
Physician practice size	Factor, the independent variable in RQ1	Categorical ordinal	2 ranks: small practice (<15 providers), large practice (>15 providers)
Physician geographical location	Factor, the independent variable in RQ2	Categorical nominal	2 categories of geographical location: "rural" and "urban" are coded as "1" and "2", respectively

Note. In the table, the names and types of the variables, levels in the samples (categories and ranks), levels of measurement, and measures are described.

Data Analysis Plan

IBM's SPSS, Version 28, was applied for the data analysis. Before preparing the SPSS dataset, data cleaning occurred. I performed the screening for the SPSS dataset for the issues. Those fitting the criteria of this study were moved forward in the process: dermatologists in the South-Central United States who reported on the 2018 annual MIPS. Based on the data and variables, the appropriate test was selected for the study. A one-way ANOVA test that examines and measures the correlation between 2018 annual MIPS scores (dependent variable) and practice size (independent variable) were used for RQ1. Also, a one-way ANOVA test was appropriate for RQ2 where the correlation between 2018 MIPS annual scores (dependent variable) and practice geographical location (independent variable) were measured.

RQs and Hypotheses

RQ1: Is there a statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States?

$H_0 1$: There is no statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States.

$H_a 1$: There is a statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States.

RQ2: Is there a statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States?

$H_0 2$: There is no statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States.

$H_a 2$: There is a statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States.

Detailed Analysis Plan

Hypothesis testing for RQ1 and RQ2 used the nonparametric Kruskal-Wallis tests, which is an alternative to the parametric one-way ANOVA. A standard confidence interval of 95% and an alpha of 0.05 served as the parameters for the tests. The effect size was computed in SPSS (analyze/descriptive statistics/frequencies) using Cohen's criteria for eta squared.

Threats to Validity

Threats to External Validity

External validity is the ability of the research outcomes to be generalized to the wider population. There are two notions within this validity: generalizability and applicability. These two notions characterize the extent to which the outcomes of a study apply. In this study, I strove for generalizability that represents the target population (see Khorsan & Crawford, 2014). Applicability, on the other hand, addresses the question of the usefulness of the findings in the study population (Murad et al., 2018). Both were addressed in this study.

Threats to Internal Validity

A threat to internal validity in the research is the statistical selection of the tests once they are met. It is the cause-and-effect between the two variables, dependent and independent (Baldwin, 2018). The threats most likely to happen in this study included the threats to selection, testing, and regression to the mean. These are the reasons for the effect (see Baldwin, 2018).

Threats to Constructs or Statistical Conclusion Validity

Threats to constructs in this research can be a bias in the specific selection of the measures (Conjointly, 2022). This can include different group practice sizes and different geographical location sites having higher annual MIPS scores that do not share with the other part of the population. Threats to the statistical conclusion validity can be a result of Type-I and Type-II errors (García-Pérez, 2012). The standard obligation for reducing a Type I error is to reduce the significance level of the hypothesis test, for example, to 0.01. The main obligation for decreasing Type II errors is to increase the sample size of the test. For this study, the statistical significance level was 0.05, which was the most appropriate level for this type of study. The size of the samples that were provided in this study were greater than the calculated G*Power adequate size to avoid a Type II error. There were 1,046 participants in this study, whereas the G*Power calculated sample size to be 52 participants. This helped to allow the minimization of the validity of threats.

Ethical Procedures

The secondary dataset for this study was provided by CMS. These data are publicly available and do not require permission from CMS to use these data for this study. Collecting and analyzing the data adhered to the ethical requirements set by the Institutional Review Board (IRB). I used the secondary data that was approved by Walden University's IRB: Walden IRB approval number 02-07-23-0627308. The treatment of human participants did not apply to this research study as only secondary data were used, which had already been produced and provided to the public.

The data were anonymous as there was no identifiable data for the resulting reports. Each unique clinician who was in the 2018 MIPS report was provided a provider key, which is a random unique key assigned to each row (see CMS Data, n.d.). This is important as the data were already de-identified, which protected against personal identities being revealed. There was not a need for protection for confidential data as the data had randomized provider keys. Again, there was not a breach of personal health information and the rights of the entities and physicians were protected based on the Health Insurance Portability and Accountability Act.

Summary

In Section 2, I described the plan for data collection, including the use of public, secondary data from the QPP website through CMS. I discussed the research design and its rationale, the target population, sampling procedures, sample size estimation, instrumentation, and operationalization of variables. The data analysis, description of external, internal, and statistical conclusions validity threats, and approaches to address them were also discussed. Moreover, ethical concerns were addressed, including the anonymity and security of the secondary data as well as IRB approval. In Section 3, I present data methodology, data analysis, and analysis findings.

Section 3: Presentation of the Results and Findings

Introduction

The purpose of this quantitative study was to examine if there is a statistical significance between practice size and organization geographical location on low MIPS scores among dermatologists in the South-Central United States. Both factors have been identified as positive influences on annual MIPS performance scores. The results of the study may be useful for healthcare administrators to support their practices by adding the needed staff and technology. This study contained two RQs and two sets of hypotheses. Both RQs addressed the relationship between both independent variables (practice size and geographical location) and the dependent variable of 2018 annual MIPS scores.

RQ1: Is there a statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States?

$H_0$1: There is no statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States.

H_a1: There is a statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States.

RQ2: Is there a statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States?

$H_0$2: There is no statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States.

H_a2: There is a statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States.

The organization of Section 3 contains the data collection of the secondary data set, including the time frame of the data collection, any discrepancies, and the description of how the data were representative of the sample of the population. Section 3 also presents the results of the data analysis, including the descriptive statistics, statistical assumptions, statistical analysis, and tables and figures that illustrate the results.

Data Collection of Secondary Data Set

For this study, the secondary data set was obtained from CMS's QPP website that gathered data for all specialties and all physicians who submitted their practices' MIPS scores for 2018. The data set was released by CMS to the public in 2020. The time frame for the secondary data depended on two factors: the existing standards for the data set and the quality requirements for the secondary data set regarding this research. Prior to IRB approval, the data set was sent to the Walden University's IRB to obtain permission to use the data set. After obtaining IRB approval (Walden IRB approval number 02-07-23-0627308) for the research's study materials, the secondary data set was actively de-identified and broken down into the values needed for the research from the MIPS QPP Code Book. These values were as follows:

- provider key
- clinician specialty
- practice state
- practice size
- rural clinician
- final score

Discrepancies in Data Analysis

The discrepancies in the use of the secondary data set from the plan in Section 2 were caused by the independent variable, practice size, being used as a dichotomous variable, small and large practice sizes, to conduct the data analyses. Initially this was listed under the operationalization of variables, but the study did not take into account that a multiple linear regression analysis would not be an effective way to represent the data. Therefore, the data were solely used via an independent samples *t* test. One of the positive consequences of the change was better quality of the data analysis.

Baseline Descriptive Characteristics of the Samples

The assessment of baseline descriptive characteristics of the sample was independent samples *t* tests that were centralized around the mean as this was the measuring central tendency. Using the mean values is applicable for descriptive analysis of categorical data represented in the study (Laerd Statistics, 2021). The tests, sample groups, variables, and categories were all described before any tests were completed. For calculation of the mean scores of 2018 MIPS annual scores, the SPSS Compare Means tests were applied. Then the data analysis was run in SPSS v28 using the independent samples *t* test. Based on the results of the independent samples *t* test, the descriptive statistics were analyzed into tables.

The dataset contained 1,046 participants and 87 different data points that were provided from the MIPS QPP Code Book. There were six data points from the code book needed for this research: provider key, clinician specialty, practice state, practice size, rural clinician, and final score. All other data points from the code book were eliminated as they did not pertain to this study. The independent variables were divided into two categories each. The first independent variable, practice size, was divided into small practice size, less than 15 clinicians, and large practice size, greater than 15 clinicians. Small practice size was coded as the number 1 and large practice size was coded as number 2. The other independent variable, geographical location, was also divided into two categories from the code book and used the value rural clinician. The code book represented the values as true and false. True, represented a value of rural, and false represented a value of nonrural. The values were represented as the number 0 for nonrural and the number 1 as rural in SPSS. The value rural was represented as number 1 and the value nonrural was represented as number 0.

Furthermore, each variable and category had its own measures. The dependent variable, 2018 MIPS final scores, represented a scale value. Both independent variables, practice size and geographical location, represented a categorical nominal value. The specialty, dermatology, represented a categorical nominal value and the South-Central United States region that contained the states of Arkansas, Louisiana, Oklahoma, and Texas represented as a categorical nominal value as well. Descriptive quantitative characteristics were represented by comparing the means. Table 2 contains the results of comparison between small practice size and large practice size.

Table 2

Comparison of Means Between "Small Practice Size" and "Large Practice Size"

Practice size	Mean	2018 MIPS final score *N*	Std. deviation
Small practice	65.17	641	39.02
Large practice	85.16	405	22.42
Total	72.91	1046	34.96

The results of a comparison of means between small practice size and large practice size showed that large practice sizes had a higher mean score ($M = 85.16$) compared to small practice sizes ($M = 65.17$) for the 2018 MIPS final scores. Table 3 represents results of comparison of means between the second independent variable, geographical location.

Table 3

Comparison of Means Between "Nonrural" and "Rural" Locations

Geographical location	Mean	2018 MIPS Final Score *N*	Std. deviation
Nonrural	73.27	972	34.41
Rural	68.24	74	41.51
Total	72.91	1046	34.96

Comparison of the means between the nonrural and rural locations showed that nonrural had a higher mean score ($M = 73.27$) compared to rural ($M = 68.24$) for the 2018 MIPS final scores. This was the conclusion of the comparison of means with the two independent variables. Table 4 shows the descriptive statistics of 2018 MIPS final scores on practice size.

