Scholars in Rural Health: Mentoring Experiences of Former Participants

By

© 2020

Brian D Steele

M.S.Ed., University of Kansas, 2012

B.A., West Texas A&M University, 2010

Submitted to the graduate degree program in Educational Leadership and Policy Studies and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Education.

_____

Chair: Dr. Eugene Parker

_____

Dr. Lisa Wolf-Wendel

_____

Dr. Susan Twombly

_____

Dr. Amanda Mollet

_____

Dr. Heidi Hallman

Date Defended: 10 December 2020

The dissertation committee for Brian Steele certifies that this is the
approved version of the following dissertation:

Scholars in Rural Health: Mentoring Experiences of Former Participants

_____

Chair: Dr. Eugene Parker

Date Approved: 14 December 2020

Abstract

Providing healthcare across Kansas is a primary mission of the University of Kansas School of Medicine. The University of Kansas School of Medicine established the Scholars in Rural Health program to meet the growing need of physicians in rural locations by providing a route to medical school for premedical students from rural Kansas. The early assurance, two-year pipeline program accepts college students from rural Kansas who spend two years with a rural physician in Kansas to help them prepare for medical school. The purpose of this qualitative study is to understand the mentoring experiences of former student participants in the Scholars in Rural Health program.

The study used a basic qualitative methodology. Semi-structured interviews provided information about the experiences of 11 former Scholars. The literature on physician shortages, determinants of rural health, and mentoring guided the study. The main research question for the study was what are the mentee experiences of former participants in the Scholars in Rural Health program? Three research questions supported the main question: what are Scholars' perceptions of mentoring relationships, when did mentoring occur for participants in the Scholars in Rural Health program, and how can the mentee experience be improved?

Analysis of the interviews presented several themes and suggested three significant findings. First, Scholars did not have a uniform experience. Mentors provided scholars with access to clinical experiences that many premedical students do not experience, but not all Scholars had the same experience. Second, the characteristics of the mentor mattered to the Scholar participants. Scholars often noted that their mentors were teachers and had characteristics that allowed for in-depth experiences. Lastly, barriers existed but did not prevent mentoring in the SRH program.

Acknowledgments

This dissertation would not be possible without the help and support of many people and through my faith in Jesus Christ. First, thank you, Dr. Eugene Parker, my dissertation chair, for guidance throughout this endeavor. Thank you to Dr. Susan Twombly and Dr. Lisa Wolf-Wendel for the help and expertise in completing this degree. Dr. Amanda Mollet and Dr. Heidi Hallman, thank you for your feedback and the time dedicated to serving on my committee. To the EdD cohort, thanks for the constant encouragement and help.

To friends, former colleagues at UMKC SOM, and colleagues at the KU SOM, thanks for the support, motivation, and encouragement. Specifically, thank you to Sandy Leppin and Blair Day for understanding when my attention was elsewhere, Sandy McCurdy and Jason Edwards for countless help throughout the dissertation process, and Dr. Mark Meyer for additional support and guidance. To the Scholars in Rural Health program. Scholars, this would not have been possible without your participation. Thank you to Dr. K James Kallail and Dr. Michael Kennedy for your willingness to research the Scholars and provide feedback and ideas for this project. Dr. Kallail and Sandy, you created a program that has impacted countless Kansas lives.

To Mom, Dad, Lindsey, Garrett, Katie, Kyle, Joe, Vicki, and Matt: thanks for the love, support, and help with the kids during this time. Dad, thanks for encouraging me on this journey and providing an example of how education can provide opportunities for a better future. To my wife, Kate, and kids, Graham and Brooke: there are many words in here, but no amount of words can describe the love I have for each of you. I love you all and felt your prayers throughout this entire process. I dedicate this dissertation to you all. The state of Kansas has provided opportunities beyond my imagination. Kansas is where I met my wife, where my kids were born, and where I have planted roots. *Ad Astra Per Aspera*.

Table of Contents

List of Tables

List of Appendices

Scholars in Rural Health: Mentoring Experiences of Former Participants

Chapter 1

The Health Resources and Services Administration (HRSA) has determined that 66% of the areas designated as Health Professional Shortage Areas (HPSA) in primary care are in rural areas of the United States (Bureau of Health Workforce et al., 2019). The disproportionately low number of practicing physicians in rural areas and the rising age of these physicians have many states worried. A limited ability to access a physician reduces the ability for preventive care and can lead to unmet health needs that can result in poor health status and costly hospitalization (Skinner et al., 2019). The nation currently lacks physicians working in rural areas, and data projects the need for physicians in rural areas to grow at an alarming rate over the next decade (Bazemore et al., 2019; Shipman et al., 2019; Skinner et al., 2019).

The HRSA has designated 89 of the 105 Kansas counties as Health Professional Shortage areas (Kallail & McCurdy, 2010). The need for physicians in Kansas has followed the trends nationally, but a vast majority of Kansas is considered rural. As physician needs in rural Kansas grow, it will be crucial to create programs that seek to reverse the physician shortage. One of the most significant predictors of a physician practicing in a rural location is familiarity with that location (Goodfellow et al., 2016; Hudson & May, 2015; Hyer et al., 2007). To address Kansas's healthcare needs, physicians will need to be familiar with rural Kansas.

The University of Kansas School of Medicine (KU SOM) is the only medical school in Kansas. KU SOM's primary mission is to serve the state. To help address the physician shortage in Kansas, in 1997, KU SOM created a pipeline program oriented towards increasing the number of rural physicians, the Scholars in Rural Health program (SRH). The SRH program is a program through the Office of Admissions at the KU SOM. The SRH program guarantees admission into

the KU SOM after completion of the program. It accepts premedical students from rural Kansas backgrounds after their sophomore year of college in hopes that after medical school and residency training, the Scholar will return to practice medicine in rural Kansas. Participants have no obligation to practice rural medicine, but the program has a rural medicine emphasis that encourages a future rural practice location. Scholars who complete the SRH program and matriculate into medical school have a 96% graduation rate.

A large portion of the program focuses on each Scholar spending 200 hours with a rural physician mentor. Ideally, the program pairs a Scholar with a mentor in the Scholar's rural hometown. A few Scholars have been assigned mentors outside of their hometown. The definition of "hometown" in the SRH program is where the Scholar graduated from high school. This definition is not always accurate because some Scholars attend a high school outside of their city or county of residence. Each member of the SRH program identifies a potential mentor who practices medicine in or around their hometown. Scholars log over 200 hours with their mentor, but no research examines the mentoring experience. The SRH program provides mentors little instruction about what mentoring should include. In the early years of the SRH program, the program accepted around six to eight students per year. Before the SRH program's growth, the program director would call each mentor to review the program and offer insight into that mentor's potential Scholar. As the program expanded, it became difficult for program administrators to offer as much detail. The 2019 SRH program was the largest group accepted; 23 students entered the program with plans to matriculate in 2021. As the SRH program continues to grow, new mentors will most likely be needed to ensure that there are enough mentors to accommodate the number of Scholars.

Purpose of the study

This dissertation explores the experiences of past mentee participants in the Scholars in Rural Health (SRH) program. Scholars are required to shadow the mentor for 40 hours each semester and 40 hours over the summer. The study's focus is to learn about time spent with a mentor in a rural location, preparation for medical school, and the mentor's role in the Scholar's life. The study offers data that can be used to create a more unified mentor experience based on past mentee experiences. The study may influence how the SRH program selects mentors, how program administrators pair mentees and mentors, and what future experiences mentors should seek to include with their mentees. The study's main research question iss: what is the mentee experience of a former participant in the Scholars in Rural Health program? Supporting research questions for the main question included: what are Scholars' perceptions of mentoring relationships, when did mentoring occur for participants in the Scholars in the Rural Health program, and how can the mentee experience be improved?

I conducted a basic qualitative case study on the mentoring aspect of the Scholars in Rural Health program at the University of Kansas School of Medicine using purposeful sampling to select previous Scholars who are now current medical students. The study gathered qualitative data on Scholars' mentee experiences. Before this study, no formal research has addressed the 200-hour mentoring requirement. No study had previously asked about the mentee experience when participating in the mentoring relationship. The dissertation adds literature on mentor relationships in rural communities and the mentoring relationships within a formal rural medical school pipeline program. The research helps to understand past mentees' experiences and guide future mentoring in the SRH program. This dissertation study offers suggestions for implementing a mentoring experience that can better support students from rural areas.

Context of the Study

The study's context is in the Scholars in Rural Health program at the University of Kansas School of Medicine. It is essential to understand both the University of Kansas School of Medicine and the SRH program to understand why the study is meaningful.

University of Kansas School of Medicine

The University of Kansas School of Medicine (KU SOM) is a public medical school. It is the only medical school for Kansas, and for this reason, it has a primary mission of meeting the state's health care needs. KU SOM has the mission of improving all lives in Kansas, no matter the size of a county's population. The KU SOM has a national reputation for training primary care physicians (US News, 2019) and meeting the mission of the school (Cathcart-Rake et al., 2017; Major, 1966).

To provide healthcare to all Kansans, the KU SOM has three campus locations: Kansas City, Salina, and Wichita. The KU SOM established the Salina campus in 2011. In 2011, the Wichita campus began to teach students during all four years of education; before 2011, Wichita only taught students in their third and fourth clinical years. The creation of two additional campus options was a direct response to the Greiner et al. (2007) and Phillips et al. (2009) report on the declining physician workforce. The founding of the Salina campus addressed the need for an increased medical school class at a school that trained rural physicians (Cathcart-Rake et al., 2017). The mission of educating medical students in a rural environment has been the Salina campus's primary objective. The Salina campus did not receive any state funding to help open the location, and community efforts funded the campus. This shift in funding models shows the dedication Kansas communities have to bringing healthcare to their hometowns.

Scholars in Rural Health Program

Each year, the University of Kansas School of Medicine is accredited to have a total incoming class size of 211. Salina takes eight students for all four years, Wichita takes 28 for all four years, 44 spend their first two years in Kansas City before moving to Wichita to finish their education, and 131 spend all four years in Kansas City. The Scholars in Rural Health (SRH) program is a guaranteed admission program for students from rural backgrounds. SRH students can attend any of the three locations, but hometown location often influences campus choice. Scholars often come from hometowns near the Salina or Wichita campuses. During the SRH program, Scholars spend time on the Wichita and Salina campuses. The Wichita campus hosts the SRH program interviews and the annual meeting. The SRH program annual meeting has a social component of bringing all the Scholars together and provides information about rural opportunities in medical school, scholarships and financial support available for rural physicians, and additional information about life as a rural physician. It is also an annual review of the Scholar's progress in the program. The Salina campus hosts the SRH program orientation.

The SRH program was initially named the Scholars in Primary Care Program when it was established in 1997. Scholars attend a program orientation after acceptance into the SRH program. The program requires that a Scholar maintain a 3.5 cumulative and science GPA, score at or higher than the 40th percentile on each section of the MCAT, shadow 40 hours each semester with a mentor, complete three case reports, attend annual meetings, and graduate from an accredited college or university. Scholars receive early acceptance into medical school contingent on meeting all program requirements. If a Scholar does not meet the requirements, the program administration will terminate his or her participation in the Scholars Program. The Scholars who are removed from the program, or choose to leave the program, are advised about

alternate pathways to medical school at KU, such as the early decision program or regular admissions program. In 2019, the MCAT requirement changed to a minimum overall score of 500 and at least 124 on each subtest. Scholars with the updated MCAT requirement will matriculate at the KU SOM in 2021. Participants in this study met the MCAT requirement of scoring above the 40th percentile on each section.

The SRH program exists to encourage rural applicants to apply to medical school and join the rural Kansas physician population. The SRH pipeline program supports students in the two years before matriculation into medical school, establishing a possible foundation for a return to rural practice. A primary determinant of a student returning to practice rural medicine is previous exposure to the rural environment and rural medicine (Hyer et al., 2007; Patterson et al., 2019; Ranmuthugala et al., 2007; Shipman et al., 2019), so the main requirement for selection into the program is that students come from a rural background. The KU SOM created the Scholars program to grow the rural applicant pool, expose rural premedical students to the life of a rural physician, and provide a pipeline for rural students into medical school by guaranteeing admission into medical school upon completing the program. The program intended to increase the number of students choosing primary care as their specialty. From the start, the program had always had the intent to produce rural physicians, although the name signified a focus on primary care. In 2005, the name changed to Scholars in Rural Health to help reiterate the program's primary goal: increasing the physician workforce in rural Kansas. Although the name changed to attract more students towards rural health, primary care is still a significant component.

As of 2019, the Scholars program has accepted 275 students into the program since its founding. Of the 275 students, 162 of the Scholars identify as female. The fact of 58% of the Scholars being female is significant. The 2018 medical school application cycle was the first

application year where national female applications outnumbered male applications (AAMC, 2019c). Representation by females in medical careers and medical school classes historically has been an issue. A significant disparity exists for females entering the physician workforce (AAMC, 2019c; Paladine et al., 2020). Females account for about a third of active working physicians, 46% of all physicians in training, but more than half of the medical student population (AAMC, 2019c). Female physicians receive less compensation than males, and lower numbers of female physicians receive academic advancement or leadership positions (Butkus et al., 2018). Females are more likely to choose primary care specialties commonly found in rural areas but are less likely to locate in rural areas (Paladine et al., 2020).

The 275 Scholars represent 39 different universities, not all located in Kansas. The current Scholars program, which includes juniors and seniors in college, has 41 students who expect to matriculate into the KU School of Medicine after completing all program requirements. There are currently 28 first- and second-year Scholar students at the University of Kansas School of Medicine.

Scholars are not bound to practice medicine in a rural community after the completion of their medical education. There are 90 Scholars who are currently practicing medicine. About 19% of the 90 scholars practice medicine outside of Kansas, and of the 81% practicing in Kansas, only 36 Scholars practice in a rural county. There are currently 13 former Scholars practicing in metropolitan locations, 22 in urban counties, and 7 in urban academic centers. The 13 in metropolitan locations include Manhattan and Salina, both locations that might fit the rural definition for some but not the rural definition used by the SRH program. The 7 Scholars practicing medicine and teaching medicine at an urban academic center are at the KU School of

Medicine campuses in Kansas City and Wichita. The former Scholars at urban academic centers are hopefully using their experiences to guide future physicians to practice in rural locations.

There is no requirement that a Scholar focuses on primary care, but the program encourages Scholars to return to rural Kansas to practice primary care. Some students do not return to practice in a rural area, or they specialize in medicine that serves little purpose in a rural area. Rural specialty options typically include internal medicine, pediatrics, and family medicine. The number of medical students who pursue a subspecialty has increased (Jolly et al., 2013), and students who pursue a subspecialty often practice in urban areas that can support their subspecialty practice. The subspecialty practice of internal medicine has risen from 62% in 2002 to 81% in 2015 (Dalen & Ryan, 2016). The rise in subspecialty could be due to the rise in the cost of medical education. A few medical schools have been trying innovative ways to decrease the cost of attendance, like offering free tuition, to measure the outcome of specialty choice when financial burden is eliminated (Thomas, 2019). The SRH program does not provide scholarships for medical school but does offer gauranteed admission. The Salina campus does provide a scholarship for Scholars who choose to attend that campus.

Each student is paired with a mentor for their two years in the SRH program and spend over 200 hours with this physician. The hours do not need to be consecutive. Before matriculating to medical school, the Scholar will have spent a significant time commitment with their mentor. Outside of receiving necessary information about the Scholars program, mentors receive no guidance on how the mentor relationship will work. The qualitative study offered insight into how the mentor relationship influenced matriculating into medical school and provided data on how the mentor relationship could be improved.

Within the SRH program, there is neither formal training to become a mentor nor guidance for how the mentor relationship will work over the course of the two-year commitment. Mentors are primarily selected based on geographic location and whether or not they practice a primary care specialty. Students can make suggestions for who might serve as their mentor, but a mentor needs to be in or around the student's hometown. Scholars are required to be from rural areas, and the rurality of Scholars' hometowns can make it challenging to find mentors. The mentor relationship can vary based on the comfort the mentor has with students in their practice. Mentors might have had previous experience with students shadowing or taking medical students during rotations. Typically, the more experience a mentor has with students in practice, the more willing a mentor is to give students hands-on experience.

Background of Rural Premedical Students

Mentoring can be an essential tool for helping students from underrepresented populations in medicine, including female and rural students, navigate the process of becoming a physician (Akinla et al., 2018; Bourke et al., 2014; Nimmons et al., 2019). Although the SRH program is housed in the KU SOM, there is currently a lack of oversight on the mentoring aspect of the SRH program, with no clear outcomes for the mentoring relationship. The only requirement is that a Scholar log 200 hours with a mentor. A lack of clear direction in, or competencies amongst mentors for, the mentoring relationship could create unintended consequences. Each Scholar has the primary characteristics that the literature suggests makes a medical student likely to practice medicine in a rural area (Goodfellow et al., 2016; Laven & Wilkinson, 2003; Patterson et al., 2019). Each SRH participant has spent much of their life living in a rural community. Spending significant time with a mentor in a rural Kansas community strengthens a Scholar's tie to rural Kansas.

Many factors can contribute to a Scholar not returning to a rural area of Kansas to practice. These factors are often at the center of research conducted on rural medical students. After admission into the SRH program, it will be at least nine years until a student is in their first medical practice location. Once the SRH student matriculates into the medical school, there are no longer any SRH program requirements. The only constant that might remain after matriculation into medical school is the mentor relationship; a Scholar might stay in contact with the mentor they spent time with before medical school.

The route to returning to rural medicine is long, and it all takes place after fulfilling the requirements for the SRH program. The mentor plays a significant role in developing the Scholar during their premedical years and potentially throughout medical school. This qualitative study suggests that understanding the mentee experience can help to understand what happens in the foundational years before medical school for students enrolled in rural pipeline programs. The goal of the research was to understand past Scholars' mentee experiences in the SRH program. However, the data also helped to understand the Scholar-mentor relationship before and after the SRH program.

Problem Statement

This dissertation examines the mentee experience in the SRH program. The Office of Admissions has never formally evaluated the mentoring experiences of the SRH program. SRH program research has focused mainly on the program participants' practice location outcomes and less on the program itself or program requirements. Data on Scholar mentoring experiences can have a long-lasting impact on the future of the program. There is a void in mentoring research on rural pipeline programs and rural mentors' related experiences (Bourke et al., 2014). Plenty of evidence supports the importance of mentoring relationships in student success (Akinla

et al., 2018; Cross et al., 2019; Hagler, 2018; Phillips, 2018), but a gap exists in the literature on the influence a mentor can have on a student from a rural background pursuing or preparing for medical school.

The SRH program's leadership is going through a transition, and the study data will shape future mentoring requirements. The study will help shape the program's future, how mentors are selected and trained, as well as possible mentoring outcomes. The study's results can potentially impact the mentoring aspect of the SRH program and how mentoring could impact the future physician workforce of Kansas. There is a lacuna in the literature about the role a mentor can play in rural pipeline programs, especially in the SRH program. This project can help expand the current research on the role of rural physicians in mentoring.

<div align="center">

Importance of the Study

</div>

This dissertation study provides information about the mentee experience that could influence future mentoring relationships in the SRH program. The responses received helped me understand the mentee experience and can help to shape future requirements in the program. Evaluation of the impact of mentoring can help to shape the SRH program's future, how mentors are selected, mentor and mentee training, and the outcomes of the mentoring aspect of the SRH program. The study impacts the SRH program and research on the importance of premedical mentoring in physician shortage areas. There is a gap in the literature about the role a mentor can play in rural premedical students, and this project helps expand the current research on mentoring.

The research adds qualitative literature on mentoring in medicine, pipeline program mentoring, and the mentoring experience for underrepresented students in medicine. Additional research on support for premedical students from underrepresented areas is needed. Rural

students are a population of underrepresented students that are often not included in research studies. The research offers insight into how rural counties can encourage students to consider careers as physicians.

The research surrounding rural medical student pipeline programs is usually state-specific or focused on one rural initiative program at an individual medical school (Eidson-Ton et al., 2016; Rabinowitz et al., 2008; Wendling et al., 2016). This dissertation study offers insight into the rural pipeline program in Kansas. It could help the Office of Admissions learn more about support for the mentor relationship experienced in the SRH program. The data could one day shape additional research on future medical practice locations based on the mentor experience.

The SRH program is the pathway into KU SOM that provides the most rural matriculants. Outside of the SRH program, few applicants matriculate into the Medical School from the early decision application program or the regular decision process. The KU SOM has no control over external factors impacting rural locations, like Medicaid. It has no control over what factors might influence a student not to practice in a rural area. However, the KU SOM can increase the number of students admitted into the medical school that have a higher likelihood of practicing medicine in a rural community, and it can provide support to that potential future rural physician.

The SRH program continues to grow applications for the program and interest in this type of a pipeline into medical school. The 2019 class of Scholars, who upon completion of the program will matriculate in 2021, was the largest cohort. The program admitted a total of 26 students. As the program grows, more mentors will be needed, and the dissertation will shape the guidance given to new mentors and mentees. A qualitative study can give better insight into what students from rural backgrounds in the SRH program see and experience as mentees. The

interviews help us to gain better insight into what Scholars need from a mentor for medical school motivation and preparation. The research on mentee experiences will help SRH program administrators create a more productive mentoring experience. Knowledge of the mentoring experience is needed to understand the mentoring requirement of the SRH program.

Organization of the Study

In the following chapter, I review the literature that is relevant to the study and discussion. The literature on mentoring, rural health practice determinants, and supporting underrepresented groups in medicine were all used as a part of the study. Chapter Three describes the study methodology, institutional setting, and methods guiding the data collection and analysis. Chapter Four includes a presentation of the results and themes found in the data. Finally, Chapter Five includes a discussion of the study's findings. The findings connect the current literature on mentoring and rural health scholarship to the results in the data. The discussion concludes with implications that lead to recommendations for practice and the future of mentoring relationships in the SRH program. The final chapter includes suggestions for future research on mentoring and the mentee experience.

Chapter 2: Literature Review

This study explores the mentee experience in the SRH program. The second chapter includes an overview of relevant research that provided the study's foundational knowledge and research. I first begin by presenting literature that explains why rural medical students need pipeline programs. This background includes information on the increasing physician shortage and what caused the physician shortage. It describes how there has been an evolution of medical schools to provide an educational model that gives better support to urban populations over rural populations, and it highlights that most medical schools are in urban locations. The physician shortage literature is followed by literature on rural medical practice location determinants. Understanding the primary determinants of rural medical practice location gives a better understanding of the ultimate purpose of the SRH program and guidance on how a mentor relationship could exist in a rural community. Finally, this chapter focuses on mentor literature. Mentor literature is at the heart of this research, but the earlier sections of this chapter help the readers understand the mentoring relationship. The following literature guides the research, research questions, and themes found in the data.

Background on the Physician Shortage

The U.S. has been and will be facing an increasing physician shortage (Bazemore et al., 2019; Corso et al., 2018). Due to this shortage, many programs, like the Scholars in Rural Health program (SRH) at the University of Kansas School of Medicine (KU SOM), have been created. Background of the shortage is needed to understand the role of the SRH program. Understanding the current physician shortage background on a national and state level is beneficial to know how the SRH program serves Kansas. The physician shortage could lead to barriers in finding

mentors to participate in the SRH program or barriers to the mentors available to mentor in Kansas. This issue needs to be understood.

Changing medical education models contributed to the shortage of physicians in the U.S. Medical education has gone through many changes over the past few decades, increasing the requirements to become a physician (Finnerty et al., 2010; Moehling et al., 2018). The AAMC expects that by 2032 the physician demand will exceed the supply by a range of 46,900 - 121,900 (AAMC, 2019b). The lower end of the range represents a count that includes non-physician care in updated care delivery patterns. As the average age of the population increases, the demand for specialty physicians grows, which has been a reason for the medical curriculum changing in the past decade (Corso et al., 2018; Moehling et al., 2018).

The physician shortage is one of the many factors that have had a devastating impact on rural areas. Kansas has not expanded Medicaid (Goldman & Sommers, 2018), and many rural hospitals have closed or consolidated (Thomas et al., 2016; Wishner et al., 2016). Both Medicaid and the trend of rural hospital closures have significant impacts on residents of rural communities accessing health care services (Wishner et al., 2016). Meanwhile, rural populations are experiencing a rise in chronic disease, higher mortality rates, less preventive medical care, and a lack of obstetric services (Shipman et al., 2019). These are just a few of the more significant issues facing rural populations, and the issue of an aging rural physician workforce does not help any of the health issues (Shipman et al., 2019). The health care statistics of rural populations compared to urban populations are disproportionate. Residents of rural areas have poorer health, fewer public transportation options, fewer resources, and weaker access to health services than do residents of urban areas (Douthit et al., 2015; Shipman et al., 2019). Rural areas

also have difficulties attracting and retaining physicians (Douthit et al., 2015; Savageau et al., 2016).

National Background of the Physician Shortage

Understanding the background of the physician shortage on a national level helps place Kansas's situation into context. It is essential to understand the national response to the physician shortage because many national efforts have impacted Kansas' efforts. As the shortage grows nationally, it limits the ability of Kansas to attract physicians from other states. Understanding the national issue highlights the importance of keeping physicians in Kansas through a pipeline program like the SRH program. Physicians recruited from outside of the state by monetary means often do not become long-term residents (Sempowski, 2004). The SRH mentor experience could look different if placed with a physician mentor familiar with Kansas rather than a mentor who was recruited to Kansas to practice medicine.

The federal government has historically played a significant role in providing funds to train medical doctors (Reynolds, 2008). Formed in 1847, The American Medical Association (AMA) was the first specialized accrediting group for the medical profession (Cohen & Kisker, 2010). The AMA made strides in the twentieth century to regulate entrance into medical schools and establish graduation requirements. Regulation from the AMA came mostly from a 1910 report asking for federal and state assistance in medical education standards (Finnerty et al., 2010). Abraham Flexner's Report (1910), "Medical Education in the United States and Canada," surveyed the 155 medical schools that then existed to make recommendations on the future of medicine (Finnerty et al., 2010). Flexner recommended creating a new model of medical education (Beck, 2004)).