Table 4

Descriptive Statistics and T-Test Results for 2018 MIPS Final Score by Practice Size

Practice size			2018 MIPS final scores			
	N	*M*	*SD*	*t*	*df*	*p*
Small practice size	641	65.17	39.03	-10.51	1035.59	<.001
Large practice size	405	85.16	22.42			

To approach RQ1, an independent samples *t* test was conducted using SPSS v28 to evaluate if there was a statistically significant difference between the mean 2018 MIPS final score between small practice size and large practice size. Table 4 portrays the data analysis. The mean 2018 MIPS final score of large practice sizes is numerically higher than small practice sizes. The results of the independent samples *t* test showed that the mean 2018 MIPS final score between small (M = 65.17, SD = 39.03, n = 641) and large practice sizes (M = 85.16, SD = 22.42, n = 405) was statistically significant [t(1035.59) = -10.51, df = 1035.59, p < .001]. Thus, small and large practice sizes on 2018 MIPS final scores were different. Therefore, the null hypothesis, which suggested that there was no significant difference in the mean 2018 MIPS final score between small and large practice sizes, can be rejected. In addition, Table 5 represents the descriptive statistics of 2018 MIPS final scores on geographical location.

Table 5

Descriptive Statistics and T-Test Results for 2018 MIPS Final Score by Geographical Location

Geographical location			2018 MIPS final scores			
	N	*M*	*SD*	*t*	*df*	*p*
Nonrural	972	73.26	34.41	1.19	1044	0.23
Rural	74	68.24	41.51			

To approach RQ2, an independent samples *t* test was conducted using SPSS v28 to evaluate if there is a statistically significant difference between the mean 2018 MIPS final score between nonrural and rural locations. Even though the mean 2018 MIPS final score nonrural locations is numerically higher than rural locations, the results of the independent samples *t* test showed that the mean 2018 MIPS final score between nonrural locations (M = 73.26, SD = 34.41, n = 972) and rural locations (M = 68.24, SD = 41.51, n = 74) was not statistically significant [$t(1044) = 1.19$, $df = 1044$, $p > .05$)]. Thus, nonrural and rural locations were approximately the same. Therefore, the null hypothesis, which suggested that there was no significant difference in the mean 2018 MIPS final score between nonrural and rural locations, cannot be rejected.

Demographic Characteristics of the Sample Group

The surveyed population was represented by clinicians from the South-Central United States: Arkansas, Louisiana, Oklahoma, and Texas. Each clinician had a unique provider key that was provided along with their organization's 2018 MIPS final scores. In this study, I researched the lower 2018 MIPS scores on small practices and rural practices. The specific administrative problem was how the lower scores negatively impact funding for staffing and service availability. The findings in this study have the potential to be generalized to a wider population across all clinician specialties and across the entire United States.

RQs

There were two RQs in this study. RQ1 was as follows: Is there a statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States? RQ2 was as follows: Is there a statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States?

RQ1

RQ1 was applied to investigate the relationship between the dependent variable, 2018 MIPS final scores, and the independent variable, practice size. After running an independent samples *t* test in SPSS v28, RQ1 provided the following results shown in Table 6.

Table 6

Independent Samples T-Test: Practice Size on 2018 MIPS Final Scores

2018 MIPS final score	Independent samples test Levene's test for equality of variances						*t*-test for equality of means
					Significance		Mean difference
	F	Sig.	*t*	*df*	one-sided *p*	Two-sided *p*	
Equal variances assumed	388.56	<.001	-9.38	1044	<.001	<.001	-19.99
Equal variances not assumed			-10.51	1035.59	<.001	<.001	-19.99

Based on Table 6, under Levene's Test for Equality of Variances, the bottom row, equal variances not assumed was used. The *t* value is represented as 10.51, the *df* value is 1035.59, and the *p* value is <.001. Therefore, the null hypothesis, which suggested that there was no significant difference in the mean 2018 MIPS final score between small and large practice sizes, can be rejected as there was a direct correlation between 2018 MIPS final scores and practice size. Furthermore, further analysis was conducted by analyzing the relationship between practice size and 2018 MIPS final scores in each of the states within the South-Central United States separately. Table 7 represents the data, and Table 8 represents the descriptive statistics.

Table 7

Independent Sample T-Test for 2018 MIPS Final Score by Practice Size in the South-Central United States

South-Central United States		Levene's test for equality of variances		Independent samples test		t-test for equality of means		
			F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean difference
Arkansas	2018 MIPS final score	Equal variances assumed	3.36	0.07	2.61	58	0.006	0.012	30.89
		Eq. var. not assumed			2.25	11.43	0.023	0.045	30.89
Louisiana	2018 MIPS final score	Equal variances assumed	130.62	<.001	-5.79	138	<.001	<.001	-34.59
		Eq. var. not assumed			-8.66	115.78	<.001	<.001	-34.59
Oklahoma	2018 MIPS final score	Equal variances assumed	100.22	<.001	-4.01	85	<.001	<.001	-30.25
		Eq. var. not assumed			-5.02	69.76	<.001	<.001	-30.25
Texas	2018 MIPS final score	Equal variances assumed	302.63	<.001	-8.01	757	<.001	<.001	-19.53
		Eq. var. not assumed			-8.66	714.55	<.001	<.001	-19.53

Table 8 represents an independent samples t test was conducted using SPPS v28 to evaluate if there is a statistically significant difference between 2018 MIPS final scores between small and large practice sizes in the South-Central United States. These states consist of Arkansas, Louisiana, Oklahoma, and Texas. The 2018 MIPS final scores in Arkansas (M =80.44, SD = 32.80, n = 50) is numerically higher in small practice sizes than Louisiana (M = 60.68, SD = 37.87, n = 99), Oklahoma (M = 65.51, SD = 41.42, n = 55), and Texas (M = 64.39, SD = 39.35, n = 437), but Arkansas (M = 49.55, SD = 40.91, n = 10) has the lowest numerical number in 2018 MIPS final scores in large practice sizes compared to Louisiana (M = 95.28, SD = 7.72, n = 41), Oklahoma (M = 95.76, SD = 12.73, n = 32), and Texas (M = 83.93, SD = 22.30, n = 322). Based on the statistics, Arkansas is the only state that is not statistically significant [t(58) = 2.61, df = 58, p = .01)] compared to the other states in the South-Central United States: Louisiana [t(115.78) = -8.66, df = 115.78, p = <.001)], Oklahoma [t(69.75) = -5.02, df = 69.75, p = <.001)], and Texas [t(714.55) = -8.66, df = 714.55, p = <.001)].

Table 8

Descriptive Statistics and T-Test Results for 2018 MIPS Final Score by Practice Size in the South-Central United States

South-Central United States	Practice size		2018 MIPS final scores				
		N	*M*	*SD*			
Arkansas	Small practice	50	80.44	32.80	*t*	*df*	*p*
	Large practice	10	49.55	40.91	2.61	58	0.01
Louisiana	Small practice	99	60.68	37.87	*t*	*df*	*p*
	Large practice	41	95.28	7.72	-8.66	115.78	<.001
Oklahoma	Small practice	55	65.51	41.42	*t*	*df*	*p*
	Large practice	32	95.76	12.73	-5.02	69.75	<.001
Texas	Small practice	437	64.39	39.35	*t*	*df*	*p*
	Large practice	322	83.93	22.30	-8.66	714.55	<.001

RQ2

Once the data analysis was complete for RQ1, the data for RQ2 was analyzed. RQ2 was applied to investigate the relationship between the dependent variable, 2018 MIPS final scores on the independent variable, geographical location. An independent samples t-test was conducted and is represented in table 9.

Based on Table 9, under Levene's test for equality of variances, the top row, equal variances assumed was utilized. The *t* value is represented as 1.19, the *df* value is 1044, and the *p* value is .23. Therefore, the null hypothesis which suggested that there was no significant difference in the mean 2018 MIPS final score between nonrural and rural locations cannot be rejected as the p-value is greater than 0.05. Furthermore, further analysis was conducted by analyzing the relationship between geographical location and

2018 MIPS final scores in each of the states within the South-Central United States separately. Table 10 represents the data. Table 11 represents the descriptive statistics.

Table 9

Independent Sample T-Test for Geographical Location on 2018 MIPS Final Score in the South-Central United States

2018 MIPS final score	Levene's test for equality of variances		Independent samples test		Significance		*t*-test for equality of means
	F	Sig.	*t*	*df*	One-sided *p*	Two-sided *p*	Mean Difference
Equal variances assumed	14.92	<.001	1.19	1044	0.12	0.23	5.03
Equal variances not assumed			1.02	80.82	0.16	0.31	5.03

Table 10

Independent Sample T-Test for 2018 MIPS Final Score by Geographical Location in the South-Central United States

South-Central United States		Levene's test for equality of variances		Independent samples test			t-test for equality of means	
			F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean difference
Arkansas	2018 MIPS final score	Equal variances assumed	.009	.93	.51	58	.31	.61	6.68
		Eq. var. not assumed			.49	10.78	.31	.63	6.68
Louisiana	2018 MIPS final score	Equal variances assumed	4.68	.03	1.74	138	.04	.08	31.30
		Eq. var. not assumed			3.35	3.77	.02	.03	31.30
Oklahoma	2018 MIPS final score	Equal variances assumed	.03	.85	-.29	85	.38	.77	-2.87
		Eq. var. not assumed			-.29	26.26	.39	.77	-2.87
Texas	2018 MIPS final score	Equal variances assumed	20.11	<.001	1.29	757	.09	.19	7.01
		Eq. var. not assumed			1.01	44.92	.16	.32	7.01

An independent samples t-test was conducted using SPPS v28 to evaluate if there is a statistically significant difference between 2018 MIPS final scores between nonrural and rural locations in the South-Central United States. These states consist of Arkansas, Louisiana, Oklahoma, and Texas. The 2018 MIPS final scores in Arkansas (M =76.30, SD = 35.85, n = 51) is numerically higher in nonrural locations than Louisiana (M = 71.71, SD = 35.80, n = 136), Oklahoma (M = 76.04, SD = 36.84, n = 69), and Texas (M = 73.08, SD = 33.84, n = 716). The 2018 MIPS final scores in Oklahoma (M = 78.92, SD = 37.42, n = 18) is numerically higher in rural locations than the remaining South-Central United States: Arkansas (M = 69.61, SD = 37.26, n = 9) Louisiana (M = 40.41, SD = 17.66, n = 4), and Texas (M = 66.07, SD = 44.88, n = 43). Based on the statistics, Texas is the only state that is statistically significant [$t(44.92) = 1.01$, $df = 44.92$, p = <.001)] for the 2018 MIPS final scores by geographical location among the South-Central United States: Arkansas [$t(58) = .512$, $df = 58$, $p = .61$)], Louisiana [$t(138) = 1.74$, $df = 138$, $p = .08$)], and Oklahoma [$t(85) = -.29$, $df = 85$, $p = .77$)].

Table 11

Descriptive Statistics and T-Test Results for 2018 MIPS Final Score by Geographical Location in the South-Central United States

South-Central United States	Geographical location	*N*	2018 MIPS final scores *M*	*SD*			
Arkansas	Nonrural	51	76.30	35.85	*t*	*df*	*p*
	Rural	9	69.61	37.26	0.512	58	0.61
Louisiana	Nonrural	136	71.71	35.80	*t*	*df*	*p*
	Rural	4	40.41	17.66	1.74	138	0.08
Oklahoma	Nonrural	69	76.04	36.84	*t*	*df*	*p*
	Rural	18	78.92	37.42	-0.29	85	0.77
Texas	Nonrural	716	73.08	33.84	*t*	*df*	*p*
	Rural	43	66.07	44.88	1.01	44.92	<.001

Visual Data Analysis

Moving forward, this section of the study contains visual representations of the data analysis by providing histograms that help to inform us about the shape and spread of the data. These histograms are divided into two categories: the relationship between practice size on 2018 MIPS final scores in each of the South-Central United States and the second category as the relationship between geographical location on 2018 MIPS final scores in each of the South-Central United States.

Practice Size

Arkansas

Figure 2 emphasizes small practices in Arkansas and their 2018 MIPS final scores. We observe the total number of these types of practices in Arkansas that participated in the 2018 MIPS year was 50 with a mean of 80.44. The skewness of the data is -1.67 indicating a negative skewness. The data represents a negatively skewed probability distribution as the tail of the graph is going to the left (Albright & Winston, 2017).

In Figure 3, there are a total number of 10 practices that are considered large practices in Arkansas that submitted their MIPS 2018 data. The mean is 49.55 and the skewness is 0.39 that indicates a positive skewness. The data and histogram represent a moderately positive skewed probability distribution as the tail of the graph is going to the right.

Figure 2

Correlation of Small Practice Size in Arkansas in 2018 MIPS Final Score

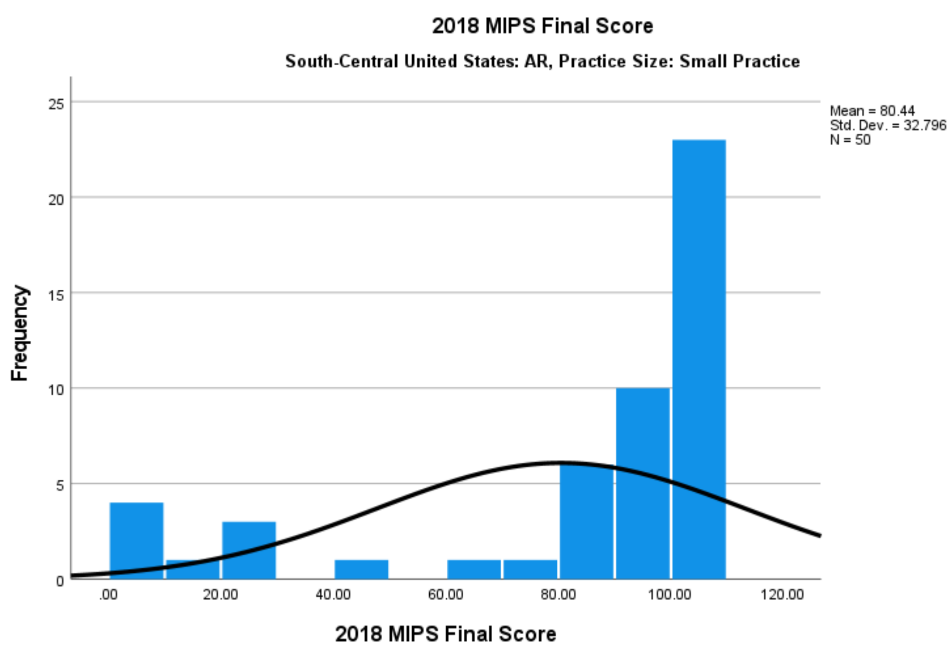
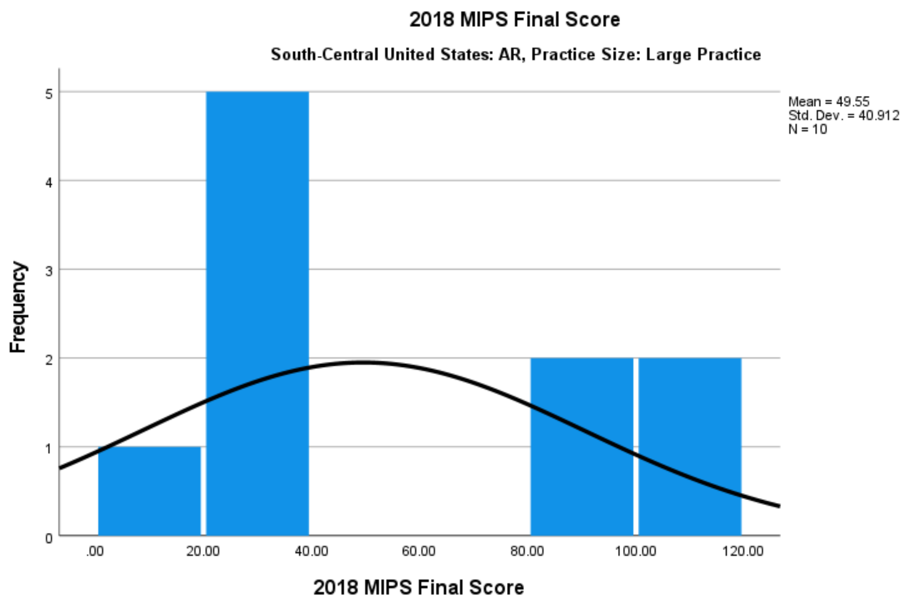


Figure 3

Correlation of Large Practice Size in Arkansas in 2018 MIPS Final Score



Louisiana

Figure 4 emphasizes small practices in Louisiana and their 2018 MIPS final scores. We observe the total number of these types of practices in Louisiana that participated in the 2018 MIPS year was 99 with a mean of 60.68. The skewness of the data is -0.31 indicating a weak, but nonetheless, negative skewness.

In Figure 5, there are a total number of 41 practices that are considered large practices in Louisiana that submitted their MIPS 2018 data. The mean is 95.28 and the skewness is -2.11 that indicates a negative skewness. The data and histogram represent a moderately negative skewed probability distribution as the tail of the graph is going to the left. Negative skewed distributions will present as the mean being less than the median and the mode.

Figure 4

Correlation of Small Practice Size in Louisiana in 2018 MIPS Final Score

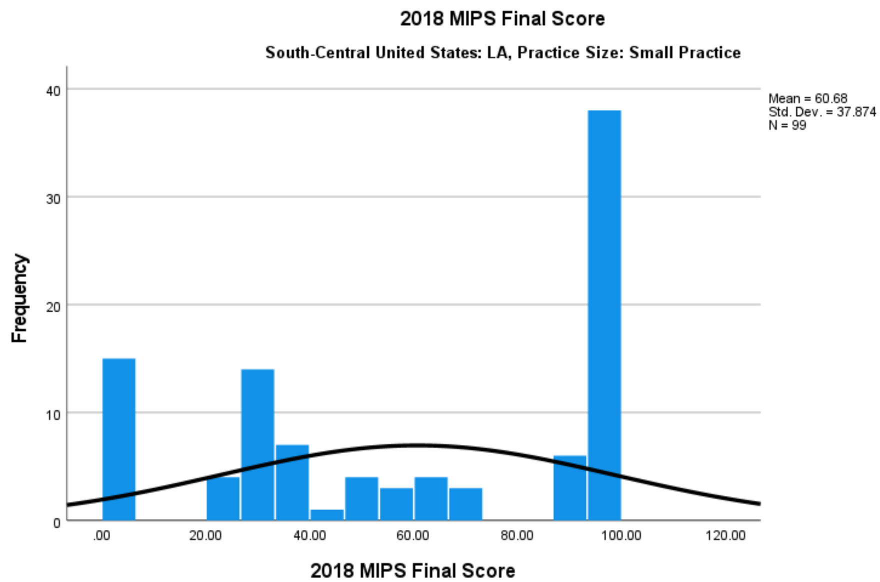
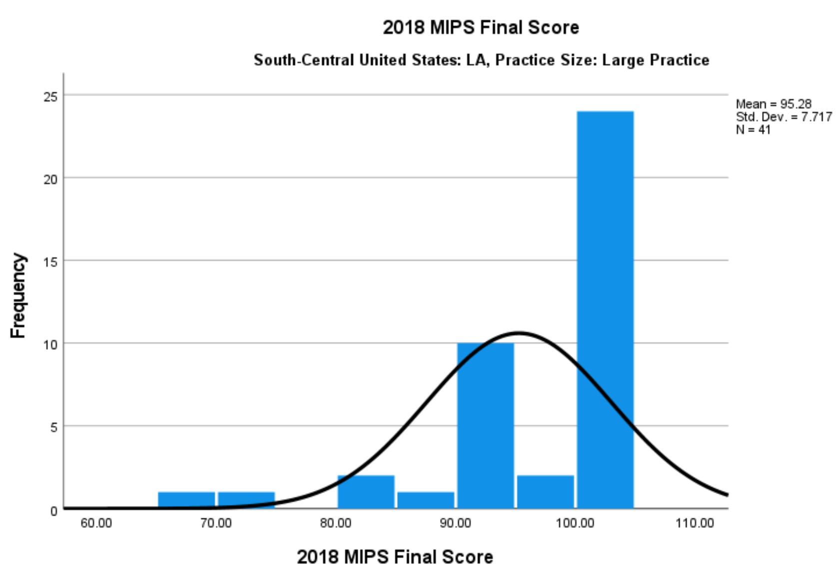