The 20 years after the Flexner Report saw reform and increased regulations on curriculum, standardization, and student requirements at medical schools (Finnerty et al., 2010). From 1900 to 1920, many medical schools located in large cities closed (Mayers & Harrison, 1924). However, the new regulations also hurt regional medical programs that could not meet the new standards, leaving many rural areas without a medical training location (Sullivan & Suez Mittman, 2010). The AMA regulations had a significant impact on the Midwest. For example, at the time, Kansas saw a decrease in the number of physicians practicing in the state (Murphy & Spencer, 1951). The patient population needed to support medical education requirements limited the ability of regional medical schools in rural areas to meet accreditation standards. The regulations resulted in 76 medical schools receiving accreditation in the US, but they lacked the ability to educate students as the rate of population growth increased between 1925 and 1950 (Finnerty et al., 2010).

The period after World War II saw significant changes and increases in medical education. Regulations for accreditation increased, which in turn increased the admission requirements for medical schools. Using AMA data in 1970, Feldman and Scheffler (1978) overestimated the number of medical students entering medical practice along with those staying in practice until a later retirement date. This prediction for physicians joining the workforce underestimated the physician workforce's needs and gave no cause for concern in physicians' supply (Institute of Medicine (US) Division of Health Sciences Policy, 1983). The AMA continued to regulate the entrance requirements into medical school and accreditation standards under the assumption that the current policies kept up with the current physician demands (Mitka, 2007). *The Nation's Physician Workforce: Options for Balancing Supply and Requirements*, a 1996 report, called for reducing the number of physicians-in-training (Mitka,

2007). The report suggested limiting medical school enrollment and cutting funding for post-medical graduate education. Changes to medical school enrollment were motivated by the increase in the number of physicians, which was greater than the population rate between 1970 and 1992 (Mitka, 2007). Healthcare expenses and quality did not increase at the same rate (Mitka, 2007). The Council on Graduate Medical Education (COGME) also backed the recommendations for a decrease in physicians and increased the percentage of generalists practicing medicine (Dalen & Ryan, 2016). Congress had created the COGME to help monitor the physician workforce and make recommendations for meeting the nation's healthcare needs (Dalen & Ryan, 2016). The COGME reversed its recommendations to decrease physicians in 2005 (Dalen & Ryan, 2016). At that time, the COGME recommended increasing enrollment by 15% in both allopathic and osteopathic medical schools.

To address the shortage in physicians' practice in underserved areas, the AAMC suggested an increase in the size of medical school classes; however, this increase has led to a decrease in students reporting an interest in practicing in a small town or rural location (Shipman et al., 2013). In 2006, the AAMC charged medical schools to increase enrollment by 30% to meet the physician workforce need (Dalen & Ryan, 2016). This increase in medical enrollment impacted the type of students that medical schools began to admit. The rural population applying to medical schools is in decline (AAMC, 2019c; Shipman et al., 2019), and many efforts to fix the physician shortage focus on short term solutions to a long-term problem (Parlier et al., 2018; Sempowski, 2004; Shipman et al., 2019). Less than .5% of the national 2017 matriculating medical school class included students from rural areas, and rural applicants have declined eighteen percent over the last decade (Shipman et al., 2019). Pipeline programs can help to increase the rural applicant pool and thus address this problem (Shipman et al., 2019). The lack

18

of rural students enrolling in medical school (Shipman et al., 2019) signifies the SRH program's importance.

Kansas Background

It is essential to understand the background of Kansas and the goals of the KU SOM. As the KU SOM continues to try and train physicians for Kansas, it is essential to know what prompted the creation of programs like the SRH. The federal government and national trends play a significant role in the training of physicians in Kansas. Kansas reflects larger national healthcare trends. As of 2019, Kansas had 6,627 active physicians in the workforce (Kansas Physician Workforce Profile, 2019). The ratio of physicians in Kansas is 227.6 physicians for every 100,000 residents, which is below the national state median ratio of 257.9 physicians for every 100,000 residents. Kansas ranks 40th among states for active physicians practicing in the state workforce. There are 80.5 active patient care primary care physicians per 100,000 residents, while the national state median is 82.5. The definition of "primary care" can often include specialties that would not commonly be practiced in a rural location. If the physician workforce is viewed as family medicine only, then Kansas has 1,434 family medicine/general practice physicians (AAMC, 2019a).

In 2018, the Kansas physician workforce had 2,204 women, and 30.8% of the workforce was age 60 or older (AAMC, 2019a). It is critical to understand how Kansas has arrived at the current state of having a physician shortage because those factors inform the shape of the SRH program. It is essential to understand Kansas's medical workforce because the SRH program seeks to address the state's physician workforce needs in rural communities. Primary care physicians provide most medical care in rural communities and underserved populations (Bennett & Phillips, 2010). Creating more primary care physicians was why the SRH program

was initially called Scholars in Primary Care. There was a belief that increasing the number of primary care physicians in Kansas would address the primary care physician shortage in rural areas.

To better understand the SRH program, there are two significant historical points in the KU SOM that need to be understood. The first is the changes that were made to the medical school while Dr. Franklin Murphy was dean from 1948 – 1951, and the second is the creation of the three separate campuses. The University of Kansas Medical School began making significant changes to medical education under the leadership of Dean Franklin Murphy beginning in 1948. Dean Murphy stepped into his role when the nation was closing medical schools and tightening accreditation standards. Dr. Murphy is best known for the Kansas Plan, or the Murphy Plan, which was initially House Bill No. 9: Rural Health Program for Kansas. The bill focused on providing increased funding to build buildings at the University of Kansas hospitals in Kansas City, Kansas (Rural Health Program for Kansas, 1949). The bill allotted a total of $3,862,560 towards eight different construction goals at the Medical Center in 1949 (Rural Health Program for Kansas, 1949) that would allow an increase in class size to meet the growing physician needs of the state. The bill was specific to the needs of Kansas. It states that "In the past forty-two years, Kansas, with an increase of twenty-five percent in population, has had a decrease of thirty percent in the number of practicing physicians, mainly at the expense of rural communities" (Rural Health Program for Kansas, 1949).

The bill gave support to the Kansas State Board of Health, the Kansas Medical Society and its committee on rural health, and officials of the Kansas Medical School study to work together to better the Kansas people. These foundational groups developed the Rural Health Program for Kansas (1949) to:

remedying the situation as follow (1) Increased production of doctors, nurses and medical

technicians of all types in order to make up for an underproduction over the past thirty

years as well as to take care of normal yearly loss of practicing physicians through

retirement and death, (2) provision for adequate office space and equipment for doctors in

rural areas so that an adequate percentage of the young doctors will go to the places

where most needed, that is, the rural areas, and (3) the provision of post-graduate medical

education for doctors who settle in rural areas of the state, that is to be accomplished by

the giving of short refresher courses at the University of Kansas hospitals (p. 1).

The Rural Health Program for Kansas created an environment for Kansans to solve the state's

workforce issues. The plan was instrumental in promoting rural health and developing programs

to support and increase rural physicians.

The campus location of medical schools can provide opportunities for medical students to

gain exposure in rural areas. The Michigan State University College of Human Medicine studied

all graduates from 1972 - 2006 to find practice locations for those practicing primary care or

located in a high-need specialty (Phillips et al., 2018). Phillips et al. (2018) found that 20%

practiced medicine within 50 miles of the medical school campus they attended, and the location

of the campus impacted the type of community in which a medical student would then practice

medicine (Phillips et al., 2018). Training location is a primary indicator of future practice

location (Crump et al., 2013; Patterson et al., 2019; Phillips et al., 2009).

In 2011, the KU SOM opened a rural, regional campus in Salina and added an option for

students to receive all four years of their education in Wichita; this was done as a way to

continue solving the state's workforce issues. Due to its location, the SRH program is a

significant pipeline for the Salina and Wichita campuses. The mission of educating medical

students in a rural environment is a primary goal of the Salina campus. A medical school located in a rural setting influences future practice locations, but very few medical schools are in rural settings (Patterson et al., 2019). During the SRH program, students spend time on the Wichita and Salina campuses. The Wichita campus hosts the SRH interviews and the SRH annual meeting, and the Salina campus hosts the orientation. Understanding the KU SOM's goals and the thinking behind each campus's location helps to understand why the SRH program exists. The rural mentoring component needs to align with the goals of KU SOM to provide healthcare to all of Kansas. The mentee experience needs to help a student to better understand the purpose of the KU SOM.

Determinants of Rural Health

Rural medical students are at the heart of this study and knowing the background of the physician shortage helps to understand rural medical students. Although final practice location is not the study's aim, understanding what factors encourage the choice to practice in a rural location helps to understand the characteristics of the SRH program and the mentors' characteristics for the program. Rural practice determinants help understand the mentors' background willingness to give their time to mentor the participants in the SRH program. Understanding what encourages a physician to practice rural medicine helps understand the SRH program's mentoring dynamic.

The primary factor that leads a physician to practice in a rural location is that the physician grew up in a rural community or had significant exposure to a rural community during their lifetime (Goodfellow et al., 2016; Laven & Wilkinson, 2003; Patterson et al., 2019). Other factors such as finances, specialty choice, personal characteristics, and training location can also contribute to a physician choosing to open a rural practice (McGrail et al., 2011; Patterson et al.,

22

2019; Rabinowitz et al., 2008; Sempowski, 2004). The research on rural health practice

originated as research on primary care. Emphasis was placed on rural location primary care in

the 1990s when the shortage of rural physicians became a problem (Rabinowitz et al., 2008).

Articles researching rural health physicians tend to focus on rural practice determinants

and are often quantitative, with a lack of understanding of the personal narrative for the

motivation to practice in a rural area (Eley et al., 2015; Hudson & May, 2015). Rural health

determinant scholarship is mostly related to hometown and likelihood to practice rural medicine,

but if a student adds a rural preceptor location in addition to their background, then the

likelihood of a student going into rural practice increases (Patterson et al., 2019; Ranmuthugala

et al., 2007; Walker et al., 2012). Hometown is a primary predictor of final practice location

(Goodfellow et al., 2016; Hudson & May, 2015; Wade et al., 2007). The present study does not

focus on SRH participants returning to rural practice, but producing rural physicians is a central

goal of the SRH program. Due to this goal, Scholars encompass many of the factors that would

lead someone to practice medicine in a rural location. Understanding the determinants of rural

practice helps to understand the study participants and the characteristics of the mentors and

mentees.

Laven and Wilkinson (2003) completed a systematic review of scholarship from 1973 to

2001 that looked at the association of rural background and rural medicine practice. In the 12

studies reviewed, ten of the studies found having a rural background to be a primary rural

practice indicator (Laven & Wilkinson, 2003). Although the literature primarily acknowledges

"rural background" as the leading motivator for rural medical practice (Halaas et al., 2008;

Henry et al., 2009; Rabinowitz, 2001), the term "rural" is widely used but hard to define (Laven

& Wilkinson, 2003). Many factors outside of hometown location could encourage the choice of

rural practice location, but often the literature focuses on hometown and high school location. Another factor is medical school location. Medical school location impacts residency and practice location (Rosenblatt, 1992). Participants in the SRH programs receive early admission to the KU SOM and can choose any of the three campuses for their medical education. The Salina medical school campus emphasizes rural health, but a Scholar can decide which campus to attend.

A study on medical students from rural backgrounds in New Mexico found that students were more likely to practice in a rural area if they were originally from a rural area and felt that loan forgiveness programs supported their recruitment to rural areas (Daniels et al., 2007). Loan forgiveness programs are usually an attempt by the state to encourage rural practice locations (Rural Health Program for Kansas, 1949). Financial incentives play an increasingly important role in where a physician chooses to practice. Many of the SRH program students apply for the Kansas Medical School Loan Forgiveness Program (KMSL). KMSL is a state-funded scholarship program that requires a year of service in rural Kansas for each year the loan is received. The commitment to KMSL is a decision that a student makes before beginning medical school, and potentially at a time where a premedical student has had little exposure to the opportunities in medicine in rural areas.

Specialty Choice/Residency

Hometown location is not the only factor that plays a significant role in a student practicing in a rural area. Hometown location is a primary factor, but the location of residency, or Graduate Medical Education (GME), plays a significant role in producing rural physicians (Crump et al., 2013; Patterson et al., 2019). Spending significant time in a rural community is a primary indicator of rural practice (Goodfellow et al., 2016; Laven & Wilkinson, 2003).

Physicians are most likely to practice medicine in the state in which they completed residency training (U.S. Department of Health and Human Services, Health Resources and Services Administration, 2016).

Residency programs located in rural areas would help solve rural physician shortages and increase access to mentors (Eidson-Ton et al., 2016; Patterson et al., 2019), but residency programs are federally funded. Residency programs often lack oversight on how each residency location impacts the physician workforce. The federal funding models often leave smaller hospitals and rural-located hospitals at an economic disadvantage that generates challenges for rural residency programs (Chen, Petterson, et al., 2013; Patterson et al., 2019). In a 2013 study on redistribution of GME positions, out of the 304 hospitals with residency programs, only 12 were in a rural location (Chen, Petterson, et al., 2013). A rural residency location does increase the rural physician workforce. However, only about 5% of GME graduates work in rural areas (Chen, Xierali, et al., 2013; Parlier et al., 2018; Patterson et al., 2019).

Rural physicians practice specialties in high need and provide access to care in a rural community (Douthit et al., 2015; Mitka, 2007). These specialties are considered full scope medicine due to the lack of specializing physicians in rural areas. Rural primary care physicians need more trauma management knowledge and skills than do urban primary care physicians (Parlier et al., 2018). A rural community would not support a physician specialist's caseload, so a physician practicing internal medicine, family medicine, or pediatrics is most commonly found in rural communities (Henry et al., 2009; Parlier et al., 2018; Rosenblatt, 1992). Since 2011 there has been a decrease in the number of medical students matching into primary care (Jolly et al., 2013). Wendling et al. (2016), based on the Michigan State University Rural Physician Program, discovered that rural program characteristics could predict rural physician placement. The

program characteristics in the Michigan State University Rural Physician program included targeting students interested in rural primary care and training these students in a rural region. Wendling et al. (2016) found that the rural community where the program was based benefitted most from the program.

Research on specialty choice can be misleading. Research on primary care frequently includes internal medicine, family medicine, and pediatrics. The larger group of specialties limits research value because specialties' broader fields do not act as one group (Lawson & Hoban, 2003). However, research only focused on one primary care specialty is difficult to generalize to other specialties within the broader field of primary care (Jeffe et al., 2010).

Geography is a significant predictor of medical practice location (Goodfellow et al., 2016). A review of PCPs in rural areas found that 56% of family medicine residents practice within 100 miles of their completed residency training. Physicians who self-identified as underrepresented in medicine were more likely to practice in high-need areas (Goodfellow et al., 2016). Residents located at Federally Qualified Health Center-aligned Teaching Health Centers are more likely to practice medicine in rural or underserved areas (Levin et al., 2019). However, most residency programs are not located in an FQHC but rather at a private hospital. Only 6% of family medicine residences, 1% of internal medicine sites, and 2% of general surgery sites are rural (Blanchard et al., 2016).

Scholars have not entered residency, but mentor practice and residency location could influence the Scholar experience. A mentor who attended a residency program in Kansas might be more likely to talk about residency training during the mentoring experience. The choice of mentor might also impact what a Scholar can experience during the SRH program. Background

knowledge of specialty choice and residency location is vital for understanding both the SRH

program's long-term goals and the experience of the mentors in the program.

Characteristics of Medical Student

Characteristics of the medical student can also predict future practice locations and are

essential to consider when forming mentoring relationships. Personal qualities that exist in a

student correlate with future practice intentions. Barr et al. (2005) researched global imbalances

in the health workforce. The research focused on international medical schools but found that

students who had both intrinsic motivation and a motivation to help the poor, were more likely to

work in rural areas (Barr et al., 2005). This type of motivation was more commonly found in

women in their study. Students who display other-oriented empathy characteristics tend to

practice in rural areas (Eley et al., 2015).

Although female students had the characteristic of intrinsic motivation (Eley et al., 2015),

female medical students are also less likely to practice in rural areas (McGrail et al., 2017),

which is significant because most rural scholars are female. Women do not always favor

specialties typical in rural areas. Women tend to prefer specialties like obstetrics/gynecology and

pediatrics (Alers et al., 2014), which are specialties that are typical in metropolitan areas.

Women and those born in metropolitan areas are more likely to leave rural practice (McGrail et

al., 2017).

The Scholar's Program participants are majority female. Former Scholars who are female

might have found different experiences to have been meaningful than did male Scholars. Female

Scholars might also have different reasons for being motivated to work in medicine or value

different characteristics in a mentor than do males in the SRH program. Intrinsic motivation to

practice medicine is a quality that mentees might bring up as a positive characteristic of their

mentor, or they may feel that mentoring reinforced the mentee's intrinsic motivation. The literature on potential rural physicians' characteristics helps to understand mentee goals and the qualities mentees like in their mentors. The literature on rural physician characteristics helps to understand the mentee-mentor relationship.

Exposure to the Community

Choice of medicine as a career requires early exposure. It is a long road to become a physician, and admission to medical school is competitive. The health field is a career choice that requires early exposure, and early exposure increases the likelihood that a student might enter the health care field (Becker et al., 2017; Cervantes et al., 2014; Derck et al., 2016; Holden et al., 2014). Early exposure is also essential for rural and female premedical students in primary care (Brooks et al., 2014; Goodfellow et al., 2016; Savageau et al., 2016).

Counties that are not facing a significant health professional shortage (which are typically urban), have better resources to offer to the community (McGrail et al., 2017). Resources can include health care facilities, a strong community, and schools, which lead to better health outcomes (Peterson & Litaker, 2010). A study by Peterson and Litaker (2010) highlighted how counties with fewer resources also lacked the programs to give students early exposure to careers in medicine. The counties with poor social determinants of health also lacked a significant sample size for the study. The results were inconclusive, but the study showed a need to continue to gather more substantial sample size data on underserved counties and their ability to give younger populations exposure to future careers in health care (Peterson & Litaker, 2010). The lack of data shows that additional research on pipeline programs is needed on how effective a pipeline program can be for early exposure to health care.

Rural counties that lack a hospital have a higher percentage of physicians leaving to work elsewhere (McGrail et al., 2017). Having a hospital in the community was also found to be an attractive factor in rural recruitment. In addition to having a hospital, rural communities with a larger affluent, educated, and aging population were associated with a more abundant physician supply (McGrail et al., 2017). Workforce supply in rural communities is difficult to study because many rural locations are adjacent to metropolitan areas. In these settings, a physician could remain in a metropolitan area but commute to a rural location. Understanding a community's unique characteristics was useful in the recruitment and retention of physicians in some rural regions. It is unlikely that a community can increase attractiveness in many areas; unattractive communities will have to work harder to recruit physicians.

Familiarity with the literature on rural physicians and medical students helps to understand mentoring in the SRH program. The literature on rural determinants helps to understand the SRH program's goals and the goals of the mentoring relationship. Mentees and mentors have characteristics that motivate the individual for a potential career in rural medicine. The literature on the factors that encourage a physician to practice medicine in a rural and often underserved community is foundational for understanding the mentoring relationship.

Mentoring

The literature on mentoring used in this literature review focused primarily on mentoring and advising within the context of health care and medicine. When relevant, scholarship outside of health care helped to add depth to the topic of mentoring. Literature outside the scope of medicine was often from private business literature. Business and finance have literature on mentoring that is not only limited to examining the workplace. It is essential to first define *mentoring* before getting too deep into the mentoring scholarship. After defining mentoring, this

section will look more into the background of mentoring in academic medical centers, mentoring programs for URM students, mentoring in pipeline programs, challenges to mentoring, and outcomes of mentor programs.

Defining Mentoring

Mentoring can be complicated to define precisely, but the overall concept is easy to understand. The term *mentoring* dates back to mid-eighth century Greece, and Mentor was Telemachus's advisor in Homer's *Odyssey* (Nimmons et al., 2019). Mentoring was a term used to define the principle of passing knowledge and wisdom to individuals with less experience (Kosoko-Lasaki et al., 2006). Socrates, Plato, and Aristotle are great examples of first mentors. Mentoring is a role that involves being a teacher, coach, counselor, and supervisor all at once (Keshavan & Tandon, 2015). Mentors can guide in many ways in the role of mentor.

Throughout the literature, different mentoring models and definitions of mentoring exist, but each can fit into one of two categories: mentoring as formal or informal experience. A formal mentoring experience is a relationship established between a mentor and mentee (Cox, 2005; Yip & Kram, 2017). The mentee is paired with a more experienced individual to serve as a mentor. An informal mentoring relationship occurs naturally without a forced pairing (Cox, 2005; Eby & Allen, 2008). The SRH program is a formal mentoring model.

Evaluating Mentoring

Kashiwagi et al. (2013) performed a systematic review of physicians' mentoring programs and found a lack of a standard metric to evaluate mentoring in academic medicine. Academic medicine lacks agreed-upon outcomes and metrics to measure mentoring success (Kashiwagi et al., 2013). The lack of a standard definition, or model of evaluation, limits mentor research's ability to be generalized. De Janasz and Sullivan (2004) studied the changing

30

environment in academic mentoring. Mentoring among professors moved from a traditional mentor-mentee environment to a model where professors had multiple mentors throughout their careers (Cox, 2005). The study looked at how career competencies impacted mentoring. The study was unable to be generalized or compared to similar findings due to the lack of a clear definition of mentoring in academic and non-academic organizations (de Janasz & Sullivan, 2004). Mentoring is often confusing because it has no consensus definition (Berk et al., 2005).

Berk (2005) found that researchers cited mentorship in academic medical research as impactful, but mentoring programs used various mentoring definitions. There was no standard definition of mentoring in academic medicine. Berk (2005) tried to create mentor constructs that could be applied more practically. The mentor constructs were commitment responsibilities for mentors. The constructs, to name a few, include providing resources, experience, professional guidance, encouragement, feedback, respect, and acknowledgment to mentees (Berk et al., 2005). Without a standard definition or similar way to measure mentoring effectiveness, it is difficult to claim that mentorship is a best practice (Berk et al., 2005) for academic medicine improvement. Many mentor programs operate under the assumption that mentoring is beneficial for students and faculty but do not provide evidence to support that claim (Berk et al., 2005). Mentoring programs often establish clear goals and expectations. The SRH program has vague goals for the mentoring aspect of the training it provides, making it challenging to evaluate mentoring in that context. Going forward, I hope to use the reports on past mentee experiences presented here to establish more explicit goals for mentoring in the SRH program to produce better evaluation procedures in future years.

Goals of Mentoring and Mentoring Program Expectations

Mentoring programs work when goals meet the expectations of the program. An essential early review of mentoring literature found five key elements that existed when quality mentoring occurred (Jacobi, 1991).

1. Mentoring should help the mentee achieve short- and long-term goals.

2. Mentoring should include role modeling and career development for the mentee.

3. Mentoring should benefit both the mentee and mentor.

4. Mentoring relationships should be indirect interactions.

5. Mentors should have more experience than the mentee.

Keshavan and Tandon (2015) found what they called the six commandments of mentoring to have a successful mentoring experience. The six commandments, all words starting with *C*, include core competencies, chemistry in the relationship, common goals, commitment to mentoring, communication, and clear expectations (Keshavan & Tandon, 2015). It was important for programs to have a clear purpose and some form of each of the six C's.

A national survey of 60 mentors and mentees involved in a speed mentoring program found that mentoring relationships need common goals, and the mentoring program needs clear aspirations and expectations (Cellini et al., 2017). Speed mentoring is a form of mentoring that has become increasingly popular at medical specialty conferences. There is a likelihood that medical students will participate in speed mentoring at some point in their careers. Speed mentoring is typical at national medical events, pairing mentees and mentors together in speed dating (Britt et al., 2017). A style of speed mentoring could be used in the SRH program to help match mentees with mentors during the program orientation or meet other mentors during the Scholars annual meeting. Cellini et al. (2017) developed an Outcome Approach Model to

improve mentoring programs. Participants received the following objectives: interpersonal networking and career discussions; short-term goal setting; developing strategies to reach short-term goals and partnerships on research projects. Mentors and mentees agreed that it was important that the mentee's goals were clear, and their mentor was willing to be available to help accomplish those goals.

The goals and outcomes of mentoring vary based on the program, but medical school mentoring programs have similar objectives. Mentoring programs aim to develop professionalism and personal growth, increase interest in specialties, increase interest in academic medicine, and provide career advice (Frei et al., 2010). Mentor programs are also significant for increasing the applicant pool from underrepresented groups in medicine and for widening access to medical school (Nimmons et al., 2019). The SRH program currently does not have a clear goal or defined outcome for the mentoring hours. Scholars complete a 200-shadowing hour requirement, with no clear guidance given to the mentee. Mentors and mentees receive minimal guidance for the mentoring relationship. This study explored if past mentees had clear goals, or expectations, prior to beginning the mentoring experience in the SRH program.

The purpose of this study was to learn more about the mentee experience. I asked mentees if their mentor outlined any goals during their time as a Scholar. The literature on mentoring program goals can inform the development of reasonable aims for the SRH program based in part on what mentees have requested. Literature that addresses mentor-mentees' pairing helped understand if the mentee's goals aligned with what their mentor provided during the SRH program. The mentee response data will help shape the mentoring experience's future goals and influence future mentors' pairing.

Forming Mentor Relationships

One of the most critical factors in mentoring programs is the process of pairing a mentee to mentor. Informal mentoring occurs when a natural pairing occurs, but formal mentoring programs have no unilateral way of creating mentor relationships. Some programs allow students to select their mentors (Philip & Hendry, 2000), and in the most formal programs, mentors are assigned (Cox, 2005; Lunsford et al., 2017). The Scholars in the SRH program have input on whom they might want to have as a mentor, but ultimately the mentor decision is made for them. Input from the scholar is helpful, but it is not uncommon that a Scholar has had no previous experience with a physician in their community.