Figure 5

Correlation of Large Practice Size in Louisiana in 2018 MIPS Final Score



Oklahoma

Figure 6 emphasizes small practices in Oklahoma and their 2018 MIPS final scores. We observe the total number of these types of practices in Oklahoma that participated in the 2018 MIPS year was 55 with a mean of 65.51. The skewness of the data is -0.66 indicating a negative skewness.

In Figure 7, there are a total number of 32 practices that are considered large practices in Oklahoma that submitted their MIPS 2018 data. The mean is 95.76 and the skewness is -3.64 that indicates a strong negative skewness. The data and histogram represent a strong negative skewed probability distribution as the tail of the graph is going to the left.

Figure 6

Correlation of Small Practice Size in Oklahoma in 2018 MIPS Final Score

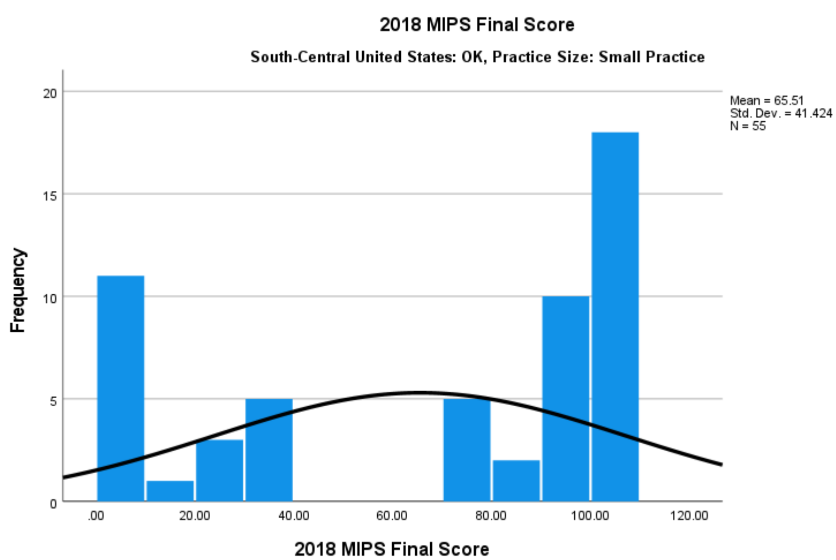
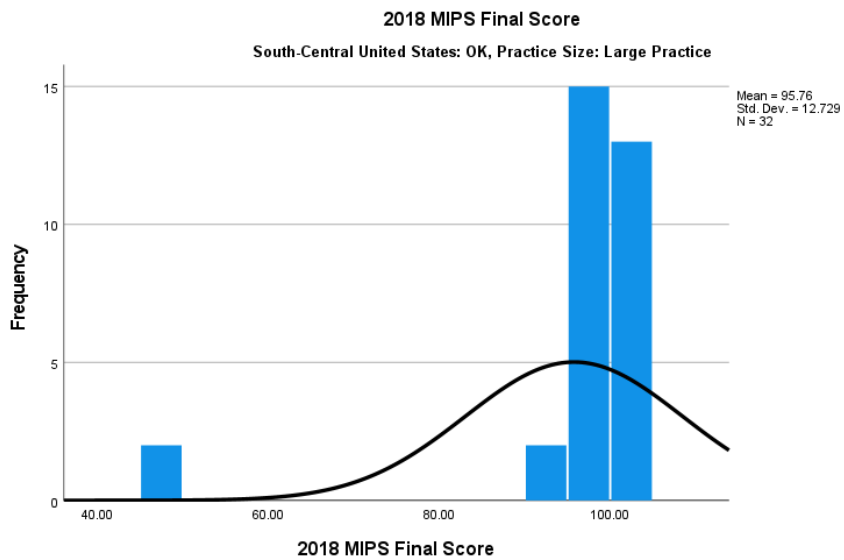


Figure 7

Correlation of Large Practice Size in Oklahoma in 2018 MIPS Final Score



Texas

Figure 8 emphasizes small practices in Texas and their 2018 MIPS final scores. We observe the total number of these types of practices in Texas that participated in the 2018 MIPS year was 437 with a mean of 64.39. The skewness of the data is -0.59 indicating a negative skewness.

In Figure 9, there are a total number of 322 practices that are considered large practices in Texas that submitted their MIPS 2018 data. The mean is 83.93 and the skewness is -2.30 that indicates a negative skewness. The data and histogram represent a negative skewed probability distribution as the tail of the graph is going to the left.

Figure 8

Correlation of Small Practice Size in Texas in 2018 MIPS Final Score

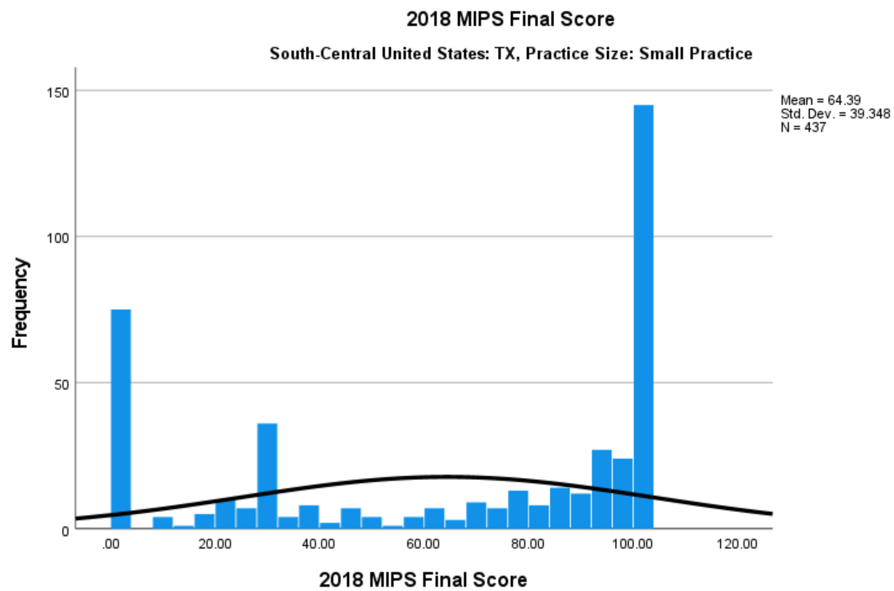
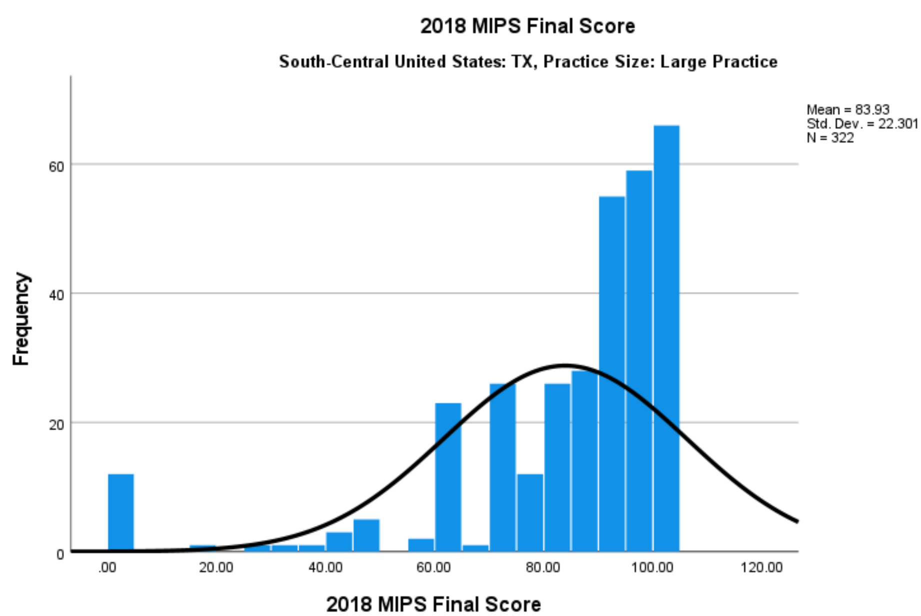


Figure 9

Correlation of Large Practice Size in Texas in 2018 MIPS Final Score



Geographical Location

Arkansas

Figure 10 emphasizes nonrural practices in Arkansas and their 2018 MIPS final scores. We observe the total number of these types of practices in Arkansas that participated in the 2018 MIPS year was 51 with a mean of 76.29. The skewness of the data is -1.25 indicating a negative skewness.