Allen et al. (2006) found that it was beneficial for mentoring participants to have input in the mentor selection process. Cox (2005) found that personality characteristics in a mentoring relationship were unnecessary if resources, like time, are invested in the match process. A connection needs to be established between the mentor and the mentee to have a successful mentoring experience. If a connection between the mentee and mentor does not exist, the mentor relationship is likely to be unsuccessful (Straus et al., 2013). Scholars often have no previous connection to their mentor.

Communication is critical in a thriving environment for a mentoring relationship. The literature suggests that formal mentoring programs establish communication frameworks. When communication frameworks exist, an established dialog will occur throughout the mentoring experience (Rivera et al., 2019). Timelines for communication and expectations are included in the communication framework and allow for consistent dialogue in the relationship (Keshavan & Tandon, 2015). A communication framework can establish clear goals from both the mentor and mentee while setting realistic expectations for the relationship.

A lesson from the Women's Health Center of Excellence mentoring programs was that their mentoring program coordinator meets individually with each interested mentor and then meets with each mentoring pair six months into the process (Kosoko-Lasaki et al., 2006). Programs that had a designated person monitoring the mentoring program or process had better success finding and retaining mentors (Kosoko-Lasaki et al., 2006).

The chemistry between the mentor and the mentee is an essential factor in the success of mentoring. A mismatched mentor relationship will often be unsuccessful (Straus et al., 2013). Before forming mentor relationships, one must assess the mentor's readiness and ability to be a positive mentor (Keshavan & Tandon, 2015). Mentors need to self-reflect on their abilities to be a potential mentor, but formal mentor programs need to provide resources to make the relationship more successful. One of the most important resources that a mentor possesses is time available for a mentoring relationship. Keshavan and Tandon (2015) mention an idea of shared mentoring when time might be lacking, or mentors are new to mentoring and lack goals, skills, or time. A shared mentoring model works in certain situations (Keshavan & Tandon, 2015).

Mentors and mentees' informal mentoring programs need resources to provide a successful experience. If mentors lack specific skillsets, training needs to be offered or required for all mentors. Mentor skillsets help to form strong mentoring relationships. A mentor with a strong skillset for mentoring could provide a better mentee experience, which would be evident in past mentee responses. In our interviews, the former mentees were asked to describe what qualities they liked and disliked about their mentor.

Training in Mentor Programs

Another essential aspect of the mentor-mentee relationship is training the mentors or mentees. In the SRH Program, mentors receive minimal guidance about the mentoring aspect, and mentees receive no formal training. The Scholars are only notified about the hour requirements and then notified who they will be spending time with as their mentor. Throughout the literature, mentoring is found to be beneficial (Nimmons et al., 2019; Straus et al., 2013; Tan et al., 2018), but mentor selection is not random in mentoring programs (Keshavan & Tandon, 2015; Nearing et al., 2020). It was essential to learn best practices from the literature review about how mentors were selected, trained, and supported throughout the mentor experience. The literature on mentor selection and training helped to make sense of the recent Scholar mentee experience. I asked the former mentees if they felt supported and what qualities they enjoyed about their mentor. In a future application of this work, the responses received about the mentee experience will be used in combination with the literature on mentor training to guide future SRH mentors.

The mentees in a 2006 study on the merits of mentoring did not report a difference in experience if their mentor had or had not participated in a mentoring training seminar (Pfund et al., 2006). This result was due to all mentees providing a favorable report of their experience. However, mentors had different responses to experiences if they had participated in a formal mentoring seminar. Kram (1983) provided a foundation for studying mentoring relationships that many mentor programs have since emulated. The original research provided by Kram (1983) outlined four phases of evolution in mentoring relationships: initiation, cultivation, separation, and redefinition. These four phases of a mentoring relationship have been expanded upon but remain a foundational start for many formal mentoring programs.

Mentoring training programs can address the initiation and cultivation of mentoring relationships. Training can help address specific competencies needed for the mentor and the mentee in the mentoring relationship's early stages. Before forming mentoring pairs, competencies can be addressed based on several paired characteristics (Clutterbuck & Lane, 2004). According to Clutterbuck and Lane (2004), five pairs of mentor characteristics exist: (1) self-awareness and behavioral awareness; (2) business/professional savvy and sense of proportion; (3) communication and conceptual modeling; (4) commitment to own learning and interest in helping others to learn; (5) relationship management and goal clarity. The mentor characteristic pairs are less nebulous than mentee competencies that could come from personal characteristics (Clutterbuck, 2005).

The generic competency that every mentor must exhibit is the ability to respond appropriately to the needs of one's mentee (Clutterbuck & Lane, 2005). Clutterbuck and Lane (2004) place paired competencies in categories based on the mentee's development stage and the relationship's development. Clutterbuck and Lane (2004) based the first three paired competencies on the relationship building stage. The pairs are focus-proactivity, respect-self-respect, listening-articulating (Clutterbuck & Lane, 2004). The mentee needs to communicate the relationship's goals, take initiative, and have the willingness to listen. Self-respect can facilitate the rise of a mentoring relationship. Self-respect often emerges throughout a mentor relationship, but relationships establish more easily if self-respect is established early in the relationship (Clutterbuck, 2005).

The second stage of the mentoring relationship is about relationship management and it has four paired competencies. The competencies include learn-teach, challenge-be challenged, open-questioning, and prepare-reflect (Clutterbuck & Lane, 2004). Mentees need to be

37

committed to the purpose of the mentoring relationship. The mentee needs to be challenged, reflect on the experience, and be honest with the mentor. Finally, the third group of competencies is in the learning/maturing stage of the relationship. The third stage also includes four pairs: acknowledge the debt-pay it forward, process awareness-process management, extrinsic and intrinsic feedback, independence-interdependence (Clutterbuck & Lane, 2004). At this stage, the mentee needs to appreciate the value of the mentor relationship and express appreciation. The mentee understands the reason for the mentoring, shows the capability to navigate situations alone, and would want to someday give back by being a mentor (Clutterbuck, 2005). This dissertation sought to understand former Scholars' mentoring experiences.

A review of over 280 dyad mentoring programs found that only 18.6% took the mentee's qualities into account when making mentor pairings (Searby, 2014). In the mentoring programs that did provide mentees with training or evaluation before mentor pairing, mentors reported subsequently feeling that their expectations had been met through the relationship. Searby (2014) found that it was also significant to train mentees to meet specific program expectations. Mentee training is not as standard as mentor training.

The University of Colorado Anschutz Medical Campus developed the Colorado Mentoring Training program (CO-Mentor) in 2010 (Nearing et al., 2020). The program focuses an equal amount of training on mentee training in mentoring relationships. Mentoring pairs participate in four separate training days spread throughout the year that focus on mentorship, self-knowledge, goal setting, communication skills, and establishing the importance of mentoring (Nearing et al., 2020). Research on the CO-Mentor program found significant growth in mentees' ability to find future mentors and increase mentorship skills.

Mentoring Models

Various mentoring models exist throughout the literature. Mentoring models vary from place to place, but it is essential to understand some of the basic models to understand mentoring in the SRH program. Rhodes (2005) put in place one of the most influential models of youth mentoring. The Rhodes (2005) model is one of the best-researched models of mentoring. The model found that mentoring influences three different pathways that are closely related. First, established supportive relationships affect the development of socioemotional mentoring. The mentor often modeled essential skills to help further develop new relationships. Second, mentors helped to develop cognitive thinking. Shared experiences, conversations with mentors, and instruction helped develop cognitive thinking. Third, mentored youth had a significant difference in identity development. As role models, mentors gave mentees new perspectives on life, provided feedback, and changed how they viewed their future (Rhodes, 2005).

A critique of the Rhodes' model is that it only focused on formal mentoring research in dyadic mentor relationships (Hagler, 2018). However, it is a model that offers an excellent foundational overview of how mentoring models can impact mentees. Formal and informal mentoring models have many similarities, but many relationships significantly differ in length, quality, and outcome (Hagler, 2018; Zimmerman et al., 2005). Although these differences exist between formal and informal mentoring, the literature primarily focuses on formal mentoring in the SRH program (which is a formal program). Informal mentoring most likely occurs outside of the SRH program's bounds, but the study only addressed mentoring within the formal program. It is essential to understand more about mentoring models that happen within bounded systems. The following information will include a more specific overview of mentoring models found in medical school mentoring, underrepresented student mentoring, and rural health mentoring.

Understanding more about mentor models will help to link the literature to responses from former Scholars about the mentee experience.

Medical School Mentoring Models

Medical schools have begun changing their academic models to accommodate structures that are more welcome to mentoring (Frosch & Goldstein, 2019; Osterberg et al., 2016). Mentoring at medical schools has historically first begun with mentor opportunities for new faculty. More recently, student mentoring models have been implemented (Tan et al., 2018). Large academic medical centers are known for mentoring models that produce research and encourage new faculty to continue producing research once hired (Hagler, 2018).

Faculty in academic medical centers are familiar with mentoring in research relationships (Phillips, 2018). A mentor will help students or younger faculty develop and conduct research experiments (Phillips, 2018). A literature review found seven common forms of mentoring in academic medicine, the dyad being the most common (Kashiwagi et al., 2013). The dyad model of mentoring is paring a mentee with a more experienced mentor. Phillips (2018) proposed a new tool, the Pursuing Personal Passion (P3) interview, to help mentors get mentees to dig deeper into a research study's motivations or a mentor relationship. Using this tool, each mentor would ask questions of their mentees in a way that is similar to goal-setting techniques.

A review of the literature on academic mentoring programs shows a need for a more consistent approach to the evaluation of programs. However, over time mentoring programs have become more structured or formal. A review study of all articles in MEDLINE in 2006 found no study showing the effectiveness of mentoring or the efficiency of mentoring in medical school programs (Buddeberg-Fischer & Herta, 2006). The study reaffirmed that mentor programs build competencies in research and professional skills. However, no study had used both short-term

and long-term methods to assess the programs (Buddeberg-Fischer & Herta, 2006). A decade

later, an additional literature review sought to find successful attributes in mentoring programs

(Kashiwagi et al., 2013). Kashiwagi et al. (2013) found that mentor programs were necessary for

professional and career growth. Successful mentor programs included seven different

components in their program: mentoring preparation, mentor committee, contracts, the pairing of

mentors and mentees, mentor activities, curricula for mentees, program funding, and

compensation. Almost another decade later and the systematic review of literature on mentoring

in academic medicine focused more on the learning environment and mentoring environment.

The academic medical centers' curriculum was transitioning to focus more on learning

environments that created mentor environments (Hee et al., 2019). The constant change in

mentoring over time reaffirms Tan et al.' s (2018) description of mentoring. Mentoring is ever-

evolving and changes based on goals, context, and the relationships between the mentor pair and

the organization sponsoring the mentoring (Tan et al., 2018). Knowing that mentoring goals can

change over time was helpful when hearing Scholars describe their goals throughout the SRH

program.

Mentoring Models for Women in Medicine

In medicine, there is a disparity between male and female physicians. As medical schools

have begun to admit a more significant portion of women, scholarship on supporting women

professionals has increased. The gender disparity in medical school changed in 2018 when

enrollment in medical school was majority female (AAMC, 2019c), but gender disparities in

specialties still exist (Faucett et al., 2017). Formal mentor programs need to expand to include

more women, and research has shown that men and women both benefit from formal mentor

relationships (O'Brien et al., 2010). However, mentoring happens with males more than females, and mentoring for females often includes a male mentor (O'Brien et al., 2010).

In medicine, there is a disparity between male and female physicians. As medical schools have begun to admit more women, scholarship on supporting women professionals has increased. Many of the Scholars are women, so it is appropriate to include scholarship about women in the physician workforce in this study. Women are also less likely to practice medicine in a rural location (Rabinowitz, 2001), and this could be due to a lack of representation in rural physicians. Similarities found in the scholarship for supporting women, including providing a mentor, could help to understand the role a female Scholar's mentor played in her career development. Mentors help women gain leadership positions, authority, or power and advance their careers (Farkas et al., 2019; Shapirio et al., 1978).

A study by O'Brien et al. (2010) addressed the social psychology surrounding mentor gender relationships in business. Gender differences in the mentor relationship create conflicting data, but when the mentor pair has a gendered difference, there is a difference in the mentor experience. Gender roles influenced behaviors in the mentor relationship, mainly due to more men serving as mentors. Women were found to be nurturing and compassionate in the mentor relationship and provided more psychosocial support. Male mentors received more career development than their female counterparts (O'Brien et al., 2010).

There is a lack of studies that have addressed differences in mentoring behaviors in relation to the mentee's gender. Mentoring in medical specialties has found that same-sex mentoring benefits females (Faucett et al., 2017). However, gender mentorship opportunities in medicine are limited, especially in certain specialties like orthopedic surgery. Orthopedic surgery is a specialty that has 14% representation by women among all faculty and residents (O'Connor,

2016). It is possible to alter career direction if the same gendered mentors are available, and representation is essential in the early stages of career direction. The SRH program is primarily female, but mentors are primarily male. Representation in specific physician careers might not always be available for female Scholars.

Women who have had mentors find greater career satisfaction, but more than half of women in academic medicine do not have a mentor (Levinson et al., 1991; Vasquez & Pandya, 2020). Similarities found in the scholarship for how to best support women, including providing a mentor, would help analyze the role a female Scholar's mentor played in her career development. Mentors help women gain positions of leadership, authority, or power (O'Connor, 2016).

One mentoring model successful for educational attainment was a natural mentor model (Hagler, 2018). A natural mentor model is a one-on-one mentoring experience that is an unforced relationship. In the SRH program, Scholars can request a specific mentor. However, the mentor assigned might not be whom the Scholar requested. Female Scholars might experience more natural mentoring models if looking for a mentor that is of the same gender. Past scholars assigned a different gender mentor could seek additional physicians of the same gender for advice or shadowing experiences.

Mentoring Models in Rural Medicine

Mentoring models specific to rural medicine are uncommon. One of the most cited models for rural medical mentoring is a 2014 study by Bourke et al. Bourke et al. (2014) developed four mentoring models as a rural workforce retention strategy. The authors identify that much of the research on the issue of rural health focuses on remuneration and increasing the number of rural physicians; little has focused on supporting the professionalism of physicians

working in rural areas. Mentoring is one way to recruit and retain rural physicians. Rural physicians occasionally participate in informal mentoring, but a formal mentoring program can help the rural physician population.

A literature review on mentoring rural and remote health care professionals resulted in four models of mentoring (Bourke et al., 2014). The four models include a cloning model, a nurturing model, a friendship model, and an apprenticeship model. A *cloning model* produces a clone of the mentor. It is a model that does not allow for individual growth, reflection, or changes in medical practice styles. A *nurturing model* is an open environment that provides a safe process for facilitating learning. The nurturing model is not ideal in a health care system where hierarchy and dependence are needed. A *friendship model* views the mentor-mentee relationship as equal, with a reciprocal process of support. There is potential for the relationship to become unprofessional due to the structure of the friendship model. An *apprenticeship model* is a hierarchy mentor model between a senior professional mentor and a junior colleague. The apprenticeship model has characteristics of the cloning, nurturing, and friendship models (Bourke et al., 2014).

This literature review found that in rural locations nurturing, friendship, and apprenticeship models worked the best, and aspects of rural practice encourage mentoring (Bourke et al., 2014). Rural settings allow interprofessional teamwork due to the smaller settings so that relationships can be more in-depth in the more intimate settings. Fewer health professionals practice in rural regions, which results in a higher need for healthy mentor relationships. In a rural community, the line often blurs between a physician's professional and personal roles, so a mentor relationship is beneficial for both professional and career support.

Technology has also allowed for a better connection between mentors and has allowed mentors to offer support without being physically present.

However, rural locations create barriers to mentoring (Rivera et al., 2019; Straus et al., 2013). The limited number of healthcare professionals in rural areas causes a higher workload, especially for senior physicians (Bourke et al., 2014). It can be hard for physicians to find time to mentor younger physicians (Bourke et al., 2014). Often mentoring time is unpaid and requires voluntary involvement. Voluntary involvement can ensure that a physician desires to mentor and is committed to the process.

Mentoring programs are a way to support the rural workforce, but more evaluation is needed to ensure that the mentor relationship is impactful for rural health care. The mentoring models presented by Bourke et al. (2014) gave potential outcomes for medical students. Mentoring can expose students to rural and remote practice locations. The mentor model can give career benefits in helping students to achieve their medical goals in a rural location. It can also increase retention for both the physician and the student by increasing the support provided to professionals in a rural setting.

Medical students find the mentor relationship valuable, but students lack interest in finding a mentor (Mann, 1992). The SRH program director pairs each student with a mentor, so a student's interest in finding a mentor is not an issue, but how the Scholar views the mentor relationship was unknown before the study. Hauer et al. (2005) found that medical students valued having a mentor that could help with advocacy on their behalf. Medical schools need to offer mentors to help develop medical professionals and support personal growth (Frei et al., 2010; Hauer et al., 2005). Scholars in the SRH program are all from rural backgrounds, but their exposure to medicine in rural communities varies. The literature on rural mentoring programs

45

can help to understand Scholars' exposure to rural health care before or after the SRH formal mentoring.

Mentoring Outcomes

Mentoring outcomes are generally program-specific and often focus on the accomplishments of the mentee (Taylor & Black, 2018). However, many mentoring programs have generic general outcomes. Previously mentioned in the literature review were the mentoring outcomes of an increase in academic success, career advancement, and possible guidance towards certain medical specialties and locations (Faucett et al., 2017; Tan et al., 2018; Vasquez & Pandya, 2020).

Another outcome of mentoring groups in medicine is increasing cultural and social capital. Cultural or social capital is a common outcome of mentoring programs. It is an actual outcome because research often finds cultural and social capital lacking in rural communities and amongst underrepresented groups in medicine (Rivera et al., 2019). Mentoring can increase the mentees' cultural and social capital (Philip & Hendry, 2000).

Social capital is gained in a mentor relationship when the mentor has value to exchange with the mentee, such as information, influence, or opportunity (Cornileus, 2013). One aspect of social capital is connections or membership to a group (Bourdieu, 1973). The more extensive the network, the higher the social capital. Social capital is an outcome of formal mentoring as mentees expand their network. Social capital is crucial for specific individuals to achieve certain goals (Bourdieu, 1973; Cornileus, 2013), especially for students trying to break into the medical career. Formal mentoring allows the development of social capital in mentees by providing exposure to a network of mentors that were once nonexistent. Mentoring programs can look to add opportunities in the mentoring relationship that increase social capital. Increasing social

46

capital often includes having a quality mentoring relationship along with the experience of being introduced into a broader social circle (Cook & Glass, 2014; Cornileus, 2013; Philip & Hendry, 2000; Zou et al., 2015). Individuals are reluctant to share social resources outside of their social circle (McDonald & Day, 2010), so mentoring can expand both mentors' and mentees' social circle.

Cultural capital is a specialized skill set, such as educational qualifications, that can be converted into other forms of capital (Bourdieu, 1973). The ability to obtain a Doctor of Medicine would increase one's cultural capital in ways that would advance one's career and skillset to achieve a physician's position. Health career professionals are likely first to encounter exposure to the field of medicine, but many students lack the cultural capital to have early exposure to health career fields (Ovink & Veazey, 2011). Rural health mentoring programs allow students from rural areas to gain cultural capital that could lead to social capital.

Barriers to Successful Mentoring

The literature shows primarily positive outcomes for mentoring, so what prevents a successful mentoring experience? It is essential to discuss research on the barriers that prevent a successful mentoring relationship. Barriers, both real and perceived, that prevent a positive relationship for both the mentor and mentee need to be addressed. Two of the most significant issues in providing a successful mentoring relationship are location and time (Kashiwagi et al., 2013; Rivera et al., 2019; Straus et al., 2013). Mentoring in the SRH program occurs in a rural community that might not be close to where the student currently attends college.

It is worth noting these barriers that can impact mentoring, especially in rural communities. Challenges in developing a mentoring program are similar, no matter the program (Rivera et al., 2019), but rural mentoring has additional challenges. The biggest challenge cited in the literature for rural mentoring relationships is the geographical area in rural locations

47

(Kashiwagi et al., 2013; Rivera et al., 2019). Access to rural mentoring sites is a challenge in the SRH program. Scholars can attend any college or university, not just those in the state of Kansas.

The other real barrier to mentoring is time. Time impacts both the mentor and the mentee in a mentoring relationship. Levy et al. (2004) found a lack of time and recognition as a barrier to mentoring internal medicine residents. Participants realized the value of mentoring but had difficulty finding time for mentoring activities (Levy et al., 2004). Straus et al. (2013) conducted a qualitative study that included semi-structured interviews with 21 mentees to examine the mentoring experience. Time was a factor in unsuccessful mentoring relationships (Straus et al., 2013). The results of the study were like those in Levy et al. (2004). Straus et al. (2013) found that a lack of recognition and incentives were a barrier to a successful mentoring relationship. However, the time it took to mentor was the most significant barrier. Mentors and mentees report time as a barrier to participating in a formal mentor program (Straus et al., 2009).

Kashiwagi et al. (2013) also found that lack of time and distance between mentors prevented successful mentoring. The study revealed that mentees enjoyed the dyad model of mentoring (Kashiwagi et al., 2013), but research suggests a shared mentor model for issues of time availability. Shared mentoring models, or virtual mentoring models, can help when time is a barrier to successful mentoring (Keeler et al., 2018; Straus et al., 2013).

Summary

This chapter included literature significant to the study. Background about the national and state physician shortage introduced the chapter to understand why the SRH program and the KU SOM aim to increase the rural physician population. The chapter then introduced literature about the determinants of rural health. Hometown location is the primary indicator of a medical student becoming a rural practice physician (Hyer et al., 2007; M. R. McGrail et al., 2011;

48

Rabinowitz, 2001; Wade et al., 2007; Walker et al., 2012), and each Scholar is from a rural hometown in Kansas. The literature on the determinants of rural health practice helps to understand rural premedical students. Finally, the chapter introduced literature on mentoring. Many mentoring models exist, but the dyad model of mentoring is the most common. The dyad model pairs a mentee with a mentor (Kashiwagi et al., 2013) and is the mentoring model used in the SRH program. According to the literature, mentoring is a way to support premedical students from rural backgrounds, but the scholarship does not cover the mentee experience in rural medical pipeline programs. The following chapter will introduce the study design used to learn about the mentee experiences in the SRH program.

Chapter 3: Methodology

This study employs a qualitative research methodology to examine the mentor relationship in the SRH program. Qualitative research, according to Holley and Harris (2019), allows the researcher to use an "inductive outlook, allowing data to emerge and shape understanding" (p. 4). The current understanding of the mentoring experience in the SRH program is not based on data but rather on assumptions on the mentoring experience. Feedback on the program's mentoring aspect is not requested at the SRH Annual Meeting each summer during the session on program feedback. Formal research on the mentoring experience has not occurred. The Scholar mentee experience study will help develop mentoring resources to provide guided mentoring in future years. I use the study results to create guidance for the program and develop mentoring training for both the mentor and mentee.

Through a qualitative research study, I gathered first-hand reflections on the mentee experience in the SRH program. Questions addressed the mentoring experiences from the mentee perspective about mentoring in the SRH program. Qualitative research allowed for new knowledge on the mentee experience by asking a wide range of questions to make sense of the mentoring relationship.

This chapter explains the study design and includes the following: research design, methodology, program participants, the positionality of the researcher, data collection, data analysis, and limitations. The main research question guiding the study is: what is the mentee experience of a former participant in the Scholars in Rural Health program? I used three supporting research questions to answer the main research question: When did mentoring occur for participants in the Scholars in Rural Health program? What are the Scholars' perceptions of mentoring relationships? How can the mentee experience be improved?

The Interview Focus

The interview protocol in Appendix D outlines all interview questions and prompts to answer the research questions. The questions sought to find out what the mentoring experience included from the perspective of a former Scholar. The interview questions are designed to discover what a Scholar did with their mentor. The main interview questions were:

1. How did you find out about the Scholars in Rural Health program?

2. Before you started the SRH program, what were your thoughts on mentoring?

3. How did you communicate with your mentor?

4. How would you describe your relationship with your mentor?

5. How did your mentor support you during the SRH program?

6. Relative to the entire mentor experience, what recommendations would you give to improve mentoring?

Context of the Study

This study took place at the University of Kansas School of Medicine (KU SOM), with participants who were enrolled in medical school after completing the Scholar in Rural Health (SRH) program. The SRH program, as of 2019, has accepted 275 students into the early admission program. Over half, 58%, who have participated in the SRH program are female, as seen in Table 1. The majority percentage of female participants is not reflective of the entire medical school body. The matriculating class of 2019 was the first majority-female medical student class, located in Table 2.

Table 1

2016 – 2019 Matriculating Scholar Demographics

Matric Year	# of Scholars	Males	Females	# of different undergraduate institutions
2016	13	5	8	8
2017	15	6	9	10
2018	15	7	8	6
2019	13	5	8	6

Table 2

2016 – 2019 KU SOM Matriculation Stats

Matric Year	Class Size	Males	Females	# of different undergraduate institutions
2016	211	106	105	62
2017	211	118	93	66
2018	211	102	109	69
2019	211	108*	102*	68

*One matriculant declined to respond to gender question.

As of August 2019, 72 scholars were enrolled at the KU SOM and 90 past participants were currently practicing medicine. The research study focused on former scholars currently enrolled at the KU SOM, who had just completed their first or second medical school year. The participants were in the same curriculum phase and were not far removed from their SRH program mentoring experiences. The current scholars attend medical school on each of the three campuses. The sample included representation from each campus.