In Figure 11, there are a total number of 9 practices that are considered rural practices in Arkansas that submitted their MIPS 2018 data. The mean is 69.61 and the skewness is -0.97 that indicates a negative skewness. The data and histogram represent a negatively skewed probability distribution as the tail of the graph is going to the right.

Figure 10

Correlation of Nonrural Location in Arkansas in 2018 MIPS Final Score

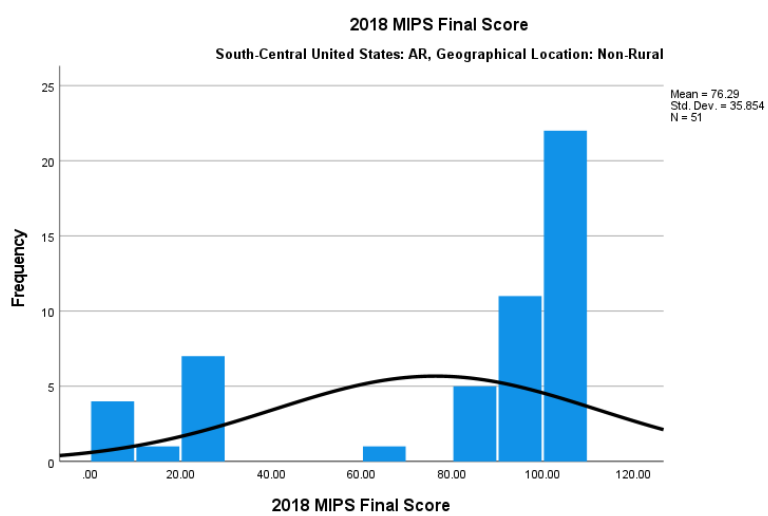
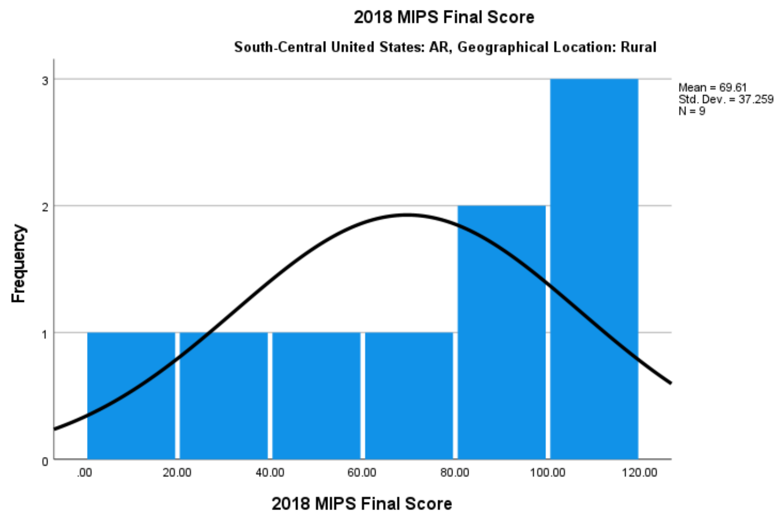


Figure 11

Correlation of Rural Location in Arkansas in 2018 MIPS Final Score



Louisiana

Figure 12 emphasizes nonrural practices in Louisiana and their 2018 MIPS final scores. We observe the total number of these types of practices in Louisiana that participated in the 2018 MIPS year was 136 with a mean of 71.71. The skewness of the data is -0.91 indicating a weak, but nonetheless, negative skewness.

In Figure 13, there are a total number of four practices that are considered rural practices in Louisiana that submitted their MIPS 2018 data. The mean is 40.41 and the skewness is 1.99, that indicates a positive skewness. The data and histogram represent a moderately positively skewed probability distribution as the tail of the graph is going to the right. Positive skewed distributions will present as the mean being greater than the median and the mode.

Figure 12

Correlation of Nonrural Location in Louisiana in 2018 MIPS Final Score

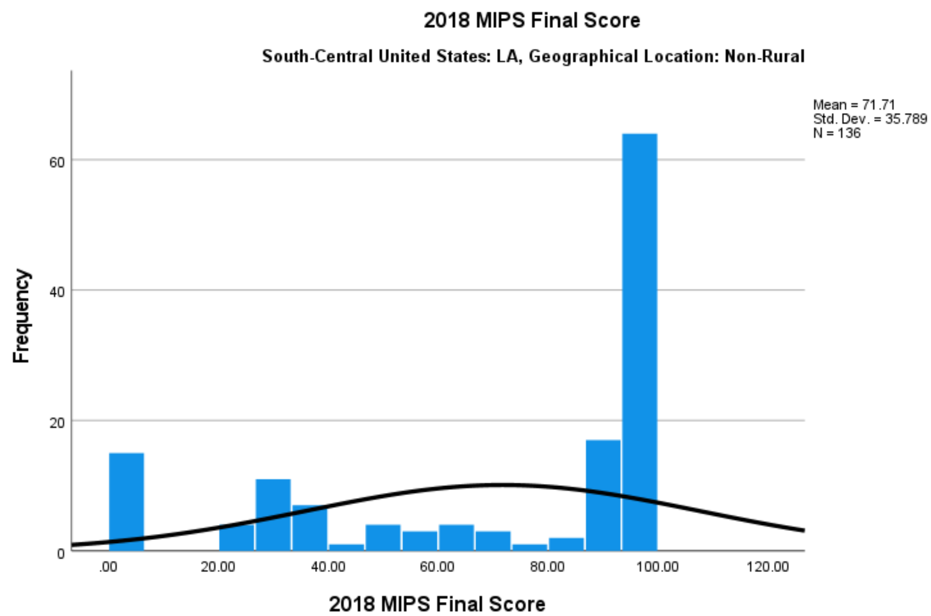
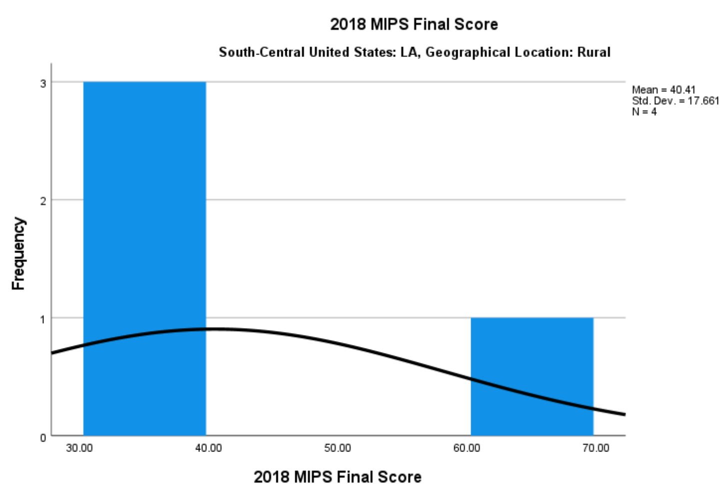


Figure 13

Correlation of Rural Location in Louisiana in 2018 MIPS Final Score



Oklahoma

Figure 14 emphasizes nonrural practices in Oklahoma and their 2018 MIPS final scores. We observe the total number of these types of practices in Oklahoma that participated in the 2018 MIPS year was 69 with a mean of 76.04. The skewness of the data is -1.24 indicating a negative skewness.

In Figure 15, there are a total number of 18 practices that are considered rural practices in Oklahoma that submitted their MIPS 2018 data. The mean is 78.91 and the skewness is -1.53 that indicates a negative skewness. The data and histogram represent a moderately negatively skewed probability distribution as the tail of the graph is going to the left.

Figure 14

Correlation of Nonrural Location in Oklahoma in 2018 MIPS Final Score

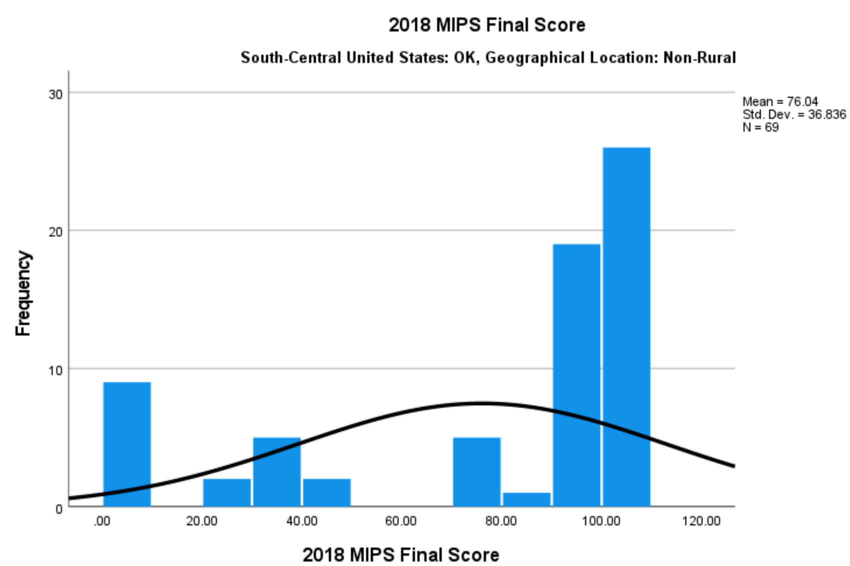
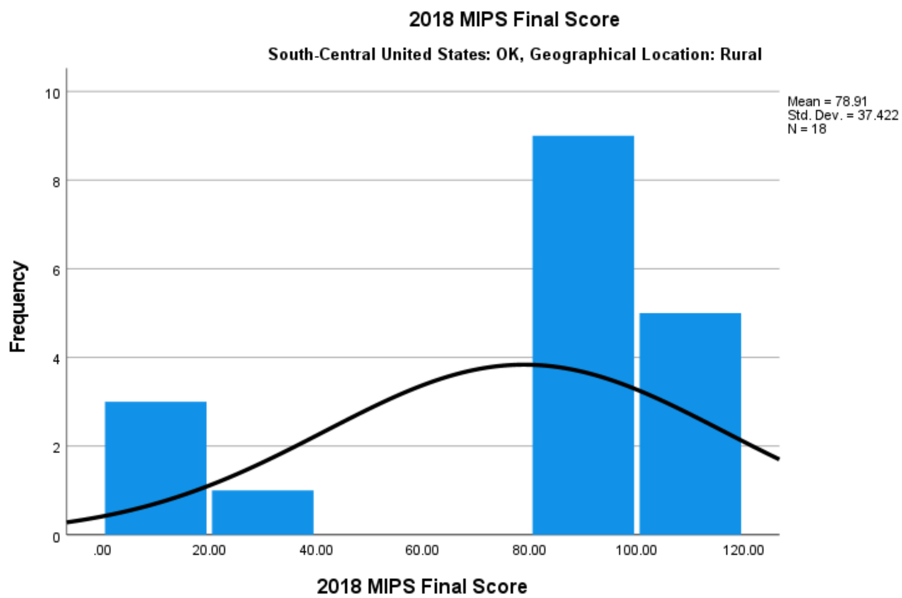


Figure 15

Correlation of Rural Location in Oklahoma in 2018 MIPS Final Score



Texas

Figure 16 emphasizes nonrural practices in Texas and their 2018 MIPS final scores. We observe the total number of these types of practices in Texas that participated in the 2018 MIPS year was 716 with a mean of 73.08. The skewness of the data is -1.14 indicating a negative skewness.

In Figure 17, there are a total number of 43 practices that are considered rural practices in Texas that submitted their MIPS 2018 data. The mean is 66.07 and the skewness is -0.75 that indicates a negative skewness. The data and histogram represent a weak negatively skewed probability distribution as the tail of the graph is going to the left.

Figure 16

Correlation of Nonrural Location in Texas in 2018 MIPS Final Score

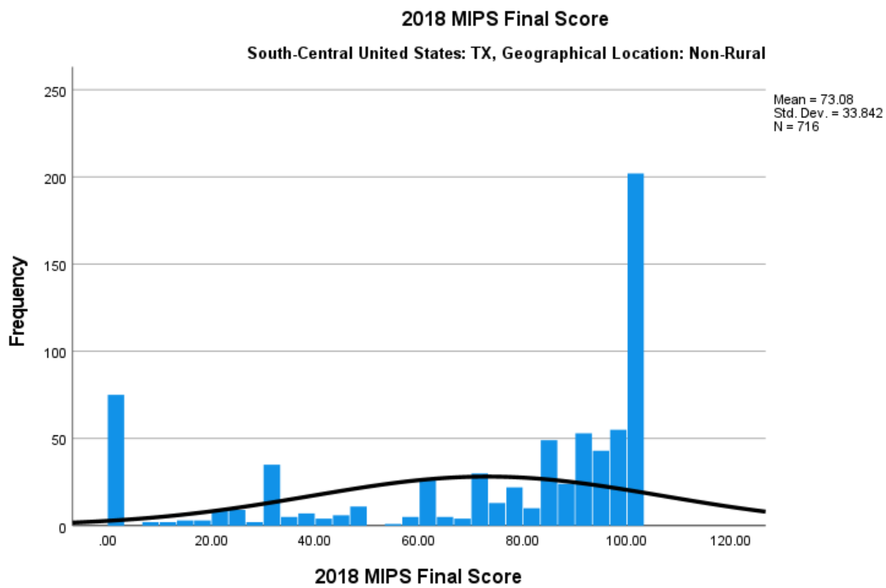
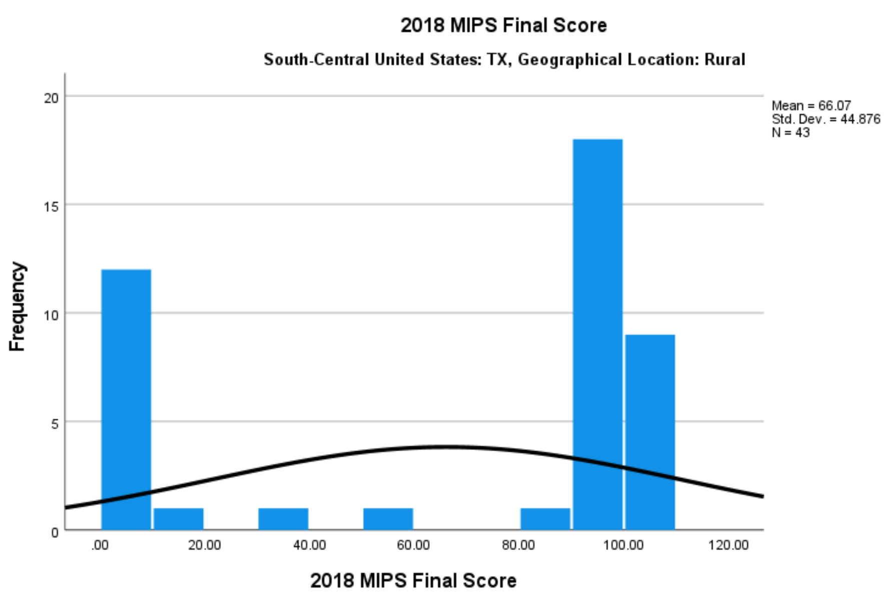


Figure 17

Correlation of Rural Location in Texas in 2018 MIPS Final Score



Representativeness of the Sample Group

A representative sample needs to be unbiased and is a reflection of the characteristics of the target population. The main purpose of this study was to examine the statistical significance between practice size and organization geographical location on low MIPS scores among dermatologists in the South-Central United States. The target population represented the generalizability of this study while the applicability addressed the findings of the target population that were explained in this section.

Purposeful selection was eliminated in this study by replicating the criteria for the variables and target population. The specific data points that were chosen from the MIPS code book included: grouping of physician specialty into dermatology, practice size, geographical location, and the South-Central United States. This allowed for the target population to fit into the study.

Summary

In Section 3, the results of the descriptive statistics and independent samples t-test analyses were described. Descriptive analysis allowed for conclusions about the relationships between the dependent variable and the independent variables. RQ1 showed the relationship between 2018 MIPS final scores and practice size. Based on the descriptive statistics, the RQ was statistically significant, allowing for the null hypothesis to be rejected and the alternative accepted stating there is a direct relationship between 2018 MIPS final scores and practice size. RQ2 showed the relationship between 2018 MIPS final scores and geographical location. Based on the descriptive statistics, the RQ was not statistically significant, stating the null hypothesis cannot be rejected and there is no relationship between the 2018 MIPS final scores and geographical location.

Further analysis of the data was conducted by researching the states in the South-Central United States: Arkansas, Louisiana, Oklahoma, and Texas. The data analyses showed that Louisiana, Oklahoma, and Texas were all statistically significant with practice size, strengthening the rejection of the null hypothesis. Arkansas did not demonstrate statistical significance results in practice size; therefore, the null hypothesis could not be rejected. In addition, visual representations of the data were presented via histograms that demonstrated the skewness of the data and the distribution.

In addition, the same data analyses were conducted for geographical location on the South-Central United States. This time, Texas was the only statistically significant value that rejected the null hypothesis, which did not correlate with the significance from the second RQ, therefore rejecting the null hypothesis. The rest of the states, Arkansas, Louisiana, and Oklahoma did not portray statistically significant *p*-values, therefore strengthening RQ2 and not rejecting the null hypothesis.

Section 4 represents a complete analysis and interpretation of the findings in this research. This section includes findings of the peer-reviewed literature from Section 1 and the comparisons the literature review has with the data analysis findings from this section. Also, comparisons in Section 4 were made based on the assessment and the theoretical framework context and findings. It also contains a description of the limitations of the study, results, and analysis on how the findings are generalized and applied to practice and the implications for positive social change.

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

Introduction

The purpose of this quantitative study was to examine, measure, and compare effects of variables of the 2018 MIPS annual scores on practice size and geographical location. Results of data analyses on the effects of the factors of practice size (RQ1) and geographical location (RQ2) on 2018 MIPS annual scores revealed the statistically significant relationships in RQ1 and nonstatistically significant relationships in RQ2 between variables. Furthermore, this study focused only on the specialty of dermatology and centered around the South-Central United States: Arkansas, Louisiana, Oklahoma, and Texas. Additionally, further analyses were performed to center on the two independent variables and how each state within the South-Central United States compared to the others. The quantitative analysis results allowed for comparison and conclusions on the differences of the factors that could be helpful to healthcare administrators and the entire healthcare administration practice for improving annual MIPS scores in small practice sizes and rural locations. Detailed analysis of the significance and applicability of the study findings is presented in this section. Section 4 includes an interpretation of the findings, limitations of this study, recommendations for future research, and implications for professional practice and positive social change.

Reintroduction of the Study

Problem Statement

The problem statement for this study is the poor performance in the MIPS quality category that negatively impacts the funding for staffing and service availability.

MACRA has lent a hand to small and rural practices for the first 5 years of the implementation of the QPP and has allocated millions of dollars to assist these types of practices. This program has come to an end, and small and rural practices need to ensure they have the adequate resources necessary in order to pass MIPS annually.

RQs

This study contained two RQs:

RQ1: Is there a statistically significant correlation between dermatology practice size and annual MIPS scores in the South-Central United States?

RQ2: Is there a statistically significant correlation between dermatology geographical location and annual MIPS scores in the South-Central United States?