Research Design

The research questions and intent of the study were appropriate to explore through qualitative research design. My primary purpose was to understand the experiences, relationship, and role of the mentoring aspect of the SRH program on the students who participate. Devers and Frankel (2000) say that "qualitative methods are needed when the questions being asked pose puzzles that are difficult, if not impossible, to address using conventional research

approaches" (p. 253). Research on the SRH program outcomes has been completed only quantitatively with no research on the mentor experience. Qualitative research was a suitable method to study the participants' subjective realities in the SRH program (Merriam & Tisdell, 2015). Phenomena that require interpreting rather than measuring, like mentoring experiences in the SRH program, can be researched using qualitative methods (Merriam & Tisdell, 2015).

One qualitative research method is a generic qualitative study, or what some define as basic interpretive qualitative research (Holly & Harris, 2019). A generic qualitative study is a common approach in the field of education. Holley and Harris (2019) wrote that "this type of study relies on a foundation of constructionism, which suggests that individuals construct unique versions of reality through their interaction with the world around them" (p. 107). Merriam and Tisdell (2015) wrote that a basic qualitative study is interested in three things: "(1) how people interpret their experiences, (2) how they construct their worlds, and (3) what meaning they attribute to their experiences. The overall purpose of understanding how people make sense of their lives and their experiences" (p. 38). A basic qualitative method of data collection and analysis allowed me to understand the factors that created a meaningful mentee experience in the SRH program.

The basic qualitative method helped to understand the mentees' perspectives of the SRH program. The interviews helped to understand the 200-hour mentoring requirement. The study explored the mentee experience based on the Scholar's perspective and how their experience could better serve future program participants. The goals of the research fit well with the strengths of qualitative research design.

Recruitment and Data Collection

The two current co-directors of the SRH program, and colleagues at the KU SOM, gave first approval for the study. The SRH program is an admissions program that falls under my leadership as the Assistant Dean for Admissions. However, I wanted to receive full support from the appropriate stakeholders. I used purposeful sampling to intentionally select individuals for the study. Purposeful sampling is the most common form of sampling in a qualitative research project (Merriam & Tisdell, 2015). The use of purposeful sampling made the most sense for the research project due to the focus on mentee experience in the SRH program. The Scholar mentoring experience in the SRH program was researched by interviewing past Scholars currently enrolled in medical school. There are currently 72 Scholars in medical school at the KU SOM who were accessible for the study, with 28 in their first or second year. At the time of the interviews, participants were all past SRH students who had just completed their first or second medical school year at the KU SOM. Selection of the current medical students occurred while students were in their first or second year of medical school, Phase I of the medical school curriculum. Working with participants from the same curriculum phase allowed me to find SRH participants who had recently experienced mentoring in the SRH program and who had also had similar medical school experiences. If the sample size would have been too small, former SRH participants in years three or four, Phase II of the curriculum, could have been recruited for the study. However, it is more likely that Scholars at KU SOM in their first or second year were better able to remember details about their premedical mentoring experience than those in their third or fourth year or who had been in medical practice for a few years. The Office of Admissions at the KU SOM keeps the contact information of past SRH students.

Following IRB approval, participants for the study were recruited by email. I emailed all past Scholars in their first or second year of medical school at KU SOM to participate in the study. The email explained the study and requested participants to help understand the mentoring aspect of the SRH program. The recruitment email is Appendix A. All participants in the study received an Amazon gift card for $15 after the completion of the interview. If a Scholar responded that they were willing to participate in the study, I explained the consent process and scheduled an interview. The recruitment email provided enough participants for the study, so no follow-up emails to SRH students who had not responded to the recruitment email were necessary.

For this study, the sample included 11 past SRH program participants. The original goal was to have fewer than 20 study participants but add participants until a saturation point. After 11 interviews, I determined that the most recent interview participants were not producing new information. The sample size allowed for more in-depth questioning and a more reasonable timeline. The sample size of 11 Scholars was a reflective demographic sample of the 28 scholars in their first or second medical school years. The sample includes more females than males, and participants represented various regions of Kansas. The participants are an accurate reflection of the SRH program.

Data Collection

A primary component of a basic qualitative research project is the researcher acting as the primary instrument for data collection and analysis (Merriam & Tisdell, 2015). As a researcher, I looked to find recurrent patterns within the data (Holley & Harris, 2019), and I continued to look for patterns through all stages of the data collection process. I was aware of how the settings and context might draw different results throughout the interviews.

All interviews were conducted using Zoom. Zoom is a web-based video conferencing software that allows users to connect virtually online. Zoom has the ability for users to use any web-accessible device to connect with or without video. Interviews in Zoom were conducted with video to resemble an in-person interview that captures non-verbal communication. Zoom interviews were necessary due to the COVID-19 pandemic and allowed for students' participation no matter their current location. It was the safest option to use during the COVID pandemic.

I scheduled a 45-minute to a one-hour interview with each participant. All details were confirmed by email, and I sent a calendar appointment to each participant. I sent a reminder email the day before the interview. Participants were not required to give written consent, but verbal consent was requested after the participants had been given a consent FAQ form and an overview of the IRB approval. The FAQ form is in Appendix B. Participants were reminded by me that their participation was voluntary. I recorded the Interviews using the voice recording features in Zoom and a voice recording app when Zoom recording had technical issues.

I transcribed all responses verbatim. If additional clarification was needed after transcription, a follow-up telephone interview would have been used, but a follow-up was not needed. In addition to recording verbal responses, I also made observational notes about the participants during the interview. I noted any change in mood or body language to provide additional context to the verbal responses.

Data collection followed the semi-structured interview protocol mentioned above. This interviewing format allowed for consistency in the question order but allowed the participants to add additional information if a follow-up question was needed. I used an interview script to share consistent information with each participant. The interview script is in Appendix C, and the

interview protocol is in Appendix D. The interview protocol was used to ask each participant questions in a particular order to maintain uniformity. The interview protocol structure includes the main question and probing questions to answer the overall main research question. I used a semi-structured interview style that allowed for fluidity in the interview process. However, questions did arise outside of those in the interview protocol.

Positionality of the Researcher

A researcher brings values and assumptions into a study based on the researcher's previous experiences or positionality. These past experiences that I hold as the researcher could influence the study and any conclusions drawn from the data (Maxwell, 2013). I recognized any bias I brought into the study in order to uphold the research integrity.

I currently serve as Assistant Dean for Admissions at the KU SOM. I live in an urban environment with little experience living in a rural location and no experience living in rural Kansas. I am a white, cis-gender male, working in a medical school that is majority white. The University of Kansas School of Medicine has three campus locations. The Office of Admissions is on the Kansas City campus. Office location did not influence the study's sample due to the use of a virtual platform for the interviews.

In my role as Assistant Dean, I coordinate the interview and selection process for the SRH program. However, I am not involved in the mentor selection or mentor pairing for the students. Although I participate in and coordinate the selection process of the SRH students, I explained my role as the researcher to each participant. Each student's experience in the SRH program was respected, and all information shared was considered valuable to the study.

Participants previously had interacted with me in my role as Assistant Dean of Admissions. The participants' relationship with me could have skewed responses. I noted any

instances a participant seemed to tell me what they thought I might want to hear. There was a chance that my positionality might not allow for honesty from the participants and could have limited data themes. A participant might not disclose certain information based on my role with the SRH program or due to an assumption that I might remember information included on the Scholar's application to the program. Scholars could have assumed I held a certain level of personal background information about them. In order to produce a successful dissertation, I pursued honesty in the data by clearly stating my role as the researcher and had a constant awareness of my positionality. I looked for discrepant data in the responses and kept researcher bias at a minimum (Maxwell, 2013).

Pilot Testing of Interview Questions

I tested the questions used for the interviews with participants not included in the sample—pilot testers were former members of the SRH program. Three former Scholars, who are now faculty members at the KU SOM, were easily accessible and willing to help. I informed the past Scholar of the study and the intent of the questions. Each provided feedback on the interview protocol, order of questions, and delivery of the questions. One of the pilot test participants was a former Scholar and later served as a program mentor. The participant gave valuable insight to both sides of the mentoring pair and helped construct the questions' intent, order, and delivery.

The pilot interview questions helped to inform the final interview questions. The insight was valuable in creating the final interview questions and knowing what responses might arise in the interview. I did three pilot interviews using Zoom. Based on the feedback, I revised and added interview questions as needed. Testing the interview questions helped me to find holes in the interview protocol and to practice notetaking while interviewing. Information gathered from

the pilot interviews was not used in the study. It helped inform what interview questions needed to be asked and made sure I followed an appropriate interview protocol.

Organizing & Analyzing the Data

The data collected in a basic qualitative study is analyzed to identify the recurrent patterns that emerge (Holley & Harris, 2019). Data analysis included memo-making and journaling during the interviews, transcribing the interviews, organizing the data, and coding significant themes throughout the data. A constant comparative analytical approach was used throughout the data collection process to discover the significance of mentoring in the SRH program. The constant comparative analysis approach easily aligns with grounded theory methodology (Jones et al., 2014). I did not use the data to create a new theory but instead used it to categorize the themes and concepts that emerged from the mentoring experience. This approach works well in the generic style of qualitative research.

The basic qualitative design involves semi-structured interviews for data collection (Holley & Harris, 2019). As the researcher, I looked to identify reoccurring patterns in the data, which would then be the basis of the study (Holley & Harris, 2019). As Merriam and Tisdell (2015) wrote, "the primary goal of a basic qualitative study is to uncover and interpret these meanings" (p. 24), so I used data from the interviews to interpret how SRH participants made meaning of their mentor experience. The analysis considered all interview notes, observations during the interview, and transcripts. Once the transcription of the interview was complete, I began an analysis of the interview themes. It was essential to listen to and read over the transcripts multiple times. I analyzed the interview data for reoccurring themes, ideas, or similar statements about the mentoring experience. Reoccurring data themes were then categorized by research questions.

Using constant comparative analysis kept me, the researcher, engaged throughout the data collection process stages. During the interview, I used memo writing to record any initial theme I thought to be emerging. Memo writing helped to keep track of the data as it emerged. I exposed multiple themes during the interviews and transcription, so a constant comparative analysis approach helped me identify broad themes early. Keeping notes throughout the process helped find emerging themes that I then used as a foundation before coding began.

Throughout the data analysis process, I used etic, initial, and focused coding. Etic codes are codes created from the literature review, problem statement, and research framework (Holley & Harris, 2019). Initial codes are the themes that emerge after the first review of the data, and focused codes allow for a more analytical turn in the themes (Jones et al., 2014). The first round of coding included analyzing the literature review and problem statement to establish the etic codes (Holley & Harris, 2019). The etic codes provided a structure for the initial round of coding (Holley & Harris, 2019). Memo writing during the interviews helped to identify the broader themes used before transcribing the interviews. These broader themes became the initial codes. After transcribing the interviews, I used focused coding (Jones et al., 2014) to evaluate the transcripts. A focused code becomes a more "integrative and theoretically rich category" (Jones et al., 2014, p. 80). I organized codes in a spreadsheet by using a series of colors, letters, and numbers to group significant findings. I created additional tabs on the spreadsheet to organize the data and track emerging themes. First, I placed the etic codes on the spreadsheet, followed by the initial and focused codes. Each code had the related transcription in the adjacent column. I then combined similar codes into a more specific code. I created a graphic organizer to group codes and begin establishing themes. I then categorized themes in light of the research question.

Throughout the data on the mentee experience, I found unique individual themes emerged along with consistent themes throughout the data. Second, I used the literature review etic codes to build themes on factors for successful mentoring. The etic codes derived from the literature review helped to identify outliers in the data that were worth noting or were out of step with the existing literature. I mention outliers in the implications section in Chapter 5. Finally, I found themes associated with the mentor relationship that occurred outside of the 200 required mentor hours. I learned more about the mentoring relationship as it happened in three stages: before the SRH program, during the two years in the program, and after completing the program.

Keeping the data organized was crucial for finding emerging themes about the mentee experience throughout the process. Data analysis began during the first interview and continued throughout the writing process until the study was complete. The constant comparative analytical approach allowed for fluidity throughout the process. I continuously compared emerging themes with earlier found themes, which allowed for additional validity in the data.

Data Validity & Trustworthiness

Achieving trustworthiness in the data helped to verify that the research was meaningful. In quantitative research, it is common to see the definition of trustworthiness as similar to reliability and validity. This study used the definition of validity from Maxwell (2013); validity is "to refer to the correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of account" (p. 122). Data collected from the study participants remained as valid as possible throughout the process.

Researchers achieve trustworthy research by establishing credibility, dependability, transferability, and confirmability (Morrow, 2005). During the interviews, I clarified information Scholars shared by asking follow-up questions when needed. The responses to interview

questions were similar among the Scholars, and I felt the responses were credible. Confidence in the research findings has to be established in order for the work to be trustworthy (Jones et al., 2014). Credibility was sought by confirming themes in the responses with themes found in additional responses from other SRH students in addition to the themes in the literature review. I collected data on the mentee experience until a point of saturation, another example of how the study provides credible data throughout the qualitative process (Morrow, 2005).

Dependability was accomplished by sticking to the research design and interview protocol for each participant. Transferability in the data requires that the findings and themes are meaningful (Morrow, 2005), and for this dissertation, the findings were worth knowing for future improvements in the SRH program. The research achieved confirmability by tying the findings into data and analysis. The data needed to speak for itself and not from any assumption that I, the researcher, was trying to force: the research data supported any claim I made because the data was credible and transferable. No data altering was present.

Protection of Human Subjects

With a full explanation of the data collection process, the study was submitted for approval to the University of Kansas Medical Center Institutional Review Board (KUMC IRB) after the proposal was successfully defended. The study included current KU SOM medical students, so Dr. Mark Meyer, Associate Dean of Student Affairs at the KU SOM, provided a letter of authorization to conduct the research. The letter met the requirements for the KUMC IRB student subject research authorization. All data collected was protected during the study and continues to remain protected after the study. After KUMC IRB approval was received, participants were sought by email.

The protection of each human subject was the main priority. Each participant was informed of the consent criteria in the recruitment email before their involvement in the study. An *informed consent procedure: frequently asked questions* document was provided to each participant. According to the requirements of the human subjects of the KUMC IRB process, written consent was not needed based on the minimal risk of the study. Given that the research procedure was an interview, KUMC IRB found the recruitment email sufficient and concluded that it provided all necessary consent information. I gave all participants consent information when asked to participate in the study. I placed the recruitment email in Appendix A, and the informed consent frequently asked questions document in Appendix B. Once the interview recording began, I asked the participants if they had any questions about consenting to the study. Then the participant gave verbal consent in order to begin the interview.

Due to my positionality in relation to the participants in the study, it was important to protect confidentiality throughout the process. I asked each participant to give verbal consent for approval of participation in the study. As a reminder, I told participants that their name and all responses would be kept confidential. I assigned a pseudonym to each student during the length of the project. A student could request to have their responses withheld at any time.

Limitations

A significant limitation is that this project focused on one rural health pipeline located in Kansas. The findings are not generalizable but provide a foundation for improving rural students' mentoring experience at KU SOM. The research sample of former Scholars provided some limitations. First, the project included only one program in one rural state, and not every Scholar was a participant. The sample included 11 past participants of the SRH program. The Scholars who chose not to participate in the study could have had different experiences from those willing

to participate. Additionally, many participants had a prior relationship with their mentor before the SRH program. A prior relationship with the mentor might not be typical for all SRH program participants

Second, all Scholars were in the same phase of the curriculum. Each participant had just completed their first or second year of medical school. Participants in the same curriculum phase helped make the sample more uniform in their medical school experiences. However, if the sample size included a more comprehensive range of participant years in the SRH program, it might draw different conclusions. A former Scholar who had participated in rotations during the third and fourth years of the curriculum might offer more insight into how the mentor prepared them for medical school and their clinical experiences.

Third, the program Zoom was used to conduct the interviews. The choice to use Zoom was a response to the COVID-19 pandemic. Zoom allowed for flexibility in scheduling and prevented issues that could have resulted from the travel necessary for an in-person interview. However, using Zoom created limitations in the study. The Scholar participants located in their rural hometown during the interview had internet issues. It was not uncommon for the screen to freeze, audio to cut off, or for a participant to disconnect at random. Navigating internet issues with participants took away from crucial moments in the interview.

It was using Zoom that allowed for a unique look into each participant's life. It felt like each participant invited me into the comforts of their home for the interview, but at times it was too comfortable. Participants did not seem to treat the interview as formally as possible if conducted in person. Pets often entered the interview screen or joined the conversation on the participant's lap. The interviewer could hear sounds from off-screen, and occasionally a roommate might accidentally open a door in the middle of the interview. Distractions took the

train of thought away from the participant in the middle of the interview. It took time to get the conversation back on track when distractions occurred. If the interviews would have taken place in-person and in a secure area, I might have received different responses.

Research bias was also a potential limitation for the study. As the researcher, I kept all bias to a minimum and tried to identify any bias that might have crept into the study. In the qualitative research design, I recognized my own experiences and took the necessary steps to keep bias at a minimum.

<div align="center">**Summary**</div>

In Chapter Three, I gave an overview of the research design, setting, along with the data collection and analysis process. This chapter addressed the methods to verify that the study is trustworthy and worthwhile. Trustworthiness ensures integrity in the data and the study. The chapter addressed possible limitations, but I present additional limitations of the study in Chapter Five. Limitations did not prevent the study's design from contributing to the research on the mentee experience in the SRH program. In the following chapter, I will provide the participant responses and an analysis of the themes in the data.

Chapter 4: Research Findings

This study investigated former participants' experiences in the Scholars in Rural Health (SRH) program at the University of Kansas School of Medicine (KU SOM). The study is a basic qualitative study that used a semi-structured interview method. Interviews were conducted virtually using Zoom in June 2020. The purpose of the study was to learn more about the former scholars' mentoring experience and answer the main research question: what is the mentee experience of a former participant in the Scholars in Rural Health program? This chapter presents the findings according to the main research question: what is the mentee experience of a former participant in the Scholars in Rural Health program? After answering the main research question, I present the supporting research questions in the following order: what are Scholars' perceptions of mentoring relationships, when did mentoring occur for participants in the Scholars in Rural Health program, and how can the mentee experience be improved?

The findings in this chapter represent the themes that emerged from the interviews. I found a total of 11 significant themes with two or three themes per research question. The 11 themes associated with each research question are in Table 4, *Research Findings by the Appearance of Theme in Chapter 4*. Next, each research participant's background description is provided based on the information shared during their interview. Next, I present the research questions with findings according to the themes categorized by the research question. Each theme includes multiple codes that I explain in the findings.

Background of the Participants

The 11 participants are current medical students who matriculated into medical school following the SRH program's completion. First, I will describe the mentor and the role the Scholar played in selecting their mentor. To select their mentor, each Scholar provided the SRH

program director a list of possible mentor names. Not every Scholar had a previous relationship with their mentor. All Scholar mentors practice primary care, with all participants having a mentor who practiced family medicine. However, a few mentors had an emphasis on obstetrics or pediatrics. To better understand each scholar who participated in the study, I included brief background information in Table 3, *Scholar Participant Background Information*. The background information includes how the participant found out about the SRH program, how the mentor was selected, and the location of the mentor compared to the college town. Table 3 includes supplemental information to aid in understanding the Scholars' background. The background table includes the Kansas regional location of the Scholar's hometown, institutional type of the undergraduate university, undergraduate major, if the Scholar has a physician in the family, if a previous relationship existed with the mentor, and the location of the mentor. The background information of the Scholar helps aid the reader in understanding the findings.

Anna: Anna is a female who was paired by the SRH program administrators with a male mentor. Anna knew about the SRH program from her experience working at a hospital. Physicians at the hospital had been involved with the SRH program and advised her that it had been a great experience. Anna did the SRH program to solidify her desire to go to medical school. Anna's mentor practices medicine in a town located a little over twenty minutes away from her hometown. Anna had experience working at the town's hospital and had some previous interactions with her mentor but had never shadowed him. The mentor is a family medicine specialist. The mentor's location was about two hours from Anna's college town. Anna is from a small town in southeast Kansas and attended a large public in-state university where she majored in biology.

Caitlin: Caitlin is a female who was paired by the SRH program administrators with a female mentor. Caitlin first learned about the SRH program while attending a neighboring high school career fair. After high school, she began to find out more about the program and began shadowing physicians. Caitlin had a strong feeling that rural medicine was right for her but wanted to gain more in-depth experience in the SRH program. Her mentor was one of the physicians she had previously shadowed, and she had a previous relationship with the mentor due to family connections. The mentor is a Family Medicine Specialist with Obstetrics. Caitlin's mentor was located about 45 minutes away from her hometown. Caitlin is from a rural unincorporated town in northwest Kansas and attended a large public in-state university where she majored in biology. Caitlin's hometown is four hours from her college town.

Christopher: Christopher is a male who was paired by the SRH program administrators with a male mentor. Christopher heard about the Scholars program from a family member who is a physician. The family member had a few Scholars that they had mentored, so Christopher asked a few students about the program. Christopher was interested in the early exposure to medicine and the low-risk learning environment that the SRH program provided. He was able to pick his mentor and had a prior relationship with the mentor selected. The mentor is a family medicine specialist in Christopher's hometown. Christopher is from a small town in northcentral Kansas and attended a midsized public out-of-state university where he majored in biomedical science. Christopher attended college three hours away from his hometown.

Daniel: Daniel is a male who was paired by the SRH program administrators with a male mentor. Daniel heard about the SRH program through participation in a premedical club at college. The program was attractive because he knew he wanted to get into medical school. Daniel had known his mentor for years before being placed together. He had shadowed the

mentor a few times before the SRH program and described the relationship as comfortable and personal. The mentor is a family medicine specialist. Daniel is from a town in southeast Kansas and attended a large public in-state university where he majored in chemistry. Daniel's mentor was located about four hours from his college town.

Elizabeth: Elizabeth is a female who was paired by the SRH program administrators with a male mentor. Elizabeth learned about the SRH program during high school on a college visit. She was interested in the program because it provided a pathway to medical school. Elizabeth did not know her mentor before being paired with the mentor but had experience shadowing at the mentor's practice. The mentor is a family medicine specialist in Elizabeth's hometown. Elizabeth is from a small city in southwest Kansas and attended a large public in-state university where she majored in biology. Elizabeth attended college a little over five hours from her hometown.

James: James is a male who was paired by the SRH program administrators with a male mentor. James found out about the SRH program from students who had done the program earlier. James had shadowed a physician prior to starting the SRH program, but he wanted to use the experience to become more comfortable with medicine before entering medical school. James did not know his mentor formally before the program but was aware of who he was. The mentor is a family medicine specialist. James is from a small city in northcentral Kansas and attended a large public in-state university where he majored in biology. The mentor's practice is about a half-hour outside of James's hometown and about two hours from James's college town.

Jessica: Jessica is a female who was paired by the SRH program administrators with a female mentor. Jessica was made aware of the SRH program thanks to someone who had completed the program in her hometown. The program was attractive because it would allow

Jessica to learn more about medicine than just the science aspect. Jessica had briefly shadowed her mentor before being paired with the mentor. The mentor is a family medicine specialist with a focus on obstetrics. Jessica is from a small town in northwest Kansas and attended a large public in-state university where she majored in biology. The mentor was located about twenty minutes outside of Jessica's hometown and was about three hours from Jessica's college.

Megan: Megan is a female who was paired by the SRH program administrators with a female mentor. Megan found out about the SRH program through family members who had experience with the SRH program. Megan wanted to do the SRH program to become more comfortable interacting with patients before starting medical school. Due to family connections, Megan had been able to shadow her mentor before being paired with them for the SRH program. The mentor practices Family Medicine with a focus on pediatrics and obstetrics. Megan is from a town in northeast Kansas and attended a large public in-state university where she majored in biology. Megan's mentor was in her hometown, which was located about two hours from her college town.

Rebecca: Rebecca is a female who was paired by the SRH program administrators with a female mentor. Rebecca first learned of the SRH program during high school from a student panel on one of the medical school campuses. She later received more information about the program at her undergraduate institution from her premedical advisor. Rebecca knew her mentor before the program and had spent time shadowing previously. Rebecca was attracted to the program because it allowed her to learn as much as possible before medical school and instill confidence in her. Her mentor is a family medicine specialist. Rebecca is from a town in northcentral Kansas and attended a large public in-state university where she majored in

education. Her mentor is in Rebecca's hometown, which is located about three hours from her college town.

Thomas: Thomas is a male who was paired by the SRH program administrators with a male mentor. Thomas found out about the SRH program through the premedical club and advisors at his college. He thought he could use the program to prepare for medical school, particularly the clinical experiences of medical school. Thomas had shadowed his mentor before being paired with the mentor. The mentor practices family medicine and is in Thomas's college town. Thomas is from a small town in northwest Kansas and attended a small in-state private college where he majored in biochemistry. Thomas attended college two hours from his hometown.

William: William is a male who was paired by the SRH program administrators with a male mentor. William found out about the program through a friend who had heard about the program and knew that William was from a rural town. William applied to the program to get a good sense of a rural physician's daily routine. William had shadowed before the SRH program but did not know his mentor, and the mentor was selected based on being in his hometown. The mentor is a family medicine specialist. William is from a small city in southwest Kansas and attended a large public in-state university where he majored in biomedical engineering. William's hometown is located about three hours from where he attended college.

Table 3

Scholar Participant Background Information

Name	Gender	KS Region*	City Size	College	Major	Knew Mentor	Mentor Gender
Anna	Female	SE	<2,500	Large Public In-State	Biology	Yes	Male
Caitlin	Female	NW	<500	Large Public In-State	Biology	Yes	Female
Christopher	Male	NC	<2,500	Mid-Size Public Out of State	Biomedical Science	Yes	Male
Daniel	Male	SE	<10,000	Large Public In-State	Chemistry	Yes	Male
Elizabeth	Female	SW	<30,000	Large Public In-State	Biochemistry	No	Male
James	Male	NC	<30,000	Large Public In-State	Biology	No	Male
Jessica	Female	NW	<2,500	Large Public In-State	Biology	Yes	Female
Megan	Female	NE	<10,000	Large Public In-State	Biology	Yes	Female
Rebecca	Female	NC	<10,000	Large Public In-State	Education	Yes	Female
Thomas	Male	NW	<2,500	Small Private In-State	Biochemistry	Yes	Male
William	Male	SW	<30,000	Large Public In-State	Biomedical Engineering	Yes	Male

*Location of participant's hometown based on region in Kansas. The KU SOM uses the Office of Rural Medical Education's classification system for regions.

The Mentee Experience of Former Scholars?

Interview questions that addressed the main research question yielded two primary themes: access to observation experiences and hands-on clinical experiences. The main research question is, what are the mentee experiences of former participants in the Scholars in Rural Health program? The two themes emerged from experiences within the clinical atmosphere and were not dependent on the mentor's medicine type. Each theme showed up throughout each transcript and was not dependent on mentor location or clinic size. Every mentor of the research participants was a trained family medicine physician. However, a few of the participants were paired with mentors who focused on obstetrics or pediatrics. A few scholars noted these differences when asked about what they were looking to get out of their Scholar experience.

Access to Observational Experiences

The first theme that appeared in the data to answer the main research question was access to observe the mentor in various settings. An essential aspect of the mentoring experience was observing what life was like in a rural physician's community. It was not just seeing a mentor in their workplace but seeing all aspects of the mentor's role. Scholars were able to experience mentoring that was not solely focused on a job or career. Observing the mentor's daily life was an essential aspect of the SRH program and answered the main research question. The access to the observational experiences each Scholar received is not typical for premedical students.

In answering the research question *when did mentoring occur*, it was found that most Scholars spent time with their mentors in blocks of time. Scholars had access to their mentors for long periods. Responses about an ordinary day with the mentor yielded similar experiences across Scholars. Most Scholars would arrive at the clinic early in the morning, set a schedule for

the day, and spend time observing their mentor throughout the day. William explained his typical day, which looked like that of many of the Scholars.

Get there at 8 or 8:30 in the morning…just kind of hang out in the morning with them. I'd usually ask him what the day looked like if it was really busy or if there was anything out of the ordinary on the schedule, as far as if something unusual case-wise is going to come in. Then we kind of go from there. We'd start either seeing patients, or he'd kind of go over some paperwork in the mornings. If there was not an early start necessary, get back to phone calls, and it was nice cause he'd always include me. Like 'this person's calling about this and I've talked to them about this.' He'd take notes on that to follow up with later, to put orders in sometimes, or you call them back if it was just a simple question (William).

Elizabeth explained what a typical day with her mentor looked like:

He just always asked me if I had any questions; we had a lot of like 5, 10 minutes between patients. A lot of times, we just go back to his office, and we would just like talk about the patient we had just seen, or I'd ask questions about like the billing for that, or just like little aspects like that (Elizabeth).

Christopher added that the time with his mentor was "dependent if we were rounding in the morning or not. If he didn't have any patients in the hospital, I round with one of the other doctors and see their patients too." Christopher was not the only Scholar who spent time with other providers. Thomas had the same experience and told me, "[the mentor] called it, pawning me off on some different providers. He said he's old, and he wanted me to see how younger doctors do it." Elizabeth also spoke about how her mentor would allow observation of the mentor's patients and encourage time spent with the other physicians in practice. Time with

other physicians was a small amount of time compared to the 200 hours spent with her mentor, but Elizabeth's mentor would encourage shadowing. "It would be like, 'Oh, [another doctor in practice] is seeing a really cool patient. I think he would enjoy you being part of that follow-up. Just go run over there, across the hall'."

The SRH experience over two years helped the former scholars observe longitudinal care in a rural clinical setting. Scholars had time to observe and work with the same patients throughout their two years with their mentor. Longitudinal care experiences are uncommon for a premedical student, but it was typical for the Scholar participants. Christopher talked about his experience over the two years of the program:

> Day three, a child comes in for their first visit. You know, we had patients die when I was there. Full scope it was and seeing the longitudinal care was nice too. If you're there two years, you can see somebody [receive a] real sick cancer diagnosis, and then you go back to college, and they go through their surgeries and stuff. And then I came back, and I see them in the office again, and they recover, you know, their remission and stuff (Christopher).

Daniel also spoke about having longitudinal care experiences and told me about a patient that coded. It was the first time Daniel had experienced a patient's death, and it was a patient Daniel had seen throughout his time as a Scholar. Daniel has not had that experience during his medical education, though he did by shadowing his mentor before starting medical school. Daniel was visibly shaken in his response as he recalled the experience and ended by saying, "honestly, it was crazy. I can remember it like it was yesterday." Scholars were able to spend quality time with the mentor in the clinic, which provided access to observational experiences that were unique to Scholars in the SRH program.

Access to observational experiences was apparent as Scholars spoke about observing their mentors outside of the clinical setting. The participants spoke about being able to gain valuable insight into how a medical practice operates. Learning about the operation of medical practice is uncommon for many premedical students. Rebecca was a Scholar who observed her mentor running a practice. Rebecca's knowledge gained about running a practice will last her through medical school.

> And she also gave me a lot of business insight, too, because of the way that their clinical practices work. They're all part owners in the practice, all the physicians are. And so honestly, just hearing her talk about that, she's like, 'they don't teach you this in medical school,' but X, Y, Z, and kind of gave me some good business background, which was quite frankly over my head because I didn't take any business classes in undergrad. And going into medicine, that wasn't really like in my mind, 'Oh I'm going to have to run a business or help with any of those other behind-the-scenes decisions.' So, hearing her talk about that was also good too. Cause it at least made me aware of like, Oh, that's something I'm going to have to think about. Or just insurance issues, the ins, and outs, just hearing her talk about it and the not-so-fun stuff that goes into medicine (Rebecca).

Rebecca was not the only Scholar who was able to observe how a medical practice operates. Anna explained, "even things like not related to medicine. I think that some of the stuff that I learned the most about was just like how a rural practice functions. I think that that's really valuable going into medical school, knowing certain things about that." Anna expanded her response to include the experience of observing her mentor in the community.

> I think that the practice as a whole, including [my mentor] has really made me appreciate what we had in [in my hometown] and realize that's something I really wanted to do is to

be a part of something that aided the community as much as our hospital did. So, I think

it gave me a really optimistic look at what rural medicine can look like. And it made me

want to emulate that going into medical school and then beyond that into residency and to

a practice (Anna).

Observing the mentor in their hometown community opened the eyes of the Scholars.

Jessica shared her ability to observe the role of her mentor in the community. Her mentor was

able to balance being a physician with having a family while maintaining a personal life.

It was also like being a physician in the community doesn't mean you're just a physician

in your community. And that was something that I really appreciated. She was a coach,

and she was involved in her kids' lives and helped start a gym. Being a rural physician is

not just being a physician, and so that was something I always really appreciated

(Jessica).

The Scholars each brought expectations into the SRH program about what they might

observe during the time with their mentor. The expectations did not always become a reality for

the Scholar. Scholars did have the ability to observe various cases, but patient cases were often

limited to the type of medicine the mentor practices.

Christopher explained about his experience in the clinic "They didn't do OB there. So, no

childbirths or anything, which I don't plan to have a future OB practice if I do a family medicine

unit, and I don't plan to go into OB-GYN. So, didn't see that." William summed up the

expectation of what students might or might not see over their time in the Scholars program.

I know some of their docs do a lot more surgeries and procedures type stuff, or like they

do a lot more like infant care, delivery care, that was always the story we got told was,

'Oh you've got to deliver a baby during rural health,' which my doctor didn't do. He

77

doesn't do delivery. So, I wasn't expecting to do anything like that. But I don't think

anybody in my class did that, that I am aware of (William).

William explained some of the expectations Scholars have going into the program, delivering a

baby, or acting as a medical student before being in medical school. The Scholar's experience

was dependent on the mentor relationship, type of practice, and mentor specialty.

Hands-On Clinical Experience

In addition to observing their mentor, Scholars shared many hands-on experiences in the

clinical setting. Some mentors were more comfortable with the Scholar being hands-on. Not

every Scholar spoke about hands-on experiences, but many went into detail about all they could

do with their mentor. As time went on in the Scholars program, mentors seemed to be more

comfortable letting a Scholar gain hands-on experience. William explained his experience with

his mentor over two years in the program.

> I think every time I would start, so the first week or two that I was there in the first
>
> semester of the program, he asked me, 'well, what do you like? I think this first week, I'll
>
> just have you kind of follow me and see how things run. And then the next time we're
>
> going to get you more hands-on type things.' Which he actually did it. I figured out I was
>
> pretty comfortable in the patient setting, and he started letting me do like vitals and stuff
>
> pretty quick. And then subsequent times he would say, 'Well, what do you want to get
>
> out of this?' He would ask me what I wanted to get out of this week or two that I was
>
> going to be here for this semester. Cause I always did everything in one or two weeks of
>
> stretches to get my hours for the semester in, since I wasn't in [my hometown] very often
>
> (William).

Megan had a mentor who practiced obstetrics and gynecology. Megan explained how the mentor included her in procedures performed. "I really liked that she let me be very hands-on. I know I scrubbed in with her on a couple of C-sections. I got to like deliver placentas. I was very hands-on. I learned a lot that way." Megan circled back to this experience.

> She let me deliver a placenta on like, one of the second, I think, vaginal births I saw with her. So, she was having me all scrubbed in with her, and we were both right down there. And so, she had talked me through the motions you do to deliver a baby before. And so, I watched her do that. And then she had me get right up there and, you kind of pull on the umbilical cord. And that was just awesome for me to be right, kind of in the busyness, and being able to help her is something that I was not expecting for her to let me do (Megan).

Anna also was able to scrub in to help with a baby delivery. "I got to help deliver a baby during scholars. I wasn't the primary one, but I got to do that with him during scholars," said Anna. James, when talking about his experience, said:

> He kind of did everything as a family physician, which is typical in small towns. Whereas the doctors I shadowed with before were more specialized. I got to see a wide range of stuff. Also, a lot of his patients were more willing to let me like assist with stitches or injections 'cause they had known him a lot better (James).

James also explained how one of the patients allowed him to give stitches. "It was a farmer who he knew ahead of time wouldn't care so much about the outcome of that scar or whatever. So, he [the mentor] asked him, and he [the patient] was willing to let me. So that was cool." Christopher had a similar experience to James.

I did have quite a bit of hands-on experience. Probably more than some others. I did

sutures; I did a few small procedures. I was always assisting when they did procedures. I

don't think I interviewed, yeah, I didn't interview patients or anything. I'm trying, I'm

trying to remember exactly what all happened, but there was still some like things I got to

learn. I would say it was, definitely, they put a little bit more trust in me than a med

student just because like I was already in [medical school], but still, I didn't have any

credentials behind me, so they still had to cover themselves (Christopher).

Christopher was the only Scholar to mention not having credentials but having the ability to be

hands-on.

"Hands-on" did not just mean being physically hands-on with patients; it also included

being hands-on in the interviewing and charting of patients, as well as gathering information on a

patient's history. Thomas spoke more about what "hands-on" could mean in a clinical setting.

He [my mentor] would like send me into rooms before he would go in. I would kind of

interview the patient, get some history and stuff. He basically said, 'you know, when you

go to medical school, it will be helpful for you to be able to kind of take a history and be

comfortable talking to patients.' That kind of stuff was kind of our overall goal. He

would send me into rooms before him, and he had a certain way that he wanted me to be

reciting the history and stuff back to him (Thomas).

Megan was a scholar who had hands-on obstetric experience and wanted more exposure

to other hands-on experiences. "It would have been nice to have more history-taking skills being

practiced. 'Cause I would practice like physical exam stuff, but I would never really interview

the patient. I think that would have been a useful skill to come into medical school with."

Not all Scholars were able to gain hands-on experience. A few of the Scholars spoke about not being able to do much in the clinical setting compared to their peers in the SRH program.

> I guess the only thing was she's a little, I would say, controlling in the sense that I never tried anything. I never was given the chance to even go in and do like an H and P or anything like that. Whereas some of my colleagues would come back and say that they delivered a baby or they, you know, did different things. I still learned a lot, but she definitely, and maybe that was my own fault that I wasn't asking for the opportunity, but she just, she wasn't much for saying like, 'here you try this' (Caitlin).

Receiving hands-on experiences was an essential aspect of Scholar's time with their mentor. These experiences helped students as they transition into medical school. The Scholars who did not receive many hands-on experiences all seemed to regret not asking their mentor to provide them. As the interview participants reflected on their past experiences with their mentor, it helped transition how the program could be improved.

Perceptions of Mentoring Relationships

In addition to understanding the main research question, it is beneficial to present the supporting research questions' findings. The following section focuses on the first supporting research question results: What are the Scholars' perceptions of mentoring relationships? Understanding the participants' perceptions of the mentoring relationship gives a better understanding of the main research question. Three themes emerged when asking Scholars questions addressing their perceptions of mentoring relationships: understanding mentoring, mentor qualities, and a mentor's role.

Understanding of Mentoring

It was apparent during the interviews that each Scholar had varied views of mentoring. Most Scholars had no prior experience with a mentor. When asked if she had any experience with a mentor before the Scholars program, Jessica said, "I don't think that I'd ever been in a formal mentoring partnership. I think a lot of people have a mentor, someone that they ask questions. Going in, I knew that this was a formal mentor setting. I didn't really know what to expect." Her thoughts were not unique, and Scholars shared a familiar feeling of not knowing what to expect in a mentoring relationship. Few of the Scholars had prior experience with a mentor. Megan was one of the few:

I had heard it talked about a lot in my sorority. We have a kind of mentorship program for freshmen and seniors. So, I had kind of a mentor through that program. And then, I feel like I had talked a lot about mentors in like my youth group. My youth group in high school, I don't know if I ever had like a formal mentor other than [my SRH mentor] (Megan).

Megan was not the only participant who mentioned being in a sorority while pursuing her undergraduate degree. However, she was the only Scholar who mentioned how her previous experiences connected her with a mentor. Megan explained how her involvement in the sorority provided opportunities to connect with mentors. The other participants that were involved with Greek life did not mention having had any mentor opportunities provided to them.

Throughout the interviews, many of the Scholars used the words *mentoring* and *shadowing* interchangeably. Caitlin had a response that summarized the other Scholars' views about previous mentoring experiences. Caitlin's response to her experience with mentoring before the SRH program was, "I mean, when I transitioned from shadowing as a normal premed

82

student to shadowing as a scholar, nothing changed because she had already been, I had already

been with [her mentor] for so much time." Many of the Scholars had previous experiences

shadowing and compared shadowing experience with what the SRH program considered

mentoring. The Scholars had trouble separating a traditional definition of mentoring with a

previous time shadowing a physician. In Caitlin's experience, the physician she shadowed before

the program became her mentor during the SRH program. The shadowing felt the same as

before, except that now the SRH program considered this physician a mentor. The

interchangeable use of the terms shadowing and mentoring impacted responses throughout the

interviews on various questions. William shared:

> So I, like, before I started [the SRH program], I guess I would feel more of a mentorship
>
> position be more as like career advice or like professional advice rather than strictly, I'm
>
> going to be shadowing this person and seeing what they do, and being able to ask the
>
> questions, I guess? That's kind of how I mean, I still kind of view it that way, but, you
>
> know, they [SRH program] called them mentors and the rural health program mentors.
>
> And I, at first, I didn't really feel like it was that kind of relationship. Just kind of more
>
> like a, hey, we're here to shadow to get primary care exposure. And then, you keep
>
> coming back, and you talk about school and the stuff going on and like your interest. It
>
> does, at that point, mentorship does take place, maybe in a less formal mentorship setting
>
> (William).

William's response was describing a less formal mentor relationship. Based on the

responses, many scholars described informal mentoring but lacked the vocabulary to call the

Scholar program an informal mentoring program. A few of the Scholar responses showed a

surface level understanding of mentoring and mentorship. Interview questions asked Scholars to

explain experiences with a mentor before the program to answer the research question about

mentoring perceptions. Some Scholars responded with their definition of mentorship. Daniel

explained:

> mentors can be great, and it kind of depends on your mentor and how you utilize that
>
> mentor. I mean, I'm sure you've had your own mentors that, you know, you like better
>
> than you like others. It's just kind of finding what mentor you, I guess, fit into the same
>
> groove. If you have questions or things that you, you feel comfortable talking to them.
>
> Growing up, I lived next to a general surgeon, which kind of really sparked my interest
>
> into like surgery and medicine. I would say I could kind of view him as a mentor, and I
>
> mean, of course, I've shadowed him and whatnot, but I think mentors are great. I think
>
> they can shuttle you down the right path and they've been down the road before, so if you
>
> have any questions or you want to see is there anything that I need to know prior to doing
>
> this, then they're there. They're there to help you out (Daniel).

Although the questions asked about a participant's view of mentoring before the

program, it was difficult for them to separate what they knew at the time of the interview from

their time before the SRH program. At the beginning of the interviews, the Scholars explained

that a mentor seemed to be a person who held a position that the individual wanted to aspire to,

so they spent time following that person. This mentor was a physician example for the Scholars,

who were all premedical students hoping to begin medical school after completion of the SRH

program.

Characteristics of the Mentors

Scholars describing a mentor's characteristics were a topic of discussion that emerged

when answering interview questions that addressed the supporting research question about

mentoring perceptions. Each Scholar was asked by the interviewer to explain the positives and negatives of their mentor. Responses to questions about their mentor brought up characteristics that explained how Scholars saw mentoring as more than just time spent shadowing someone they wanted to become in their future. The most typical personal characteristics that emerged in the quotes was that mentors were teachers; they were supportive, encouraging, and honest.

Each Scholar mentioned something about teaching in their transcript. They all felt that a mentor was a teacher, someone who had knowledge that the mentee did not yet have. Thomas explained that a mentor relationship should be "comfortable and it's kind of like a teacher, student relationship. [My mentor] was a really good teacher, and I learned a lot from him." Thomas continued by saying:

> I would say that probably the thing that I appreciated the most is he never assumed that I knew something. He was always like, 'do you know what this is? Or do you know what I'm thinking?' And most of the time, I didn't. And he never made me feel bad about that (Thomas).

Jessica added that her mentor "was a very good educator and a good teacher. I always appreciated that. She didn't just tell me what I should do, or like I should know. She taught me what actually happens, and she never sugarcoated anything." Teaching was a quality that the Scholars found valuable for a mentor to have, and many noted that it was a characteristic found in their SRH program mentor.

In addition to the characteristics of being a teacher, Scholars also appreciated mentors who were supportive and encouraging. Anna talked about her mentor not only being supportive in the program but also continuing to give her support even after the program had ended.

I would say [we have] a very supportive relationship because if I have any questions, I

can go to him. Ever since starting Scholars in Rural Health up until now, I still ask him

questions about things. So, it's just supportive of the fact that he kind of continues to fuel

that want to go back to rural Kansas (Anna).

Anna's mentor continues to encourage long-term goals even though that formal mentor program

no longer exists. Elizabeth also explained how her mentor offered support by encouraging her to

spend time with other physicians. Spending time with others in medicine allowed Elizabeth to

have different experiences and learn from others outside of her mentor. Elizabeth's mentor

created a network of support for Elizabeth.

Honesty was a characteristic that also appeared throughout the transcripts. Scholars

shared examples of how they found honesty an essential characteristic in their mentor. Honesty

is a characteristic that was important as each Scholar was trying to determine if medical school

was the appropriate next step for them, as well as deciding what their future practice might look

like if they did decide to attend medical school. As Megan explained, "I had kind of already

decided I wanted to do rural medicine before I started shadowing her. So, she didn't really have

to convince me, but she was very honest about what I was getting myself into."

Not only was honesty important on the mentee's behalf, but it was also important when

talking with patients. Jessica told me about how her mentor's character showed when interacting

in the clinic:

She was a very hard worker and was very happy, like bubbly. At the same time, she was

not afraid to let people know when she was unhappy, and when things weren't being

done the right way. She did a lot for her patients just to make sure that they had what they

needed (Jessica).

Honesty was a characteristic that was important for the mentor relationship and was also an essential trait for the Scholars to see when in the clinical setting. Each Scholar had specific characteristics that they found valuable in their mentor. Thus, the data revealed the theme that the Scholars believed that the mentors were teachers, supportive, encouraging, and honest.

Role of Mentor is Multidimensional

Another theme that appeared in the data when asking questions about the first supporting research question was the role a mentor should play in a mentee's life. It was apparent from the responses that mentoring is not one-dimensional or focused on a single topic. In the case of the Scholars, mentoring was not just focused on medicine as a profession. Scholars found that the mentor's primary role was to expose them to all aspects of a physician's life. The Scholars experienced mentoring in medicine and were exposed to what a physician's personal life looked like outside of medical practice, which the mentee thought they would not learn about during their medical school career. Scholars referenced the idea that a mentor's role was to help guide a career path and show them what life looked like as a physician in a rural community.

As Daniel had already explained in his definition of mentoring, a mentor's primary role was to guide someone down the right path. Daniel's explanation was interpreted by the interviewer to mean a career path or a personal path. Scholars thought a mentor should guide them on a particular career path. The participants explained how their mentor had the primary role of showing them what to expect in their future careers. Christopher mentioned how his mentor showed him how to treat patients.

> The way he interacted with his patients. He had, you've heard of the healing touch? …
> And the way that he used [to] touch on the right patients and, a hug here, hand on the
> shoulder here, just watching him read a room and understand what people need. And I

mean, some of those people like that hug might've been the only human contact, they might be a widow or different things. Honestly, that's the biggest thing that stuck for me was his healing touch and learning more about like a social visit where some people come to the doctor because they need social interaction or just being able to talk to somebody. And it's not so much about medicine. It's more about humanism and treating people as people. So that's the main thing I took from him (Christopher).

According to the Scholars, it was essential to see the mentor in the clinic and the community. Anna had a similar experience to Christopher.

I liked that [my mentor] was so involved with our community. He was somebody that you always saw at all the high school sporting events. He was very involved with his kids. He was a very family-oriented person, and that's something that draws me to the field of family medicine. I think that that showed in his practice. I think that he really tried to orient himself when working with patients on how will treatment affect their family and things like that (Anna).

Mentors not only let Scholars spend time with them, but the mentor's role was to show how a physician should treat patients. The mentor showed interaction with patients in the clinical setting and the community setting.

Scholars continued to talk about their mentor's primary role in demonstrating how a physician should treat patients. Showing the proper way to treat patients as people was an essential aspect of the mentor role. Participants also spoke about how the clinical role transitioned to the mentor's role in the community, which is similar to the point that Anna communicated. James explained, "[From] what I saw, he seemed personable with his patients. He explained that and showed it through his actions that he knew all these people. They went to

88

church with him; kids grew up with their kids. And I enjoyed that a lot." Rebecca added a similar response to James:

> She always says she loves her job. I mean, she was always very positive about it. Honestly, just nothing but positivity about the relationship you have, but also the work-life balance. She's like, I work a lot, but it's nice to be able to, you know, that I can get off here for my kid's softball game or whatever. And the relationship she has with her staff and everyone in the community, she was always really positive about it (Rebecca).

According to the study participants, the mentor's role in the SRH program was to expose the Scholars to how a physician should treat patients and fit into the rural community. Scholars talked about this role as a mentor after spending significant time with their mentors. Hearing the participants talk about their mentor's expectations led to answers to the next research: *when did mentoring occur for the participants*?

When did Mentoring Occur for Scholars?

In the SRH program, Scholars spend 200 hours with their mentor over two years; 40 hours each semester and 40 hours over one summer. The Scholar participants claimed to have spent the required 40 hours with their mentor each semester or explained how they made up shadowing hours if they had a conflict. As noted in the findings of the second research question on the perceptions of mentoring, Scholars often used the terms shadowing and mentoring interchangeably. However, three themes emerged in the data to answer the research question when mentoring occurred. Mentoring occurred during college academic breaks, throughout the completion of the program requirements, and after completion of the program.

Time with Mentor Occurred During Academic Breaks

Most of the time spent with each mentor was in the clinical setting during breaks in the college academic calendar. As each Scholar responded to questions about their experience, it was clear that mentoring occurred during the clinical experience. Although the former Scholars would use terminology like shadowing instead of mentoring, mentoring was taking place at those times.

Scholars spent large blocks of time with their mentors over breaks in the academic calendar, except for Thomas. Thomas was the only Scholar who had a mentor located in his college town. Thomas did not know why a mentor in his college town was selected, but he explained that he thought being a student-athlete influenced the decision. It was unrealistic for him to fulfill the shadowing hour requirements in his hometown during his sports season.

Thomas was not the only athlete; Christopher also had to balance athletics, school, and spending time with his mentor. "I was a college athlete… my spring schedule was obviously like way busier than my fall schedule. I would try to get most of my hours done in the fall, like Christmas break, things like that." Christopher attended college in an urban area, so this influenced his choice of a mentor. Christopher explained that the program director was flexible in the completion of mentoring hours during the spring semester. Rebecca explained how time with her mentor looked by saying:

It's not like I could run back for an afternoon or anything like that. Usually, when I was there, I was there. It was a kind of like everything premed preparation if you're committed to it, and you want to go back and spend your spring break shadowing as opposed to going on a trip. I mean, in my mind, [that is] part of the preparation [for medical school]. So honestly, it wasn't too terribly difficult, especially because my

mentor worked quite a bit. It's not like she took a lot of vacations, and so it wasn't like my week that I wanted to go back, she was gone or anything like that (Rebecca).

Daniel also referenced the distance from the mentor along the same line:

I went to school at [a college in Kansas] and [my hometown is] about four hours from [college town]. So, I'd only shadow on breaks. So, I'd go back for, like Thanksgiving or Christmas or something or summer maybe, if I needed more hours. And I would try to do all of my hours in a week because I also had a job at [my college]. So, I had to balance between working and then also getting a lot of shadowing hours done, which wasn't unbearable. I mean, the requirements are very doable and very manageable (Daniel).