Further data values from the MIPS code book pointed to analyzing each state within the South-Central United States to each of the independent variables, thus having a subset of four variables for each RQ. RQ1 was expanded to determine the correlation between practice size and annual MIPS scores in (1a) Arkansas, (1b) Louisiana, (1c) Oklahoma, and (1d) Texas. RQ2 was expanded to determine the correlation between geographical location and annual MIPS scores in (2a) Arkansas, (2b) Louisiana, (2c) Oklahoma, and (2d) Texas.

Interpretation of Findings

In this study, the healthcare administration approach to investigating the relationship between practice size and geographical location on annual MIPS scores provided statistical significance data as well as data that were not statistically significant. The first independent variable, practice size, determined that there was a statistical significance between small (less than 15 clinicians) and large (greater than 15 clinicians) practice sizes on 2018 MIPS final scores, meaning practice size has a direct impact on annual MIPS scores. This analysis strengthened the literature review that larger practice sizes have higher MIPS final scores. A recent article addressed MIPS reporting in anesthesia though a larger group practice size and the increased MIPS scores that resulted compared to smaller practices (Gal et al., 2021). Current research continues to show that large healthcare systems and groups have the required administrative infrastructure to collect and submit MIPS data. The data analysis determined the *p*-value to be <.001. Further analysis reported on practice size between the South-Central United States on 2018 final MIPS scores. The data portrayed that Louisiana, Oklahoma, and Texas all have statistically significant values (*p*-value <.001) that represents that the practice size in these states has a direct impact on 2018 MIPS final scores. The only state that was not statistically significant and did not have a direct impact was Arkansas (*p*-value = .01).

The second independent variable, geographical location, was divided into nonrural and rural. After data analysis was performed, the data portrayed that there was no statistical significance between geographical location and 2018 MIPS final scores. The *p*-value was .23, which was greater than the allowed .05. The findings recorded that geographical location did not have a direct impact on 2018 MIPS final scores. Therefore, I was not able to conclude that nonrural locations have higher MIPS scores than rural locations. Further analysis addressed the relationship of geographical location in the South-Central United States on 2018 final MIPS scores. From this region, Texas was the only state that was statistically significant on geographical location and 2018 final MIPS scores (*p*-value <.001) and demonstrated a direct impact among the study variables. The rest of the states did not have a direct impact on the variables and were not statistically significant: Arkansas (*p*-value = .61), Louisiana (*p*-value = .08), and Oklahoma (*p*-value = .77).

Findings in Theory

The theoretical framework of this study corresponds to Donabedian's model of 1966. This model uses the three qualities of care, structure, process, and outcome, that allow for an organization to provide quality care to their patients. The Donabedian model was used to conceptualize, plan, and evaluate the MIPS interventions that were implemented in 2017 where the healthcare industry shifted to a value-based care approach.

Based on the Donabedian model of the three qualities of care, structure, process, and outcome, I found that annual MIPS performance scores are directly linked to the quality of care of patients as this study demonstrated that practice size has a direct impact on MIPS scores. However I did not find the same correlation between annual MIPS performance scores and geographical location of practices as the data did not demonstrate statistical significance. The Donabedian model can be considered an applicable theoretical framework for this study as RQ1 portrayed the qualities of care and translated into applicable data for this study.

Findings to Research Literature

Literature Review Section 1

The literature review in Section 1 regarding practice size all supported that small practice sizes would continue to receive lower MIPS annual scores due to not having the correct practice infrastructure or the needed technology. Small practices tend to join larger practices that would discharge the quality reporting burden (Berdahl et al, 2019). Another study found that large healthcare systems and groups have the required administrative infrastructure to collect and submit MIPS data (Gal et al., 2021). The literature review regarding practice size confirmed the data analysis and findings of the relationship between practice size and 2018 MIPS final scores.

Next, the literature review in Section 1 pertaining to geographical location did not support the relationship between geographical location and 2018 MIPS final scores. It was reported that rural areas are faced with issues in getting health services and that the rural barrier is evidence if implication on MIPS performance scores (Eggleton et al., 2017). The literature review regarding geographical location did not confirm with the data analysis and findings of the relationship between geographical location and 2018 MIPS final scores.

Current Literature

According to the latest research, small practices were more likely to receive negative or neutral payment adjustments from CMS. They were also more likely to underperform during the MIPS annual year than the larger practices (Han, 2021). Also, comparing the 2017 and 2018 QPP MIPS years, small practices have improved in their median overall MIPS final scores. Han (2021) also confirmed that small practices or solo practitioners were decreasing while large practices were increasing. In the specialty of dermatology, there were twice as many dermatologists in large groups in the year 2017 than those in small practice (Benlagha & Nguyen, 2021). Furthermore, this trend has become appealing to new graduates of dermatology and private practice physicians as the reason points out to less struggle to secure reimbursement from CMS for the annual MIPS performance, the possibility of negotiating health plans, and a benefit from quality management, which translates to improved MIPS final scores every year. Benlagha and Nguyen (2021) stated that the southern region United States had the lowest proportion of dermatologists in large groups, which is also what I found in this study with Arkansas, Louisiana, and Oklahoma within the South-Central United States. Otherwise, the proportion in Texas is almost equal.

Regarding geographical location, I confirmed that rural clinicians received a slightly lower annual MIPS performance score than nonrural clinicians, but they each had similar payment adjustments. Also, HPSA clinics that were previously mentioned in the literature review accounted for only 20% of the study population of the 2018 MIPS performance year where these types of clinics also received a lower median score compared to non-HPSA clinicians (Han, 2021). One of the findings in this article stated that clinicians in rural locations and HPSA geographical location were not performing worse during the 2018 MIPS performance year. This corresponds with the statistical data analysis in this study confirming that geographical location has no direct impact on the 2018 MIPS final scores. Gronbeck et al. (2022) evaluated annual MIPS scores on several social factors, one being rurality of a location. Dermatologists who saw a greater proportion of patients within these social categories were documented to have lower MIPS scores compared to their peers. Gronbeck et al. (2022) observed that the adjusted MIPS score for limited dermatologists in a county to be 61.1, which is less than the nonrural category that demonstrated 66.5 as the adjusted MIPS score. As a result, MIPS scores among these dermatologists were lowest as they also demonstrated limited organizational resources.

The current literature review from these research studies all confirmed the previous literature section in this study. Small and rural practices continue to demonstrate lower annual MIPS scores than large and nonrural practices, but statistically, practice size has a direct impact on annual MIPS scores while geographical location does not.

Limitations of the Study

Generalizability Limitations

A limitation to the generalizability of the study findings is related to the type of test that was involved in this study, which was the independent samples *t* test, a parametric test. With a parametric test, small sample sizes limit the credibility of the data resulting in falsification of the analysis. In this study, the G*Power analysis demonstrated that a minimum of 52 participants were needed. This study contained 1,046 participants, which is not considered small. Also, parametric tests involve fewer complex problems. Based on the 2018 MIPS annual data from CMS, there were multiple variables and covariants that could have been selected. This study focused on two independent variables for the parametric test to be valid.

Another limitation to the generalizability of the study is selection bias. This study contained secondary data. This type of bias occurs when the researcher chooses what variables would be studied in the research. To avoid this type of bias, purposive homogenous sampling was conducted. This type of sampling indicates replication of the sampling criteria, which was portrayed in the research literature and statistical analyses conducted on the target population. Doing so allowed for the practicability of the relationships and correlations between the study results and the different characteristics of the target population. The comparisons demonstrated the type of relationship between practice size and the annual 2018 MIPS performance scores as well as the relationship between geographical location and the annual 2018 MIPS performance scores. Thus, limitations due to selection bias were minimized in this study to make generalizability feasible.

Validity Limitations

External validity contains the concepts of generalizability and applicability, which refers to the extent to which the results of the study can be applied. As stated earlier, generalizability of the study findings refers to the target and general population. Applicability refers to the usefulness of the findings in the study population that were demonstrated in this study. Limitations in applicability are minimized in this study but continue to remain due to nonprobability sampling. This type of selection is a subjective approach to selecting different variables within the study population. The large sample size of the population, 1,046 participants, and the randomized selection of clinicians reduced the limitation. Also, the study demonstrated the p-values less than $<.001$ in the first RQ, therefore supporting the statistical significance conclusion and the applicability of the findings. The second RQ was not statistically significant and, therefore, the external validity limitations increase for geographical location on 2018 annual MIPS scores.

For internal validity, the level of trustworthiness of the correlating relationships between practice size and 2018 annual MIPS scores is considered sufficient again due to the *p*-value equaling <.001. The trustworthiness of the second RQ, geographical location on 2018 annual MIPS scores, is not sufficient as the *p*-value was not statistically significant. In essence, parametric tests such as the independent samples *t* test that was performed in this study produce true distribution compared with nonparametric tests (see Creswell & Creswell, 2018). Both RQs contained true distributions. These distributions were portrayed visually utilizing histograms that showed the skewness of the results.

Reliability Limitations

Reliability of the research findings depends on the consistency of the measures and over time how the findings will be able to be obtained by other researchers (Price et al., 2015). The limitations to the reliability of the measurements in this study are associated to the nonprobability selection. This limitation was reduced as the number of participants within the study surpassed the G*Power analysis sample size of 52. This indicated the sample size was large enough for this study and proved that the findings were trustworthy.

Recommendations for Further Research

Recommendations Grounded in Strengths of the Study

The intent of this study was to assist healthcare administrators in finding strategies to increase funding to support staff and technology in small practices and rural locations. This was a response to the identified research problem, which was the poor performance in the MIPS quality category that negatively impacts funding for staffing and service availability. As observed in the literature review, larger organizations implemented operational changes at a higher pace than other organizations due to capital investments that created financial leverage and progressive organization structure (Kauffman et al., 2020). These larger organizations also invested their finances into health information technology, which directly impacted the organization's annual MIPS performance scores.