Caitlin was another Scholar located far from her mentor.

I did most of my shadowing whenever I was home on breaks, just 'cause I went to [my undergrad], and I was four hours from home. Her office manager would email me the schedule for whatever month I was coming. So, if I was going to be there over winter break, she'd email me her December schedule, and then I would just look at it, and I just tell her what days I wanted to come. It was pretty informal (Caitlin).

Megan had a similar experience. "Always over my breaks. I don't think I ever went home just to shadow. Actually, no, one time, I did come home for the weekend, and she had a baby delivery, so I hopped in on the delivery, but that was the only time." Large amounts of time with the mentor over smaller periods were standard with all but one Scholar. This amount of time allowed for mentoring to occur during the down hours of the clinic.

James had spent time shadowing before the SRH program, and the amount of time he spent with one person allowed mentorship to happen. James responded when asked about the number of hours spent shadowing a mentor by saying:

I thought it was helpful. I had done shadowing, but it was in blocks of like afternoons and just like here and there. I didn't spend an extensive amount of time with one physician. I thought it was helpful because I grew. Before, I was kind of timid and asking questions. The doctors, I didn't know them well, so doing, it was like 250 hours, whatever it was we were trying to do. I got a lot more comfortable, and so we were able to talk about stuff easier (James).

The former scholars shared similar experiences with James. As the shadowing hours added up, more mentoring began to happen. Mentoring could be in the form of the mentors asking encouraging questions, instilling confidence in the Scholar, or conversing about the Scholar's future. However, time spent with the mentor primarily occurred during breaks in the college academic calendar. Participants spent most of the time with the mentor over fall, winter, spring, and summer breaks. Most of the time spent with the mentor was in the clinical setting.

Program Requirements Produced Opportunities for Mentoring

I asked Scholars about the support provided by their mentor throughout the SRH experience. *Support* was one of the mentor qualities that Scholars appreciated. Participants discussed support in different ways, but part of the support discussion centered on the SRH program requirements. It was evident from the interviews that mentoring occurred while completing program requirements outside of the shadowing hour requirement. Almost all Scholars used this time to talk about the case study SRH program requirement and the MCAT, which helped answer the third research question.

Many of the Scholars spoke about how their mentor helped to complete their case reports. Each Scholar had to complete three case reports for the SRH program, and many had help from their mentors. Case reports are write-ups on an outpatient or inpatient with a preventive health

issue or a patient with mental health issues. The purpose of each case report is to evaluate if a Scholar can effectively communicate a case that was seen with their mentor and discuss a potential diagnosis, treatment, or prevention plan. Mentors are not formally provided information from the SRH program about completing the case study reports and are not required to complete a report. Caitlin said:

[my mentor] was always really helpful, especially with like picking things out for case reports. Like she'd say, Oh, that'd be a great thing for your case report. And she would help me like process, whatever it was. If I was going to do it for a case report, she lent me books that she had out of her office to read through, and she would do that for all sorts of things. It wasn't just for case reports. I remember one time we had a patient come in that wanted to have some certain OB thing done that she didn't do. And I had no idea what it was. And instead of just like, 'Hey, Google that,' she gave me a textbook to take home and read about it. She has a ton of books. And so that was something that I thought was really cool (Caitlin).

Anna had a similar experience to Caitlin when it came time to completing case reports.

I think that he was very helpful because one of the big things we had to do for scholars was write the case reports. He worked really hard; he would look like a week in advance and see if we had any cases that would be interesting for me to write a case over. He was a really good resource for me to ask questions. He was also very open to helping me with my case report and giving me feedback on that (Anna).

Rebecca shared the guidance and support given by her mentor during the case reports. "She was helpful in pointing things out and being, 'Oh, this could be really interesting.' And then, of course, she was helpful with giving me more background on the patient and helping me

93

get access to their history and things like that." Since the Scholar is only required to complete

three case reports, Rebecca pointed out that help was needed to find and narrow down the

exciting cases. The SRH program provides example case reports, but a lot falls on the mentor to

help the student pick a case worth detailing. Rebecca continued to explain how her mentor took

extra steps to ensure each report would be of interest to the program director. A case that would

captivate her attention and make it worthwhile, not only for the SRH program requirements but

also for her long-term medical education.

James explained how his mentor helped with the case reports.

He would give me some of his old textbooks that he thought were relevant, and then also

he would print out the patients, like EMR records. That would be for what I was going to

do the case [report] over. And then if I had a question, if I didn't understand a part of it,

he would just tell me to shoot him a text. I would text him. And if he thought he could

explain over the phone, he would. Otherwise, he would wait until I was back in like the

clinic to talk about it. So, yeah, he's really helpful with that (James).

Loaning out textbooks or medical journals was a common occurrence; it was a simple gesture by

the mentor that was memorable for the Scholar.

One Scholar mentioned the case reports and mentor involvement but in the opposite

manner. Thomas did not have the same support completing the case reports as the other students.

Thomas explained how his mentor did not know much about the program:

That was sort of frustrating at times, especially for writing the reports, and I don't know

if they still do that anymore? I'd be like trying to explain to him that I need a patient to

write about. And I remember him saying on more than one occasion. 'Well, you know,

you can't put the name in there.' I was like, 'yes, I know.' It was just kind of weird to me

that he didn't understand quite fully, but I mean, it was fine. It worked fine, but I do wish

it would have been easier to write those reports had he known kind of what I was trying

to do (Thomas).

Scholars also shared how their mentors offered guidance and support for taking the

MCAT. The MCAT exam is often the last hurdle standing in the way of the Scholar entering

medical school. William shared:

I remember gearing up to take the MCAT, and my mentor offered a lot of

encouragement, but it wasn't like my college counselor or anything, you know what I

mean? It was more of a *you're going to be fine*. He wasn't like, well, if this happens plan

for this, or if this happens plan for that, like a college advisor or someone would I guess

(William).

In William's case, mentoring took place in support when he was preparing to take the MCAT.

His mentor had just begun medical practice, so he was not far removed from the MCAT exam,

so he offered comfort due to a shared experience. William continued to explain how having this

type of person in his life was impactful. His mentor understood the exam he was preparing to

take and the importance of the medical school admission exam. Megan also had a similar

experience with her mentor. "Other than the shadowing, I know I kind of ran questions about

studying for the MCAT by her, and she was really helpful with that."

Thomas, who had a mentor who was not helpful with the case reports, also explained

how his mentor helped with the other program requirements.

I sort of knew to get into medical school I had to get some hours in shadowing, but the

mentoring was kind of a new thing. I mean, he gave me a lot of advice for like MCAT

studying and that kind of stuff and kind of advice even for medical school sometimes. So,

I hadn't, I hadn't really made the distinction until I started that shadowing. Having a

mentor is sort of, there's sort of two different things. He was really helpful and

encouraging (Thomas).

Thomas explained how his mentor passed on information about the MCAT, and his mentor

understood the pressure the exam places on the test taker.

Scholars had similar experiences to Thomas, where there came the point when it was no

longer just about the shadowing. The mentors helped each Scholar in multiple ways when it

came to preparation for medical school. Scholars' experiences about medical school preparation

led to the third theme that helps answer the research question about when mentoring occurred.

Continued Mentoring

Scholars' approaches to planning for their future indicated a third theme that occurred in

answer to the research question. In the context of this study, the theme is titled *continued*

mentoring. Scholars explained that their mentor offered guidance for their future careers, and

many kept in touch with their mentor after completing the program. This guidance came

concerning financial advice, medical school advice, and mentors' steady contact with the

Scholar. Mentoring was evident before the Scholar entered medical school, but the mentoring

relationship did not end after the program.

A few of the Scholars mentioned how their mentor gave guidance on their campus choice

for medical school. Scholars make their campus decision in the spring before matriculation.

Elizabeth told how influential her mentor was in selecting her campus location.

[My mentor] also really helped with some of my decisions, like trying to figure out if I

wanted to go 'two and two' [years]…[in] Wichita or [for] all four [years] in Kansas City.

I talked to him a lot about that and like what him and his brothers did. And I think he was

one of the big reasons I chose two and two, because he talked up the Wichita residency

programs, and really enjoyed his experience there. And I think that was one of the

deciding factors to decide that I did want to go to Wichita for like my clinical years in

med school (Elizabeth).

Daniel had a similar experience. His mentor helped to rank his campus preferences. Based on his

mentor's advice, Daniel chose to participate in the track that had him spend two years in Kansas

City and two years in Wichita.

Elizabeth also explained how her mentor helped her decide if applying for the Kansas

Medical School Loan (KMSL) forgiveness program was the right decision. Her mentor had

helped with the decision-making process by asking her what she wanted to get out of medical

school. She ended up applying and receiving KMSL due to her mentor's guidance and her

mentor's positive experience with receiving KMSL.

Megan recalled advice given by her mentor when she was preparing for medical school.

Megan's mentor wanted to meet one last time before Megan matriculated into medical school.

Megan said:

The last time I shadowed her for the Scholars' Program, I did sit down and talk to her

about what to expect from medical school, how to prepare for it. Kind of getting the right

mindset for it. And she helped me quite a bit with that too. Getting mentally ready for

medical school (Megan).

Megan then continued to explain how that conversation included more than just getting ready for

medical school.

I don't think she [the mentor] grew up in rural Kansas. She chose, though she did do

KMSL, she chose to do rural practice in medical school. She was honestly very honest

about the struggles and the benefits of practicing in rural Kansas. And it was helpful for

me to hear both sides from her (Megan).

Megan did not talk about the mentor, encouraging her to do KMSL but did explain that she had

other physicians in her life to help answer questions. Megan's mentor helped with essential

decisions leading up to medical school.

In the transcripts, it was apparent that mentoring did not stop once a Scholar entered

medical school. The former Scholars spoke of many instances of maintaining the relationship

with their mentor. Scholars explained how they would still occasionally reach out to their former

mentor with a text or email, see them around town, and many had spent or will spend time with

them during medical school. A vast majority of the participants mentioned returning to their

mentor's clinic for a Scholarship Enrichment Remediation (SER) week experience or over the

summer for the Summer Training Option in Rural Medicine (STORM) program. SER week takes

place during the ninth week of each academic block during the first two years of the KU SOM

curriculum. Each SER week includes multiple enrichment activities that a medical student can

choose, some of which are rural medical experiences. STORM is a summer rural medical student

experience that places students in family medicine rural clinics. The program takes place

between the first and second years of medical school.

I went back for a rural SER week and went back with the same doc as well as I did the,

what's it called? The storm program, the summer term of rural medicine, between my

first and second years. I went back and did it in the same clinic, and it was with the same

doctor as well. So, I've had a lot of follow up with him and a good experience

(Christopher).

Anna also had a similar experience to Christopher. Elizabeth said, "I had my rural SER week. I went to his colleague, the other doctor in that practice. And so, I saw [my mentor] that day, like that week too, and talked to him and just kind of caught him up on med school."

Megan even spoke about how her mentor provided an opportunity for her to join Summer Training Option in Rural Medicine (STORM) when she thought she would not be able to go. She explained:

> I was originally going to go to [a new rural location] because I was recommended to go to a different hospital than …[where]… I shadowed for scholars to get a different experience, but with COVID, they declined to take me. And I'm going back to [my hometown with my SRH mentor] (Megan).

Megan's mentor was flexible and allowed for the last-minute change to participate in STORM.

A few of the Scholars explained a similar thought process to Megan. The Scholars did not want to return to their mentor's clinic for a Scholarship Enrichment Remediation (SER) week experience or over the summer for the Summer Training Option in Rural Medicine (STORM) because they wanted to broaden their rural Kansas experience. Caitlin explained, "Whenever I've had an opportunity to do anything rural like I did a rural SER week, and I'm doing STORM. I haven't picked [my mentor's location] because I have so much familiarity with the town that I wanted to go somewhere different." When I asked Jessica if she returned to her mentor's practice during medical school, she responded:

> I didn't, and that was very intentional actually because I wanted to make sure that I, one was networking and two, I wanted to see how other communities in Kansas practice rural medicine. I didn't want to have just this one idea in my mind and be upset or shocked. And if I go somewhere else in the future and it's either much better or much worse. So, I

wanted to have a better picture of what that was like [medicine in various rural

communities] (Jessica).

The transcripts had various examples of when mentoring occurred for the SRH program

participants to answer the research question of when did mentoring occur for participants in the

Scholars in Rural Health program? Mentoring was not limited to the 200 hours spent shadowing,

but rather occurred throughout the program and beyond. The mentor had the opportunity to

influence a premedical student's life in ways that were not limited to the SRH program. Many of

the research participants still maintained close communication with their mentors.

Improving the Mentee Experience

At the end of the interviews, I asked each participant questions about how to improve

mentoring, the experience, and the program in general. Three major themes that answered the

research question of how to improve the SRH program were present in the data: barriers to

mentoring, mentor guidance, and guidance for future scholars. These themes not only appeared

at the end of each transcript when asked about program improvement but often appeared

throughout the interview.

Barriers to Mentoring

The main suggestion of improvement for the SRH program was removing barriers to the

mentoring experience. Two codes were apparent in the theme *barriers to mentoring* that

addressed the research question of how the mentee experience can be improved. The two codes

for barriers were *location* and *time*. Only one Scholar had a mentor located in their college town,

so the others were left finding time to make it back to their hometown. It was finding time to

return home that proved to be complicated. Returning to the hometown often occurred over

breaks in the college academic calendar. The main component of the SRH program is spending

200 hours with the mentor. The former Scholars had suggestions about the 200 hours portion of the program.

A few of the scholars mentioned issues with finding time during academic calendar breaks. Jessica mentioned, "It would be hard to get my hours in just because she [the mentor] has kids in middle school and elementary school. And so, if they took vacations like ski breaks or spring breaks, sometimes I would really sweat about getting my hours in." Caitlin explained how it was tough to get the final spring hours in due to when the Scholars' annual meeting was held, and her mentor was gone. "I wasn't getting in any time in the spring because her spring break always, I think it both years, it fell the same time as mine. And she always goes somewhere with her family." Megan had a similar experience in the spring. "I did have some difficulties finding time to shadow her, especially I think the last spring semester. Like she was on vacation for spring break and then the deadline was really quick after school started, so it was tight there." William also talked about the time barrier.

> That's one thing that was difficult. I mean, summers were usually fine, which there's only one. The winter ones were difficult. I mean, we get like roughly four weeks off for school and then by the time you get it, the holidays worked in, depending on how the days are set up and depending on your family stuff, it takes almost like two weeks to get your hours, like for the 40 hours. And just because of how the holidays would fall or something. For example, I think one year, Christmas was like in the middle of the week. And so, they took the second half of Christmas Eve and Christmas day off and then the same thing for like New Year's Eve and New Year's Day. I mean that just made it, it wasn't anything that they did or that I did. It was just one of those things where like, it's

hard to get ahold of clinic day in which you're wanting to do an eight-hour day

(William).

William continued to talk about this issue as he completed his senior year in college. William had a senior design project for his engineering major that required him to stay in his college town and made it challenging to meet the mentor hour requirement in his last year.

Thomas, the only participant who had a mentor in his college town, provided an alternate view. Many Scholars mentioned a preference for shadowing in smaller chunks of time, such as an afternoon here or there. The Scholars mentioned that it would be possible to spend a smaller portion of time with a mentor if he or she were based closer to the Scholar's undergraduate campus. However, Thomas had this opportunity and offered his perspective:

It might've been more productive had I been able to spend longer chunks of time because a lot of my time, I was there for probably three hours, usually at the most. You don't get a good feel for the structure of a day when you're just there for three hours at a time. But I also liked doing it every week and kind of keeping it fresh in my mind and not just doing it for a week at a time. So, there's pros and cons, I guess, to both sides of that (Thomas).

The other finding in the theme was that location proved to be a barrier. The two codes, location and time, were similar but were talked about in two different ways. The location of the mentor proved to be a barrier. However, often when a Scholar discussed barriers to their participation in the program, they referred to both codes of location and time. Anna explained how location and time were a barrier to her mentoring experience:

I think it may have been more productive if I had a mentor closer to where I was going to school. Sometimes when you're not in the groove of being in the mindset of [the] clinic, I guess you could say, you go in and do a week-long at a time. I really enjoyed all my time,

but sometimes when you're not fully participating in it, I guess you could say just because I was just shadowing, the days would get a little bit long. So, I think that it may have been more productive if I was able to go in like two or three afternoons a week and make it more chopped up. If that makes sense? (Anna)

Jessica shared a similar thought and added that she did kind of have a mentor in her college town:

It really would have been nice to have been able to shadow closer to college and just do that more consistently. Especially from the student perspective, because sometimes when you're doing your premedical coursework, you just get really bogged down, and you're like, why the heck am I doing this? And then, every time I got to go home, I would be in the clinic. I'd be like, okay, yes, this is why I'm doing this. So, I don't know if it's something where you could have split time between mentors or something? Obviously, you would want most of that, I think, to be still in your rural community. But it would have been nicer, and essentially that's kind of what I did. I had another mentor in [my college town] (Jessica).

Although not a formal mentor through the SRH program, Jessica explained a second mentor like a dual mentor experience. A second mentor was also the recommendation James provided. "If you were to have like two mentors, one more close to your college campus or wherever your residence is at the time, or even if that was your primary one, I think you'd be able to get more opportunities to shadow," said James. Daniel continued to talk about this barrier. "I really can't complain about the mentoring thing. I learned a lot from my mentor. The only issue is he's four hours away. That's the only thing that was unfortunate. There's nothing that you can really do to fix that."

Each former Scholar participant discussed barriers to the mentoring experience of location and time. Only one Scholar had a mentor in their college town, but this barrier was still evident in the transcript. It was evident that each former Scholar had thought about the commitment and time it took to maintain a mentor relationship in their hometown. The scholars shared similar experiences to what William and Jessica shared; the Scholars were busy in their college town, building a new life that was put on pause to find time with their mentor. Outside of having two mentors, or a mentor in the college town, there was no apparent solution offered by the Scholars to address each barrier. However, the Scholar's acknowledged that location and time were a barrier.

Mentor Guidance

Scholars offered feedback on what would help mentors in the program. Responses helped answer the research question on improving the program. Scholars thought a mentor should be made aware of certain SRH program aspects before accepting someone to mentor. Elizabeth spoke about prepping the mentors with questions to have better use of time spent together. Elizabeth said, "When you let a mentor know they're going to have a rural scholar, be like 'don't forget to ask them these kinds of questions.' Maybe they [program administrators] all already do, but that's a good way to gear your time with them." She continued by adding that mentors should be aware that the Scholar could spend time with other physicians. Elizabeth explained that her mentor said:

> 'If you want to go shadow somebody else, you definitely know how I do things.' So
> sometimes I would do that. I think if the mentors realize that another doctor in town
> aligns their work with your mentee's goals, feel free to send them over to them for a
> couple of hours (Elizabeth).

Thomas was a scholar who felt he lacked support from his mentor while completing the program requirements. Thomas suggested "making sure that they [mentors] know kind of what the program requirements are and maybe some ways to be helpful in like on the case reports, for instance. That's something that I probably could have used some assistance with." Thomas explained that his mentor was unsure of program requirements and kept checking in with him to determine what else was needed. It was on Thomas to communicate his mentor's expectations because his mentor was never made aware of, or had forgotten, the SRH program requirements. Daniel compared the SRH program to medical school and offered an interesting suggestion for improving the mentoring experience. Daniel said:

I'm sure there's a curriculum for the first year [medical students], and there's a curriculum for second years, and there's a curriculum for third and fourth years. And then, so by that same train of thought, you should probably have a solid understanding of these things to work on for medical school. I'm not saying that your mentor should teach you everything that you need to know on the MCAT or everything you need to know for step one or like, Oh, I remember this from boards and blah, blah, blah, but just like some general concepts, that someone coming into medical school isn't going to know a lot about. Maybe a cheat sheet for the attending to be like do you know what this is? And I don't know what concepts those are or anything like that, but just something to kind of give the attending to be like, this is kind of what they need to know going in [to medical school], but don't bind them to that by any means. They need to know this, this and this. If you want to teach them, this is what you could teach (Daniel).

Rebecca offered a similar suggestion about "formally setting some objectives or things like that. That way, there's no question about what's expected at the end of the 200 hours or just

maybe at the end of every week." Rebecca continued to talk about setting the objectives to be progressive. Each semester the goals or objectives would build off earlier concepts that the mentor taught. Like the curriculum suggestion Daniel gave, as time with a mentor increased, so would the objectives.

Anna offered a suggestion based on the *hands-on* theme she had shared earlier. Anna's mentor did not offer many opportunities to be hands-on. Anna said, "there's obviously limitations, especially with Scholars, being too hands-on for people that aren't in med school yet. But I think that the more you're willing to let students do, the more interesting it is for them. The more engaged they'll be into the whole situation." Anna had not previously explained that she was disengaged during the program. However, it was apparent that having a more hands-on experience would have been a more exciting experience.

Guidance for Future Scholars

The former Scholars also offered advice to help incoming Scholars be better prepared for the mentoring experience; these addressed the research question about improving the mentee experience. One of the two principal codes included in the theme of scholar guidance was *asking questions* or *journaling*. These codes also aligned with the earlier theme of mentor qualities presented in the findings of the Scholar's perceptions of mentoring relationships. Many scholars shared positive experiences with their mentor in the clinic; mentors always made them feel welcome and contributed to medical conversations. Rebecca recommended, "Don't be afraid to ask questions, even if you're afraid you might sound silly or look silly, just ask lots of questions about the medicine stuff, but then also about the behind the scenes stuff too." She added later that "it'd be a good idea to keep a journal of all shadowing hours and see the progression, because I mean you see so much that it's easy to forget." Elizabeth shared something similar:

106

Go in, ready to ask a lot of questions. Ask themselves what they want to get out of it

before they even go through [the program]. Check-in with themselves while they're

getting their hours. How have [their] goals changed? I think I would just spend a lot of

time thinking about what you just saw in clinic and how that is affecting your decisions.

Like, what kind of doctor, what kind of town, where [do] you want to end up if you aren't

already set on that? I mean, and I guess maybe not what kind of doctor, cause they do

want to do family med, but maybe what you want to focus on, like does your scope

include colonoscopies, do you want it to include like OB, deliveries and everything else?

Like what do you think you would want your focus to be? (Elizabeth).

Elizabeth also recommended that SRH program directors provide all Scholars questions to

discuss with their mentor before starting the program. "I think me, and my mentor ended up

talking about, 'what are your personal goals? What do you want to get out of this? What are you

interested in?' But I don't know if that's self-explanatory to everyone." William agreed that

Scholars should ask questions but also should take any opportunity to try something hands-on.

I would say just be enthusiastic and ask a lot of questions about the things that you're

seeing and be kind of proactive. I would always tell people, or I would tell the scholars if

they're offering to let you do something if you're nervous about it, say you're nervous

and then ask, 'how can I do this? How should I do this?' And definitely try and do it.

Unless you're just completely out of your comfort zone and not going to be able to do it,

I think getting any hands-on and any experience you can that they're offering you, like

they should try and take them up on that (William).

James recommended that Scholars should take notes and journal about what the mentor

said or did while in the clinical setting. He said, "anything you can do outside just listening and

107

standing, anything like physically doing something I think is very beneficial." Jessica agreed that Scholars should find ways to pay attention while with their mentor. Jessica explained:

> I don't even mean like, to just pay attention to like medically what's going on, but pay attention to like the patient-doctor relationship and pay attention to things that make you uncomfortable and that you don't want to emulate someday and things that you really admire and that you want to make sure that's part of how you practice (Jessica).

Another code found in the theme scholar guidance was advice for mentor selection. Thomas recommended that a scholar should find a mentor "that you feel comfortable around and is excited about their job." Thomas suggested that he had shadowed other physicians where it felt like the physician did not like their job as much. He continued, "but I don't know that that'd be practical advice because I think sometimes it's sort of, you get what you get, but I don't know? I don't know how it all works?" Thomas was a mentor that had previously shadowed his mentor, but the program director primarily selected his mentor due to location of the town in which Thomas played a college sport. Thomas ended with the thought, "that could probably be the thing [best advice] is if you have a good, a fun mentor, someone you feel comfortable around." Christopher had a similar response:

> I would make sure to vet my mentor well, because this is somebody that's going to be an important person in your life, potentially for the rest of your life. And, you just really need to make sure you're in a good spot where you're learning. You need to go in there with open eyes, open ears, because you can learn and really set yourself up for success (Christopher).

Christopher recommended that students should talk to the program director to find the best match for a mentor. Feedback on a mentor is a point that aligned with Caitlin's feedback. Caitlin recommended:

> I would just say it's all about picking a mentor. It would be good if it's somebody they've had a previous relationship with because that helps a lot. And just to pick somebody that really is what you want to do someday. With [my mentor], I mean, I knew that she was an hour away [from her hometown], but she was exactly how I wanted to practice someday. She has a practice doing OB and doing family medicine. She does everything that I want to do too. And so just finding someone that kind of aligns with how you want your life to look someday, which I know is hard, but I know it's cool. But I think that would be important. And, asking questions and making conversation and not just being a fly on the wall. Especially when you're a student, and you're shadowing, it's easy to get kind of nervous to ask anything or to say anything (Caitlin).

Summary of the Findings

The basic qualitative research design was the methodological approach that was best suited to investigating the mentoring experiences of the former Scholars. All participants had just completed their first or second medical school year at the University of Kansas School of Medicine. Scholars shared their responses during semi-structured interviews. I asked the core question: what was the mentee experience of former participants in the Scholars in Rural Health program? Interview questions also addressed the supporting research questions: what are Scholars' perceptions of mentoring relationships, when did mentoring occur for participants in the Scholars in Rural Health program, and how can the mentee experience be improved?

Mentee Experiences of a Scholar

Experiences with the mentor varied based on the physician mentor's type of medical practice and location. The two themes present in a Scholar's clinic experiences with their mentor were access to observation experiences and hands-on clinical experience. Each Scholar shared examples of having observed the daily life of their mentor. They saw how the mentor treated patients and were able to observe longitudinal care experiences. Often a Scholar would hop into the mentor's vehicle, usually mentioned as a truck, and drive throughout the county to check on patients.