Recommendations for future research regarding MIPS include evaluating MIPS changes in performance scores over time. This study was limited to only the 2018 MIPS performance year as it was the only publicly available dataset. Researching the evolution of MIPS over time will allow for administrators to better comprehend the strategies needed to pass MIPS. Also, the performance categories, quality, promoting interoperability, improvement activities, and cost are always reweighed yearly. Researchers should account for this change. In addition, future research should investigate these variables against all 50 states and compare how each state is performing in MIPS based on practice size and geographical location. The primary intention of this study was not to originally compare the South-Central United States data to one another, but once the research expanded, additional data analysis pointed to subsequent research that needed to be performed.

To reduce disparities in small practices and rural locations, further studies need to research and examine the effects of other important factors for successfully passing annual MIPS performance. These factors can include, but are not limited to, individual vs. group reporting of MIPS, researching each category in MIPS and how each factor within the category affects MIPS scores, and reimbursement policies.

Recommendations Grounded in the Limitations of the Study

The main limitations to applicability, validity, and reliability of the study findings were related to the nonprobability selection and selection bias. Future research with probability selection will likely eradicate limitations of the findings' applicability to large group sizes that are within the target and general populations. Also, within the parametric tests such as the independent samples t test, the exact *p*-value will allow for applicability of the test results for large group sizes.

Implications for Professional Practice and Social Change

Professional Practice

This study aimed to address the relationship between practice size and geographical location on 2018 annual MIP scores in dermatologists in the South-Central United States. This study utilized the Donabedian model as the theoretical framework. The main goal of this study was to examine and find the correlation between 2018 annual MIPS scores on practice size and geographical location in order for healthcare administrators to reallocate their funds needed to pass MIPS annually. It is commonly known and supported by the research literature that both practice and geographical location both have a direct impact on annual MIPS scores. In this study, a quantitative analysis allowed for the RQs to be answered to determine the significance and effect of the relationship between the two independent variables on the dependent variable. The results of the quantitative independent samples t-test provided information for healthcare administration practice in MIPS performance scores. Increasement of assistance for rural locations will not have a direct impact on annual MIPS scores, but an increasement of assistance for small practices will have implications for positive social change.

Methodological Implications

The approaches in this study to select, process, and analyze the data have wider methodological implications and potential application in the evaluation of assistance to small practices and rural locations in the field of healthcare administration. In this study, purposive nonprobability sampling was the chosen method and was the most suitable method for sampling the data as it is adequate to examining healthcare administration issues. After conducting the G*Power analysis in Section 1, the minimum required number of participants needed for the study was 52 for running the independent samples t tests. Parametric testing is a popular research method in quantitative studies about healthcare administration issues. Combined with purposive homogenous sampling, this study achieved a breadth of understanding of the data.

Theoretical Implications

The Donabedian model was applied as the theoretical framework for this study. This study followed the qualities of care in the Donabedian model that included structure, process, and outcome. The MIPS program was designed to tie payments to quality of care provided to patients. It closely resembles the Donabedian model as the framework encouraged providing quality of care to patients. As a result, the feasibility and effectiveness in analyzing the relationships between the two independent variables on the dependent variable were reached. The research results and applicability of the findings in this study ties the healthcare administration field with the Donabedian model as both strive for quality of care for patients. The implications of this study on the Donabedian model demonstrates increased effectiveness and practicality as the model conceptualizes, plans, and evaluates the MIPS program interventions.

Empirical Implications

Skilled Staff. As described in Section 1, the training for the skilled staff members is different from other staff member training as it contains criteria of having one year of clinical experience, leadership skills, and completion of MIPS training within the organization. Based on the data analysis, annual MIPS scores are directly impacted with practice size and thus having skilled staff is a needed resource that can improve an organization's MIPS scores annually. By helping healthcare administrators strategize to improve their organization's annual MIPS scores will lead to incentive payments from CMS to the organizations. Thereby, allowing for these additional funds to be reallocated to the organization's MIPS training. This will result in organizations continually passing MIPS.

Certified EHR Resources. As stated in Section 1, another factor needed to overcome lowers MIPS scores is having a certified EHR. A lack of advanced EHR reporting software and skilled staff may result in poor finances (Khullar et al., 2021). Previous literature review and data analysis have both steered in the direction that large healthcare organizations have the financial capabilities to pass MIPS annually, thereby affecting health information technology directly. Also, rural locations are already facing hardships and are receiving support annually for MIPS from CMS. Recognizing the need for certified EHR systems that also allocates a MIPS advisor steers organizations and healthcare administrators in the right direction when reporting on MIPS. Based on the literature review, certified EHRs allow for administrators to eliminate poor scores and to fully comprehend what is needed in order to pass MIPS annually. Again, helping strategize how to pass MIPS annually for healthcare administrators will allow for their organization to continue to pass MIPS annually and will also allow for the reallocation of the additional CMS incentive funds to the proper certified EHR. Allocating for a certified EHR and MIPS advisor allows for improvement in MIPS which translates to maximizing organization payments, continued education on regulatory details, and the flexibility to mobilize the practice staff and clinicians (Verdara, 2018). This currently works for large practices and nonrural locations and will also contribute to small practices and rural locations as this resource will have a positive effect on the implementation and integration of certified EHRs.

Sustainability of Physician Practices. The adoption of MIPS by MACRA and CMS is seen as a way to provide quality and cost-efficient care, drive improvement in the health care of patients, and reduce cost in healthcare organizations all across the nation (QPP, n.d.). The sustainability of physician practices is directly tied to their MIPS performance each and every year. Based on the literature review and data analyses, an observation regarding practice size is that physician practices are not sustainable as small practices as the data is directed towards failed scores and the literature points toward physicians joining larger practices that have the needed infrastructure to pass annually. Regarding rural locations, the data does not point to a direct impact of geographical location on annual MIPS scores, but the literature steers toward challenges and barriers for rural locations on passing MIPS without the guidance and benefit that MACRA was allocating from 2016 to2020. The implication of this study for physician practices is that organization training will improve MIPS scores in the organization and will increase the sustainability of that practice in the long run. The training for staff and clinicians and having a certified EHR will be important for small practices and rural locations than large practices and nonrural locations as those types of organizations already have the needed infrastructure and administrative resources.

Positive Social Change

Providing healthcare administrators with the strategies needed actively improve MIPS scores may lead to incentives and additional funding by CMS to support smaller practices and rural location practices, thereby leading to positive social change. Also, this study will add to the growing body of knowledge on practice size, practice geographical location, and the overall final MIPS annual performance scores for organizations. As seen in the findings, the *p*-value of practice size on 2018 annual MIPS scores was $<.001$, which provides positive social changes on organizational and practice levels and for the healthcare industry in general.

Organization-Level Positive Social Changes

Healthcare systems will flourish with the necessities to pass MIPS annually. This will improve MIPS scores, allowing for an increase in financial incentives from CMS, thereby reducing financial constraints which will allow healthcare administrators to further hire additional staff and train them to become MIPS skilled employees. Also, the funding would go to having a certified EHR with a certified MIPS advisor that steers the organization into passing MIPS every year. Furthermore, it allows for patient disparities to become reduced, and the quality of care becomes equal to all patients, regardless of whether they visit a small practice size or rural practice location. The positive social change again will allow for healthcare administrators to have the needed strategies to hire the right employees and purchase a certified EHR.

Conclusion

This study aimed at identifying the relationship between practice size and geographical location on annual MIPS scores in dermatology in the South-Central United States. Previous literature lacked quantitative parametric analysis of the independent variables on the dependent variable. As stated earlier in the study, the noted limitations allowed for the study to migrate from a multiple linear regression model into an independent samples t test data analysis. Also, by centering in on the South-Central United States region, this study was able to analyze deeper into the region to determine the correlation between practice size and geographical location in Arkansas, Louisiana, Oklahoma, and Texas.

The study concluded that there was a direct relationship between practice size and 2018 annual MIPS scores as the mean was statistically significant. Geographical location and 2018 annual MIPS scores did not represent a direct relationship. Further analysis with the same variables on the South-Central United States demonstrated a direct relationship between practice size and 2018 annual MIPS scores in the states of Arkansas, Louisiana, Oklahoma, and Texas. However, geographical location in these four states did not demonstrate a direct impact, expect in the state of Texas. The descriptive analyses and statistics in this study allowed for more feasible results and an increased practicality of the study. Utilizing Donabedian's model as a theoretical framework allowed for the optimization of the study and findings. The MIPS program was introduced by MACRA in 2017 via the QPP in CMS. Both the Donabedian Model and the MIPS program are integral in the quality of care.

Based on the findings of the study, the awareness of healthcare administrators regarding MIPS was transformed once the results were observed. This allowed for healthcare administrators to better strategize and become better equipped in passing MIPS annually within their organizations. The two factors that led to lower MIPS scores, not having skilled staff and not having a certified EHR will be overcome in the future as administrators can strategize to pass MIPS and reallocate the CMS incentive payments to the correct areas in the organizations. This study utilized a purposive selection method and a parametric comprehensive testing that instilled in the framework that evaluated the independent variables of practice size and geographical location on the dependent variable, 2018 annual MIPS scores. The topic and study findings will continue to be significant into the future due to the continuous evaluation and improvement of the MIPS program as well as the transparency that organizations will face when reading this research study and other past and potentially future research. Also, MIPS was introduced in the year 2017 and is currently underway for its seventh consecutive year. It will take lots of research and initiation on the healthcare administrator portion in order to successfully pass MIPS and receive incentives from CMS.

The most important implication of this study's findings for positive social change is the direct support healthcare administrators will have in order to actively improve their organization's MIPS scores. The potential incentives and additional funding they may receive by CMS in order to support small practices and rural practice locations will assist in passing MIPS annually. As a result, this study will add to the growing body of knowledge on practice size, practice geographical location, and the overall annual MIPS performance scores.

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