Essential experiences for each Scholar happened outside of the clinic. A few scholars mentioned how out of state hospital systems or changes in payment models impacted the mentor's practice. Scholars received insight into the role of the physician that is often not shared with premedical students. Scholars were able to observe how a rural physician balanced their life and career. Scholars often mentioned how involved the mentor was in the community. Involvement in the community was an aspect of a mentor the Scholars admired. It was in these experiences outside of the clinic that Scholars gained the most value. Scholars were able to get an insider view of a rural physician's life and further strengthen their desire to practice rural medicine.

Perceptions of Mentoring

Regarding perceptions of mentoring relationships, the Scholars reported having had limited exposure to formal mentors before beginning the SRH program. Although students apply to the Scholars program after their sophomore year of college, only one participant mentioned any formal mentoring program participation before the SRH program. Each Scholar's lack of participation in mentoring before the SRH program could mean one of a few things. One,

110

mentoring programs do not exist in rural Kansas communities. Two, a college student from a rural community might not see the benefit of participating in a formal mentoring program. Finally, a Scholar did not feel like it was important to share a previous mentoring experience.

Scholars lacked words to explain what mentoring meant outside of a mentor as a person providing career insight. It was not uncommon for the Scholars to describe mentoring as shadowing. Scholars often used the words mentoring and shadowing in the same response, with Scholars not offering a clear distinction between the two. Scholars spent 200 hours with their mentor, but outside of being told the physician was their mentor in the SRH program, the experience was similar to previous shadowing experiences. Many of the Scholars had previously shadowed their mentor, so entering the SRH program and being paired with a physician they had shadowed did not give a clear sense of mentoring. A few scholars had spent time shadowing other physicians and did not see a difference compared to the SRH program until later in the mentoring experience.

However, the lack of involvement in a formal mentoring program before the SRH program does not mean mentoring was not happening. Respondents' reported lack of experience with a formal mentoring program or an informal mentor before the SRH program could have been due to having no clear understanding of mentoring. Often when I asked a question about mentoring before the SRH program, a Scholar would reference an experience during the SRH program. It was unclear if this was due to a lack of ability to recollect mentoring memories before the SRH program or no prior mentoring experiences to recall.

When did Mentoring Occur?

Most Scholars, all but one, spent weeks with their mentor at a time to fulfill the SRH program requirements. Weeks with the mentor would occur during breaks in the college or

university academic calendar. Winter break and summer break were the two most popular times to shadow. Scholars would not be in their hometown for long, so a week or two of consistent shadowing was the common theme. Only one Scholar had a mentor in the same town as their college. This Scholar, Thomas, mentioned that he spent smaller amounts of time with the mentor at each meeting, but the mentoring relationship overall was a more consistent experience.

Where Mentoring Occurred

During the time with the mentor, Scholars shared mentoring incidents while they had to complete program requirements. Mentors would provide guidance throughout the program. Mentoring occurred when completing case reports for the SRH program based on patients observed during the time spent with the mentor and taking the MCAT. I also discovered that mentoring was not limited to the SRH program. Scholars received mentoring during the SRH program before matriculation into medical school, and many returned to spend time with their SRH program mentor during medical school.

Barriers to Mentoring

The final supporting research question about improving the mentee experience offered valuable insight into the barriers to mentoring.

Distance and Time

Scholars mentioned how, at times, it was challenging to return to their hometown to spend time with their mentor. The majority of Scholars had a significant distance between their hometown and the town where they attended college. The spring semester typically was a challenging time to meet with mentors due to the mentor's spring break schedule or the mentee's experience of finishing the school year. Only one Scholar had a mentor located in their college town, while all other Scholars had a significant driving distance to their mentor's location.

Guidance

Guidance for both the mentor and the mentee was also a theme for improving the experience. Scholars recommended that the mentoring pair needed more direction for the 200 hours spent with a mentor. Recommendations included giving questions for discussion to the pair, providing a more in-depth overview of the SRH program to the mentor, and offering a curriculum to model the experience. Scholars believed that a Scholar should have progress objectives to accomplish with their mentor as they moved through the program.

Conclusion

This chapter presented the qualitative data collected through the semi-structured interviews of the 11 former Scholars in the SRH program, Table 4. At the interview time, the participants had just completed their first or second medical school year at the University of Kansas School of Medicine. The first section provided a brief description of the research participants found in Table 3. Most participants had a relationship with their mentor before beginning the program and attended a college or university far from their mentor's location. After a brief background on the research participants, the next section introduced the themes found in relationship to the research questions.

The findings from the study describe the experiences of former participants in the SRH program. I grouped the 11 major themes found in the analysis into the research questions found in Table 4. Each theme included multiple codes that addressed each research question. The scholars had various experiences related to mentoring. However, to answer the main research question, the mentee experiences of a former participant in the Scholars in Rural Health program, two themes emerged: access to observation experiences and hands-on clinical experiences. Each Scholar experienced various ways of observing their mentor in the clinic, observing their mentor

in the community, and learning how a rural practice operated. Depending on the mentor and the

relationship between the Scholar and mentor, some Scholars gained valuable hands-on clinical

experience. These experiences included helping assist in procedures, delivering babies, or taking

vitals.

The next chapter provides a summary of the implications, recommendations, and a

discussion of the study's limitations. The chapter concludes with recommendations for future

research.

Table 4

Research Findings by the Appearance of Theme in Chapter 4

Research Question	Theme	Theme	Theme
What is the mentee experience of a former participant in the Scholars in Rural Health program?	Access to Observation Experiences	Hands-On Clinical Experience	
What are the Scholars' perceptions of mentoring relationships?	Understanding of Mentoring	Mentor Qualities	Role of Mentor is Multidimensional
When did mentoring occur for participants in the Scholars in Rural Health program?	Time with Mentor Occurred During Academic Breaks	Completion of Program Requirements Produced Opportunities for Mentoring	Continued Mentoring
How can the mentee experience be improved?	Barriers to Mentoring	Mentor Guidance	Guidance for Future Scholars

Chapter 5: Discussion, Implications, Recommendations, and Conclusion

The purpose of this basic qualitative research study was to learn more about the experiences of past participants in the Scholars in Rural Health (SRH) program. The University of Kansas School of Medicine has a primary mission of improving the lives of people in Kansas. The SRH program was created to address the future physician needs in rural Kansas. The experiences of Scholars in the SRH program were mostly unknown. The study sought to answer the main research question: what are the mentee experiences of a former participant in the Scholars in Rural Health program? To contextualize the main research question, supporting research questions that were addressed included: what are Scholars' perceptions of mentoring relationships, when did mentoring occur for participants in the Scholars in Rural Health program, and how can the mentee experience be improved?

To answer the research questions, I used a basic qualitative method. I used semi-structured interviews to explore the experiences of former Scholars in the SRH program. The basic qualitative study allowed me to understand how Scholars interpreted their experiences with their mentors during the program (Merriam & Tisdell, 2015). Each Scholar shared a wide range of experiences with their mentor that took place in the clinical setting and in the rural community. Most Scholars spent weeks with their mentor when completing the mentoring component of the SRH program. During a week with their mentor, the Scholar was with the mentor for an entire day. Scholars offered their input on making the mentoring experience and the SRH program better. This chapter includes discussion, implications, recommendations for reform of the SRH program, recommendations for future research, and a conclusion.

Discussion

The results of the study produced three significant areas for discussion. First, I discovered that the Scholars had an overall positive experience, but the experience was not uniform across the program. Second, the mentor's personal characteristics mattered for the SRH program participants. Furthermore, barriers of location and time existed in the SRH program but did not limit experiences. The following will provide an overview of each of the points for discussion.

Scholar Experience was not Uniform

The first area of discussion is that I discovered the Scholar experiences varied and were not consistent for all Scholars. A few of the scholars were able to experience hands-on experiences that were unique for a premedical student. Scholars paired with a physician who emphasized obstetrics and gynecology spoke about helping to deliver babies. Scholars shared experiences of scrubbing in alongside their mentor and offering hands-on help in the clinic--a unique experience for a premedical student. Scholars also spoke about giving stitches to patients, checking vital signs, interviewing patients, and experiencing their first time seeing a patient code. The in-depth experiences were opportunities for Scholars that many medical students might not experience until later into their curriculum.

It was surprising to learn how hands-on the Scholars' experience had been. James mentioned, "a lot of patients probably aren't going to want some 21-year-old who isn't in med school doing stuff" but according to responses, many patients allowed Scholars to have hands-on experiences that are not common for premedical students. Scholars mentioned that many of the hometown patients felt comfortable having a Scholar alongside the physician. Megan mentioned that knowing the patients in her hometown made her more comfortable interacting in the clinic. Christopher spoke about how other Scholars had been assigned to his mentor, so patients were

used to Scholars in the mentor's practice. When the SRH program pairs future Scholars with mentors, a mentor who has had a previous Scholar might provide more hands-on experiences. The physicians who had been mentors previously advocated on behalf of the Scholar to have hands-on experiences. Often the mentor treated the Scholar as a peer in the clinical environment.

However, not every scholar was able to have hands-on experiences. The reason for the experiences not being uniform could be a lack of program goals or expectations for the mentoring experiences. The responses revealed some frustrations that the former Scholars had with their mentors not knowing the program requirements or unsure what to allow in clinical experiences. Communication of goals between the SRH program, Scholar, and mentor appeared to be lacking. A lack of communication of the SRH program goals appeared to influence the Scholar experience directly. Mentoring relationships need common goals, aspirations, and expectations to be successful (Cellini et al., 2017; Keshavan & Tandon, 2015). The SRH program needs to effectively communicate program goals so mentors know what rural medical exposure each Scholar should experience.

The literature supports training the mentor and the mentee to align goals and meet program expectations (Searby, 2014). A few Scholars expressed frustration that they did not ask their mentor to receive more hands-on experiences or that they had to remind their mentor of the program requirements. According to the mentoring pair competencies outlined by Clutterbuck and Lane (2004), a crucial first step to establishing the mentor-mentee connection is listening and articulating. Once a mentor pair establishes communication in a mentoring relationship, it allows for open questioning, preparing, and reflecting on the experience (Clutterbuck & Lane, 2004). When a mentor and mentee were comfortable in the relationship and knew the SRH program's intent, it allowed for more in-depth experiences. Scholars that mentioned more in-

depth experiences were also the same Scholars who mentioned their mentor had mentored other Scholars in the SRH program.

Although the Scholars participated in the same formal mentor program, Scholars rarely communicated their experiences with each other. If a Scholar had spoken about their experiences with the other program participants, it occurred with other Scholars at their university or the annual meeting, concluding the SRH program. If Scholars had an opportunity to hear about other Scholar experiences in a larger group, more might feel comfortable asking their mentor to provide specific experiences. Communication is a core component of successful mentoring (Keshavan & Tandon, 2015). The literature lacks research on mentoring cohort models seeking advice and insight from the group. Providing experiences for more overlap with the mentees and mentors could help to align program goals better. The literature does support speed mentoring styles (Britt et al., 2017; Cellini et al., 2017) that could help mentees learn more about other mentors and their practice in the program. Speed mentoring could be used at annual meetings or in the assignment process for mentors. If the SRH program provided mentors the opportunity to speak with other mentors, it could also help align experiences throughout the program.
It was not surprising that the mentoring experience varied among Scholars without clear mentoring goals or expectations. However, the wide variety of experiences Scholars had with the mentor was surprising. Many of the Scholars were able to gain experiences that many medical students do not experience until later in their medical education. Although the experiences varied, all Scholars spoke positively about their mentor experiences. Each Scholar was appreciative of the SRH program and the experiences their mentor provided.

Mentor Characteristics Mattered

The second area of discussion from the research study is the mentor's personal characteristics, such as being approachable, honest, caring, knowledgable, role-modeling, and encouraging to the Scholars. Scholars appreciated when their mentors were supportive of the Scholar, honest about their role as a physician, and encouraged the Scholar along their pathway to medical school. Scholars observed these characteristics in the clinical setting but also saw these qualities in observing the mentor in the community. According to the literature, mentors should have some form of the following personal characteristics for the mentoring relationship: self-knowledge, professional knowledge, communication skills, interest in helping others learn, relationship management (Clutterbuck & Lane, 2004; Nearing et al., 2020). The mentor's characteristics allowed for a robust experience and impacted three areas: social capital, relationship building, and goal alignment.

First, I discovered that the breadth of experiences would not have been possible without time available for mentoring and the teaching characteristic mentors exhibited described by the Scholar. As discussed above, Scholars had experiences that are uncommon for premedical students, and medical students typically do not experience them until later in the medical school curriculum. The shadowing experiences are a highlight of the SRH program and would not be possible without mentors. The literature showed that a lack of time for a mentee is the most common factor for failed mentoring relationships (Cox, 2005; Keshavan & Tandon, 2015). I attribute the wide variety of Scholar experiences to the mentor making time for the Scholar and teaching and exposing them to rural medicine's vast opportunities. The mentor often treated the premedical student more like a medical student, assisting the physician, interviewing patients, and allowing hands-on experiences with patients. A mentor's desire to help a mentee increases

social capital. Social capital includes personal connections or membership to a particular group that increases information or influence (Bourdieu, 1973; Cornileus, 2013). The literature highlights the lack of social capital in rural communities (Rivera et al., 2019), but the mentoring relationship created opportunities to increase social capital in a rural community. The mentor increased the Scholar's social capital by allowing experiences that increased medical knowledge and skills needed for medical school. The advanced observational and hands-on experiences would not have existed if it had not been for the mentors teaching characteristics.

Scholars often shared that their mentor encouraged them to spend time with other physicians. I found that it was common for a Scholar to observe other physicians in the mentor's practice. It was another form of increasing social capital by creating connections in the rural medical field. The Scholar responses aligned with the literature suggesting that mentoring can increase the mentee's social and cultural capital (Philip & Hendry, 2000; Rivera et al., 2019). The opportunity to observe additional rural physicians allowed Scholars to expand their experiences and what they were able to see in a clinical setting. Program administrators should highlight this component of the SRH program as an advantage for rural premedical students.

The accessibility and communication skills of the mentor helped build strong relationships in the SRH Program between the Scholar and mentor. Scholars lacked a clear definition of mentoring, but this is not uncommon because mentoring is often widely defined (Berk et al., 2005). This lack of a clear definition of mentoring did not take away from the experiences of the program. Even if a Scholar could not define mentoring, the mentor established a relationship that produced a positive experience. The Scholars rarely shared having prior involvement shadowing their mentor before the SRH program, but the mentor's ability to communicate and be approachable helped build a positive relationship quickly. One of the first

stages of developing a mentoring relationship is communication and goal clarity (Clutterbuck, 2005). The mentor helped the Scholar feel comfortable communicating, developed a positive relationship, and had professional medical knowledge to share. Mentors were interested in not only passing on information about medicine but taught Scholars about how to run a practice or what life was like as a community member. The mentor's ability to be approachable, easy-going, and communicate honestly was essential to take the experience from a shadowing experience to a mentoring experience. Each Scholar spoke about their mentor having overall positive characteristics. An interest in helping others learn is essential for mentors and to build relationships in mentoring pairs (Cluterbuck & Lane, 2005).

Having a strong relationship with the mentor helped Scholars communicate long-term goals. Every Scholar had the long-term goal of learning more about rural medicine and matriculating into medical school. According to Jacobi (1991), the SRH program helped the mentee achieve short- and long-term goals through mentor role-modeling and advice on career development. Short- and long-term goals are crucial aspects of a mentoring program. Mentors reaffirmed that medical school was the appropriate next step for the Scholar through their teaching characteristics. The mentor being a role model and making time for the Scholar was crucial in providing experiences that aligned with the Scholar's goals. Mentors wanted to show Scholars what medicine in a rural community was all about. The findings align with the literature on premedical program goals of guidance towards medicine and location (Faucett et al., 2017; Frei et al., 2010; Tan et al., 2018; Vasquez & Pandya, 2020). The study shows the significant role the mentor played in establishing and reaffirming the long-term goals of the Scholar. Characteristics of SRH program mentors proved to be an essential aspect of exposure to rural medicine.

The mentor's communication skills, accessibility, and interest in helping the Scholar learn mattered for building the mentor relationship. These characteristics were more important than how the mentors were selected. Mentoring programs commonly overlook mentor characteristics when making mentor pairings (Searby, 2014), and mentor characteristics are not a factor in the SRH program mentor placements. The literature supports that mentoring is more successful when participants share input in the mentor selection (Allen et al., 2006; Straus et al., 2013). Since most of the scholars had a previous relationship with their mentor, no significant findings were apparent in the data. The study participants assigned a mentor had reached out to the assigned mentor to meet before beginning the program requirements. The mentor's relationship-building skills were crucial in establishing a positive relationship for Scholars who did not know their mentor. Cox (2005) found that time invested in the relationship could overcome the lack of connection leading to an unsuccessful mentor pairing (Straus et al., 2013). The literature aligns with what William shared about not knowing his mentor but reaching out before the experience to make that connection. Once again, it was common that Scholars mentioned their mentors made time for them and allowed the Scholar to be by their side all day. Scholars mentioned spending time with the mentor inside and outside of the clinic. A few Scholars also shared examples of when their mentor called them outside regular hours to provide a particular medical experience, like helping deliver a baby. I found no differences in responses between those assigned and those who selected their mentor. The lack of differences is primarily due to the mentoring characteristics that helped quickly establish positive relationships. The mentor making time for the Scholar, communicating with the scholar, and relationship building skills played an essential role in the mentoring pairing. The SRH program administrators need to examine the characteristics of the mentor for future pairings.

Most of the study participants had male mentors, which is aligned with the current physician practice data for Kansas (AAMC, 2019a) and aligns with the literature on females being less likely to practice rural medicine (Rabinowitz, 2001; McGrail et al., 2017). However, the SRH program had paired four of the female Scholars with female mentors. Having female mentor pairings did not seem to be a crucial component of the mentoring process. Only two of the four Scholars mentioned that it was beneficial to see their mentor balance their role as physicians, community members, and parents. These responses were not gender-based, and other Scholars shared similar responses. Each Scholar also had mentioned that they one day hoped to be exactly like their mentor, but outside of saying the mentor was a great example of being a mom, no response was gender-specific. The literature points to having women in the mentoring pool as necessary (DeCastro et al., 2013), but the Scholars did not share responses that showed a variance in the experiences of gender-matched pairs in this study. Gender-matched mentoring pairs were not as crucial as the characteristic of role-modeling in the mentor.

The mentor characteristics of being accessible, making time for the Scholar, professional knowledge, communication skills, and an interest in helping others learn allowed each Scholar to come away with an overall positive experience. The mentoring experience supported each Scholar on their path to medicine. The mentor's characteristics of being a teacher interested in helping others learn (Cluterbuck, 2005) established a longitudinal mentor relationship. It was not uncommon for the Scholar to mention a continued relationship with the mentor after completing the SRH program. As Anna mentioned, "ever since starting scholars in rural health up until now, I still ask [my SRH mentor] questions about things." The literature on mentor characteristics focused on mentor pairing and relationship building, but this study showed the importance of mentor characteristics for the entire Scholar experience. Responses about the mentor qualities

affirmed that mentor characteristics were essential for a positive mentor experience. The mentor's characteristics helped the Scholar feel that the experience was essential to their development as a premedical student. A mentor with time for a mentee, strong communication skills, and wants to be a teacher is essential to consider when selecting mentors.

Barriers did not Limit Rural Mentoring

The themes present in the data related to mentoring barriers aligned with the existing literature on rural mentoring programs. However, the barriers listed in the literature did not prevent mentoring in the SRH program. The two most significant barriers for the Scholars were location and time. These two themes are also common in existing research on barriers to successful mentoring (Kashiwagi et al., 2013; Rivera et al., 2019; Straus et al., 2013). Rather than prevent mentoring in the SRH program, the study found that barriers changed how Scholars spent time with their mentor. Only one Scholar had a mentor located in their rural college town, but all other Scholars talked about the time it took to get to their mentor. A mentor far from the college town eliminated the possibility of shadowing for a few hours when available and caused Scholars to shadow in large chunks of time when they were home. I want to address two main points about barriers in rural mentoring. First, barriers point to the need for flexibility in the SRH program. Second, barriers created a longitudinal experience due to the larger chunks of time spent with the mentor.

Although Scholars spoke about their mentor making time for them, multiple Scholars spoke about the difficulty of finding time with their mentor while they were at home. Mentoring while at home over a break caused conflicts when balancing time at home with family over holidays with meeting the SRH program's expectations. Caitlin mentioned that the mentoring location prevented her from shadowing whenever she might like; this was a common theme

among the Scholars. Mentors often took time off during spring break or winter break, causing the

Scholars to scramble to find a time that worked for both the mentor and mentee. Time is a

leading cause of unsuccessful mentoring relationships (Levy et al., 2004; Straus et al., 2013).

From the Scholar's perspective, it seemed that finding time with the mentor was just part of the

program. As Daniel mentioned in his response about traveling to spend time with his mentor,

"there's nothing that you can really do to fix that." Finding time with the mentor was

challenging, but no Scholar mentioned that it prevented them from meeting program

requirements. In part, this was due to the program director's flexibility in allowing the Scholars

to make up for mentoring time conflict by scheduling time with their mentors during a different

semester. This is an important thing to remember as program leadership changes. Scholars

should have information about the flexibility of meeting the mentoring hour requirement; this

suggestion was not present in the literature on barriers to rural mentoring.

Time and distance between mentors and mentees can lead to an unsuccessful mentoring

relationship (Kashiwagi et al., 2013). No Scholar mentioned that the relationship was

unsuccessful or did not meet the mentoring time requirement, but location and time proved to be

barriers. Distance and time impacted the mentoring relationship but not in a way that made the

experience unsuccessful. The study showed that barriers in the SRH program helped to create a

longitudinal experience. Scholars spent longer chunks of time with their mentor, and in turn, this

created a longitudinal experience. The Scholar's time with their mentor produced meaningful

experiences that might not occur if only shadowing an afternoon per week. Knowing that barriers

to mentors exist in rural locations can help rural pipeline programs navigate the barriers. The

findings show that although barriers might exist in rural mentoring, mentor program

administrators can address those barriers. Barriers should not prevent pipeline programs from

expanding their reach out of fear of time and distance impacting the mentoring relationship. Mentoring pipeline programs can use time and distance barriers to create a more immersive experience by encouraging longer times with the mentor if meetings are infrequent. The SRH program can encourage Scholars to spend consecutive days with their mentor rather than worry about constant commuting to the mentoring experience. Addressing location and time as a barrier will be in the program recommendation section.

Implications of the Study

This study's findings have practical implications for strengthening mentoring and increasing rural premedical students' support in the SRH program. A goal of the University of Kansas School of Medicine (KU SOM) is to recruit, matriculate, and train students from rural Kansas that have a higher likelihood of practicing rural medicine. There is a need to understand the rural premedical students already in the KU SOM pipeline programs, specifically the SRH program. As a result of the research findings, the following includes three recommendations for the SRH program. The three recommendations address strengthening the mentor pairs, supporting the Scholars, and removing barriers to mentoring. The following three recommendations for practice aim to improve the overall quality of the SRH program for both the Scholar and the mentor.

Recommendations for the Mentoring Pair

The data revealed that Scholars had a variety of mentoring experiences. The mentoring pair had little guidance on what to include in the mentor experience. The SRH program should provide mentoring pairs with training and guidance to have a more consistent mentoring experience. Once a mentor is assigned a Scholar, program administration should provide a brief background of the SRH program, the training it provides, and the program's goals. The

workshop would help the SRH program administrators learn more about the mentors'

characteristics before entering the mentoring relationship. The workshop would advance the

mentoring aspect and build a stronger bond between the mentor and the Scholar.

The one-day workshop would define the program's goals, offer suggestions for time

spent with the mentor, and outline goals for the experience. A workshop would help mentors

understand the SRH program's goal and increase exposure to rural medicine in hopes that a

student would return to the rural area to practice. The workshop would highlight what mentor

characteristics past Scholars have found beneficial. During the workshop, a mentor would meet

their mentee and develop goals for the program's two years. The workshop would address the

research finding of Scholars not having a consistent experience during the SRH program. A

workshop can outline experiences that the SRH program recommends for all Scholars.

The workshop would borrow concepts from the SRH program orientation and the

Colorado Mentoring Training program that focused on mentorship, goal setting, communication,

the importance of mentoring (Nearing et al., 2020), and how each of these aligns in the SRH

program. The findings from the Colorado Mentoring Training program reported growth in

mentorship-related skills and in a mentee's ability to connect with future potential mentors

(Nearing et al., 2020). The one-day workshop would allow Scholars and their mentors to develop

a relationship and meet others participating in the SRH program. The SRH program director

could use a pre- and post-evaluation survey to assess the workshop's effectiveness. If needed, it

would lead to a lengthier training focused explicitly on the mentor or the Scholar.

Daniel suggested creating a curriculum for the mentoring experience. Creating a

curriculum for the SRH program was an excellent suggestion and is worth exploring. The first

step would be to establish a training workshop for the mentoring pairs to set clear goals and

expectations. After program directors have established an SRH program workshop, the SRH

program directors could develop a curriculum with input from the mentor and mentee. An SRH

program curriculum could include objectives that become progressively more advanced over the

two years in the program. Until the SRH program establishes a curriculum, the scholars' other

recommendation was to encourage journaling and asking the mentor questions. Scholars should

be provided with a journal at the start of the SRH program. The journal should include the

program requirements, clinical time guidelines, questions to ask, and goals to accomplish.

Recommendations for Supporting the Scholars

The research focused on the mentee's interpretation of the mentoring experience. It was

apparent that the program should provide additional support for the Scholars. The

recommendation is to add support for program requirements in addition to the Scholar workshop.

The two most prominent support areas are the mentoring experience and the Medical College

Admissions Test (MCAT). To accomplish the support aspect of the program, Scholars must first

know why they are assigned a mentor.

The issue with the Scholars that participated in the study is that they had limited

experience to know what mentoring meant. As Scholars spent more time with their mentor, their

viewpoint changed from a shadowing experience to a mentor experience. The SRH program

must provide a clear definition of mentoring that will then be introduced in the SRH program

workshop. The workshop would be an opportunity to go over program requirements, like the

case reports, with their mentor. Participating in a workshop with their mentor should help to set

clear expectations for the time spent with their mentor and offer support to begin the mentoring

experience.

The MCAT requirement was never a part of any interview question, but many Scholars specifically talked about the MCAT. The literature on the MCAT shows disparities in scores from rural applicants (Shipman et al., 2019), so it is apparent that resources are needed. Multiple courses are offered for premedical applicants preparing for the MCAT; preparation programs are expensive, so funding would need to be secured. Currently, Scholars receive an overview of how to study for the MCAT at orientation, but additional resources should be given to Scholars to help them to effectively navigate the MCAT exam. The MCAT should not be a barrier for SRH participants to enter medical school.

Recommendations to Address Barriers

The administration must address barriers to mentoring in the SRH program. The common barriers of location and time were consistent in the data and aligned with the literature (Kashiwagi et al., 2013; Rivera et al., 2019; Straus et al., 2013). When I asked Scholars how they would address these barriers, their recommendations included having a mentor located in their college town or close to that town. The Scholars' suggestion is what researchers refer to as a shared mentoring model (Keshavan & Tandon, 2015).

Literature suggests that shared mentoring models help address barriers of location and time (Keeler et al., 2018; Straus et al., 2013). A shared mentoring model would allow scholars to have a mentor in their hometown and in their college town. Shared mentoring would be beneficial for the Scholar and the mentor; for instance, a mentor would not be subject to time constraints during their work with the mentee in the clinic. A shared mentoring model would help accommodate an increase in program size because mentors could devote time to multiple mentors if needed.

Scholars did not mention connecting or communicating with their mentors virtually. As COVID has moved academics to a more virtual format, it would be possible to move specific mentoring components virtually. Virtual mentoring would allow a mentor to stay connected without location being a barrier. Communication with mentors occurred through email, text, or phone calls, but Scholars did not mention video meetings. Virtual mentoring could also help Scholars learn more about telemedicine, an avenue that could be instrumental in healthcare delivery to rural areas (Kohler et al., 2019; Mehrotra et al., 2016; Potter et al., 2014). The SRH program should explore virtual mentoring as a communication avenue for future mentoring pairs.

Recommendations for Future Research

An annual evaluation of the SRH program by the program administration can measure the above recommendations' success. Program administrators ask Scholars at their annual meeting for program feedback but do not record the information. A formal assessment can help track changes in the Scholar experience, mentor characteristics, and support during the SRH program. In addition to a formal assessment, the following are my recommendations for future research. Future research should explore mentoring opportunities available in rural Kansas, research on mentors, and mentor selection.

The research questions did not specifically address any formal or informal mentoring available in rural communities. The study did not explore the mentoring opportunities available to Scholars in Kansas before the SRH program. Scholars did not share many prior mentoring experiences, and future research should explore what opportunities for mentoring exist in Kansas' rural locations. Exploring the mentoring options available to rural students based on geographical location is a need for future research.

Rural premedical mentoring is a topic that needs additional research. Premedical students from rural areas are more likely to practice medicine in a rural location (Halaas et al., 2008; Henry et al., 2009; Patterson et al., 2019; Rabinowitz, 2001). Mentoring can play a significant role in supporting rural premedical students. This study focused on one rural medical school pipeline program in a state with only one medical school. The results are not generalizable to other rural programs. I only explored the mentee experience, but future research should explore the mentor experience. Interviewing mentors would provide additional perspective on the SRH program experiences. Mentor responses would add to the information about premedical clinical experiences and barriers potentially impacting mentoring relationships.

The findings encourage additional research on mentoring pairs for rural students. Future research should include the topic of mentor selection. Research should explore how programs select or assign mentors. Mentor characteristics were an essential aspect of positive Scholar experiences, and future research should further explore mentor characteristics. The research should involve multiple programs to create a generalizable sense of best practices for creating mentor pairings in rural communities. Research should include mentor characteristics, mentor pairing, and how communication takes place in the mentoring pairs. As COVID has turned the world into a virtual environment, future research should include virtual mentoring and rural premedical students' impact. Telemedicine has become an essential service in rural locations, and the SRH program can use similar technology for mentoring (Kohler et al., 2019; Mehrotra et al., 2016; Potter et al., 2014). Virtual mentoring could prove to be beneficial in connecting mentors with mentees in rural areas.

Conclusion

This study aimed to explore the mentoring experiences of past participants of the Scholars in Rural Health (SRH) program. Mentoring programs are essential to increase career aspirations and prepare premedical students. Limited research is available on premedical programs for rural students. Before this study, no research existed on the experiences of a Scholar in the SRH program. The study extended previous work by adding the voices of eleven current medical students. They participated in a rural pipeline program by answering the main question: What are the mentee experiences of a former participant in the Scholars in Rural Health program?

This study provides an understanding of the mentoring experiences of Scholars in the SRH program and of the barriers that limited the mentoring experience. This study confirms that premedical students from rural areas face barriers when accessing mentors, even in a formal mentoring program. The study also confirmed that mentoring experiences varied based on the physician mentor's clinic and specialty type. This study also confirms the finding in previous literature on mentoring programs that mentors play a significant role in a mentee's ability to achieve success and in shaping their career aspirations. The study fills a gap in our knowledge about rural premedical pipeline experiences in the SRH program.

The findings benefit the SRH program's future to develop a consistent mentoring experience for all premedical students in the program. The study can serve as a starting point to develop a mentoring curriculum that will provide successful mentoring relationships in the SRH program. The curriculum can provide learning objectives to be achieved during each year of the SRH program. As research indicated, Scholars did not share a standard definition of mentoring. Often, mentors were unaware of the program requirements or what experiences were allowed

during the program. One potential strategy to address these findings is to develop a workshop for both the mentor and mentee that would lead to a curriculum that would organize the mentor-mentee relationship into a progressive series of experiences. A second strategy is to increase the support the Scholar receives during the SRH program. The third and final strategy from the study was to address the barriers of location and time in the mentoring experiences. To help accomplish each recommendation for SRH program changes, program administrators need to design a formal evaluation of the program for yearly implementation. A formal evaluation would help to measure the success of each reform based on the scholar's recommendations.

Medical students from rural backgrounds play an essential role in the future of healthcare in rural and underserved areas. As research indicated, the experiences of the Scholars were overwhelmingly positive. Mentors provided Scholars with experiences uncommon to many premedical students. Barriers did exist in the mentoring of the Scholars, but the participants were all motivated to achieve their dream of entering medical school. The study's findings will help inform the approaches taken by the SRH program directors and improve scholars' mentoring for years to come. Findings can also help other rural mentoring programs develop mentoring experiences. Mentors provide an excellent resource for the Scholars in the SRH program. Ideally, Scholars will return the favor and become mentors when establishing a future medical practice in rural Kansas.

References

AAMC. (2019a). *Kansas Physician Workforce Profile*. https://www.aamc.org/system/files/2019-12/state-physician-Kansas-2019%5B1%5D.pdf

AAMC. (2019b). *The Complexities of Physician Supply and Demand: Projections from 2017 to 2032*. https://www.aamc.org/system/files/c/2/31-2019_update_-_the_complexities_of_physician_supply_and_demand_-_projections_from_2017-2032.pdf

AAMC. (2019c). *2019 Fall Applicant, Matriculant, and Enrollment Data Tables*. https://www.aamc.org/system/files/2019-12/2019%20AAMC%20Fall%20Applicant%2C%20Matriculant%2C%20and%20Enrollment%20Data%20Tables_0.pdf

Akinla, O., Hagan, P., & Atiomo, W. (2018). A systematic review of the literature describing the outcomes of near-peer mentoring programs for first year medical students. *BMC Medical Education*, *18*(1), 98. https://doi.org/10.1186/s12909-018-1195-1

Alers, M., van Leerdam, L., Dielissen, P., & Lagro-Janssen, A. (2014). Gendered specialities during medical education: A literature review. *Perspectives on Medical Education*, *3*(3), 163–178. https://doi.org/10.1007/s40037-014-0132-1

Allen, T. D., Eby, L. T., & Lentz, E. (2006). Mentorship behaviors and mentorship quality associated with formal mentoring programs: Closing the gap between research and practice. *Journal of Applied Psychology*, *91*(3), 567–578. https://doi.org/10.1037/0021-9010.91.3.567

Barr, A., Garcia-Montalvo, J., Lindelow, M., & Serneels, P. (2005). *For public service or money: Understanding geographical imbalances in the health workforce*. The World Bank. https://doi.org/10.1596/1813-9450-3686

Bazemore, A., Wilkinson, E., Petterson, S., & Green, L. A. (2019). Proportional erosion of the

primary care physician workforce has continued since 2010. *American Family Physician*,

100(4), 211–212.

Beck, A. H. (2004). The Flexner Report and the standardization of American medical education.

JAMA: The Journal of the American Medical Association, *291*(17), 2139–2140.

https://doi.org/10.1001/jama.291.17.2139

Becker, B. K., Schiller, A. M., Zucker, I. H., Eager, E. A., Bronner, L. P., & Godfrey, M. (2017).

A day of immersive physiology experiments increases knowledge and excitement

towards physiology and scientific careers in Native American students. *Advances in*

Physiology Education, *41*(1), 137–144. https://doi.org/10.1152/advan.00165.2016

Bennett, K. L., & Phillips, J. P. (2010). Finding, recruiting, and sustaining the future primary

care physician workforce: A new theoretical model of specialty choice process. *Academic*

Medicine, *85*, S81–S88. https://doi.org/10.1097/ACM.0b013e3181ed4bae

Berk, R. A., Berg, J., Mortimer, R., Walton-Moss, B., & Yeo, T. P. (2005). Measuring the

effectiveness of faculty mentoring relationships. *Academic Medicine*, *80*(1), 66–71.

https://doi.org/10.1097/00001888-200501000-00017

Blanchard, J., Petterson, S., Bazemore, A., Watkins, K., & Mullan, F. (2016). Characteristics and

distribution of graduate medical education training sites: Are we missing opportunities to

meet U.S. health workforce needs? *Academic Medicine*, *91*(10), 1416–1422.

https://doi.org/10.1097/ACM.0000000000001184

Bourdieu, P. (1973). Cultural reproduction and social reproduction. In R. Brown (Ed.),

Knowledge, Education, and Cultural Change (pp. 71-84). London: *Tavistock*

Publications.

Bourke, L., Waite, C., & Wright, J. (2014). Mentoring as a retention strategy to sustain the rural

and remote health workforce: A rural mentoring model. *Australian Journal of Rural*

Health, *22*(1), 2–7. https://doi.org/10.1111/ajr.12078

Britt, R. C., Hildreth, A. N., Acker, S. N., Mouawad, N. J., Mammen, J., & Moalem, J. (2017).

Speed mentoring: An innovative method to meet the needs of the young surgeon. *Journal*

of Surgical Education, *74*(6), 1007–1011. https://doi.org/10.1016/j.jsurg.2017.05.004

Brooks, K. D., Eley, D. S., & Zink, T. (2014). Profiles of rural longitudinal integrated clerkship

students: A descriptive study of six consecutive student cohorts. *Medical Teacher*, *36*(2),

148–154. https://doi.org/10.3109/0142159X.2013.849799

Buddeberg-Fischer, B., & Herta, K.-D. (2006). Formal mentoring programmes for medical

students and doctors – a review of the Medline literature. *Medical Teacher*, *28*(3), 248–

257. https://doi.org/10.1080/01421590500313043

Bureau of Health Workforce, Health Resources and Services Administration (HRSA), & U.S.

Department of Health & Human Services. (2019). *Designated Health Professional*

Shortage Area Statistics.

file:///Users/bsteele/Downloads/BCD_HPSA_SCR50_Qtr_Smry.pdf

Butkus, R., Serchen, J., Moyer, D. V., Bornstein, S. S., Hingle, S. T., & for the Health and Public

Policy Committee of the American College of Physicians. (2018). Achieving gender

equity in physician compensation and career advancement: A position paper of the

American College of Physicians. *Annals of Internal Medicine*, *168*(10), 721.

https://doi.org/10.7326/M17-3438

Cathcart-Rake, W., Robinson, M., & Paolo, A. (2017). From infancy to adolescence: The Kansas

    University School of Medicine–Salina. *Academic Medicine*, *92*(5), 622–627.

    https://doi.org/10.1097/ACM.0000000000001455

Cellini, M. M., Serwint, J. R., D'Alessandro, D. M., Schulte, E. E., & Osman, C. (2017).

    Evaluation of a speed mentoring program: Achievement of short-term mentee goals and

    potential for longer-term relationships. *Academic Pediatrics*, *17*(5), 537–543.

    https://doi.org/10.1016/j.acap.2016.12.012

Cervantes, L., Chu, E., Nogar, C., Burden, M., Fischer, S., Valtierra, C., & Albert, R. K. (2014).

    A hospitalist mentoring program to sustain interest in healthcare careers in under-

    represented minority undergraduates: Hospitalist minority mentoring program. *Journal of*

    Hospital Medicine, *9*(9), 586–589. https://doi.org/10.1002/jhm.2218

Chen, C., Petterson, S., Phillips, R. L., Mullan, F., Bazemore, A., & O'Donnell, S. D. (2013).

    Toward graduate medical education (GME) accountability: Measuring the outcomes of

    GME institutions. *Academic Medicine*, *88*(9), 1267–1280.

    https://doi.org/10.1097/ACM.0b013e31829a3ce9

Chen, C., Xierali, I., Piwnica-Worms, K., & Phillips, R. (2013). The redistribution of graduate

    medical education positions in 2005 failed to boost primary care or rural training. *Health*

    Affairs, *32*(1), 102–110. https://doi.org/10.1377/hlthaff.2012.0032

Clutterbuck, D. (2005). Establishing and maintaining mentoring relationships: An overview of

    mentor and mentee competencies. *SA Journal of Human Resource Management*, *4*(1).

    https://doi.org/10.4102/sajhrm.v3i3.70

Clutterbuck, D., & Lane, G. (Eds.). (2004). *The situational mentor: An international review of*

    competences and capabilities in mentoring. Gower.

Cohen, A. M., & Kisker, C. B. (2010). *The shaping of American higher education: Emergence and growth of the contemporary system* (2nd ed). Jossey-Bass.

Compton, M. T., Frank, E., Elon, L., & Carrera, J. (2008). Changes in US medical students' specialty interests over the course of medical school. *Journal of General Internal Medicine*, *23*(7), 1095–1100. https://link.springer.com/article/10.1007/s11606-008-0579-z

Cook, A., & Glass, C. (2014). Above the glass ceiling: When are women and racial/ethnic minorities promoted to CEO? Research Notes and Commentaries. *Strategic Management Journal*, *35*(7), 1080–1089. https://doi.org/10.1002/smj.2161

Cornileus, T. H. (2013). "I'm a Black man and I'm doing this job very well": How African American professional men negotiate the impact of racism on their career development. *Journal of African American Studies*, *17*(4), 444–460. https://doi.org/10.1007/s12111-012-9225-2

Corso, K. A., Dorrance, K. A., & LaRochelle, J. (2018). The physician shortage: A red herring in American health care reform. *Military Medicine*, *183*(suppl_3), 220–224. https://doi.org/10.1093/milmed/usy211

Cox, E. (2005). For better, for worse: The matching process in formal mentoring schemes. *Mentoring & Tutoring: Partnership in Learning*, *13*(3), 403–414. https://doi.org/10.1080/13611260500177484

Cross, M., Lee, S., Bridgman, H., Thapa, D. K., Cleary, M., & Kornhaber, R. (2019). Benefits, barriers and enablers of mentoring female health academics: An integrative review. *PloS One*, *14*(4), e0215319. https://doi.org/10.1371/journal.pone.0215319

Crump, W. J., Fricker, R. S., Ziegler, C., Wiegman, D. L., & Rowland, M. L. (2013). Rural track

training based at a small regional campus: Equivalency of training, residency choice, and

practice location of graduates. *Academic Medicine: Journal of the Association of*

American Medical Colleges, *88*(8), 1122–1128.

https://doi.org/10.1097/ACM.0b013e31829a3df0

Dalen, J. E., & Ryan, K. J. (2016). United States medical school expansion: Impact on primary

care. *The American Journal of Medicine*, *129*(12), 1241–1243.

https://www.amjmed.com/article/S0002-9343(16)30554-X/abstract

Daniels, Z. M., VanLeit, B. J., Skipper, B. J., Sanders, M. L., & Rhyne, R. L. (2007). Factors in

recruiting and retaining health professionals for rural practice. *The Journal of Rural*

Health, *23*(1), 62–71. https://doi.org/10.1111/j.1748-0361.2006.00069.x

de Janasz, S. C., & Sullivan, S. E. (2004). Multiple mentoring in academe: Developing the

professorial network. *Journal of Vocational Behavior*, *64*(2), 263–283.

https://doi.org/10.1016/j.jvb.2002.07.001

DeCastro, R., Sambuco, D., Ubel, P. A., Stewart, A., & Jagsi, R. (2013). Mentor networks in

academic medicine: Moving beyond a dyadic conception of mentoring for junior faculty

researchers. *Academic Medicine: Journal of the Association of American Medical*

Colleges, *88*(4), 488.

Derck, J., Zahn, K., Finks, J. F., Mand, S., & Sandhu, G. (2016). Doctors of tomorrow: An

innovative curriculum connecting underrepresented minority high school students to

medical school. *Education for Health (Abingdon, England)*, *29*(3), 259–265.

https://doi.org/10.4103/1357-6283.204219

Devers, K. J., & Frankel, R. M. (2000). Study design in qualitative research--2: Sampling and

    data collection strategies. *Education for Health (Abingdon, England)*, *13*(2), 263–271.

    https://doi.org/10.1080/13576280050074543

Douthit, N., Kiv, S., Dwolatzky, T., & Biswas, S. (2015). Exposing some important barriers to

    health care access in the rural USA. *Public Health*, *129*(6), 611–620.

    https://www.sciencedirect.com/science/article/abs/pii/S0033350615001584

Eby, L. T., & Allen, T. D. (2008). Moving toward interdisciplinary dialogue in mentoring

    scholarship: An introduction to the special issue. *Journal of Vocational Behavior*, *72*(2),

    159–167. https://doi.org/10.1016/j.jvb.2008.02.005

Eidson-Ton, W. S., Rainwater, J., Hilty, D., Henderson, S., Hancock, C., Nation, C. L., &

    Nesbitt, T. (2016). Training medical students for rural, underserved areas: A rural

    medical education program in California. *Journal of Health Care for the Poor and*

    Underserved, *27*(4), 1674–1688. https://doi.org/10.1353/hpu.2016.0155

Eley, D. S., Laurence, C., Cloninger, C. R., & Walters, L. (2015). *Who attracts whom to rural*

    general practice? Variation in temperament and character profiles of GP registrars

    across different vocational training pathways. *15*(4), 3426.1-3426.15.

    https://www.researchgate.net/profile/Diann_Eley/publication/284165569_Who_attracts_

    whom_to_rural_general_practice_Variation_in_temperament_and_character_profiles_of

    _GP_registrars_across_different_vocational_training_pathways/links/566ddcdb08ae1a79

    7e405c07.pdf

Estepp, C. M., Velasco, J. G., Culbertson, A. L., & Conner, N. W. (2017). An investigation into

    mentoring practices of faculty who mentor undergraduate researchers at a Hispanic

serving institution. *Journal of Hispanic Higher Education*, *16*(4), 338–358.

    https://doi.org/10.1177/1538192716661906

Farkas, A. H., Bonifacino, E., Turner, R., Tilstra, S. A., & Corbelli, J. A. (2019). Mentorship of

    women in academic medicine: A systematic review. *Journal of General Internal*

    Medicine, *34*(7), 1322–1329. https://doi.org/10.1007/s11606-019-04955-2

Faucett, E. A., McCrary, H. C., Milinic, T., Hassanzadeh, T., Roward, S. G., & Neumayer, L. A.

    (2017). The role of same-sex mentorship and organizational support in encouraging

    women to pursue surgery. *The American Journal of Surgery*, *214*(4), 640–644.

    https://doi.org/10.1016/j.amjsurg.2017.07.005

Feldman, R., & Scheffler, R. (1978). Supply of medical-school applicants and rate of return to

    training. *Quarterly Review of Economics and Business*, *18*(1), 91–98.

Finnerty, E. P., Chauvin, S., Bonaminio, G., Andrews, M., Carroll, R. G., & Pangaro, L. N.

    (2010). Flexner revisited: The role and value of the basic sciences in medical education.

    Academic Medicine, *85*(2), 349–355. https://doi.org/10.1097/ACM.0b013e3181c88b09

Frei, E., Stamm, M., & Buddeberg-Fischer, B. (2010). Mentoring programs for medical

    students—A review of the PubMed literature 2000—2008. *BMC Medical Education*,

    10(1), 32. https://doi.org/10.1186/1472-6920-10-32

Frosch, E., & Goldstein, M. (2019). Relationship-centered advising in a medical school learning

    community. *Journal of Medical Education and Curricular Development*, *6*,

    238212051982789. https://doi.org/10.1177/2382120519827895

Goldman, A. L., & Sommers, B. D. (2018). Kansas and Medicaid: New evidence on potential

    expansion and work requirements. *The Commonwealth Fund Issue Brief*.

Goodfellow, A., Ulloa, J. G., Dowling, P. T., Talamantes, E., Chheda, S., Bone, C., & Moreno, G. (2016). Predictors of primary care physician practice location in underserved urban or rural areas in the United States: A systematic literature review. *Academic Medicine*, *91*(9), 1313–1321. https://doi.org/10.1097/ACM.0000000000001203

Greiner, K., Paolo, A., Kennedy, M., Cook, D., Cox, G., Nazir, N., & Epp, A. (2007). A Kansas physician workforce report. *The University of Kansas Medical Center and the Department of Health and Environment Office of Local and Rural Health*.

Hagler, M. (2018). Processes of natural mentoring that promote underrepresented students' educational Attainment: A theoretical model. *American Journal of Community Psychology*, *62*(1–2), 150–162. https://doi.org/10.1002/ajcp.12251

Halaas, G. W., Zink, T., Finstad, D., Bolin, K., & Center, B. (2008). Recruitment and retention of rural physicians: Outcomes from the rural physician associate program of Minnesota. *The Journal of Rural Health*, *24*(4), 345–352. https://doi.org/10.1111/j.1748-0361.2008.00180.x

Hauer, K. E., Teherani, A., Dechet, A., & Aagaard, E. M. (2005). Medical students' perceptions of mentoring: A focus-group analysis. *Medical Teacher*, *27*(8), 732–734. https://doi.org/10.1080/01421590500271316

Hee, J. M., Yap, H. W., Ong, Z. X., Quek, S. Q. M., Toh, Y. P., Mason, S., & Krishna, L. K. R. (2019). Understanding the mentoring environment through thematic analysis of the learning environment in medical education: A systematic review. *Journal of General Internal Medicine*, *34*(10), 2190–2199. https://doi.org/10.1007/s11606-019-05000-y

Henry, J., Edwards, B., & Crotty, B. (2009). Why do medical graduates choose rural careers? *Rural and Remote Health*, *9*(1083), 1–13. http://dro.deakin.edu.au/view/DU:30018594

Holden, L., Rumala, B., Carson, P., & Siegel, E. (2014). Promoting careers in health care for

    urban youth: What students, parents and educators can teach us. *Information Services &*

    Use, *34*(3–4), 355–366. https://doi.org/10.3233/ISU-140761

Holley, K., & Harris, M. S. (2019). *The qualitative dissertation in education: A guide for*

    integrating research and practice. Routledge.

Hudson, J. N., & May, J. A. (2015). What influences doctors to work in rural locations. *Med J*

    Aust, *202*(1), 5–6. https://www.mja.com.au/system/files/issues/hud01550.pdf

Hyer, J., Bazemore, A., Bowman, R., Zhang, X., Petterson, S., & Phillips, R. (2007). Rural

    origins and choosing family medicine predict future rural practice. *American Family*

    Physician, *76*(2), 207. https://www.aafp.org/afp/2007/0715/p207.html

Institute of Medicine (US) Division of Health Sciences Policy. (1983). *Medical education and*

    societal needs: A planning report for the health professions. National Academies Press

    (US). http://www.ncbi.nlm.nih.gov/books/NBK217680/

Jacobi, M. (1991). Mentoring and undergraduate academic success: A literature review. *Review*

    of Educational Research, *61*(4), 505–532. https://doi.org/10.3102/00346543061004505

Jeffe, D. B., Whelan, A. J., & Andriole, D. A. (2010). Primary care specialty choices of United

    States Medical Graduates, 1997–2006: *Academic Medicine*, *85*(6), 947–958.

    https://doi.org/10.1097/ACM.0b013e3181dbe77d

Jolly, P., Erikson, C., & Garrison, G. (2013). U.S. graduate medical education and physician

    specialty choice: *Academic Medicine*, *88*(4), 468–474.

    https://doi.org/10.1097/ACM.0b013e318285199d

Jones, S. R., Torres, V., & Arminio, J. L. (2014). *Negotiating the complexities of qualitative research in higher education: Fundamental elements and issues* (Second edition). Routledge.

Kallail, J. K., & McCurdy, S. (2010). Scholars in rural health: Outcomes from an assured admissions program. *Family Medicine*, *42*(10), 729–731. http://www.stfm.org/fmhub/fm2010/November/K.%20James729.pdf

Kashiwagi, D. T., Varkey, P., & Cook, D. A. (2013). Mentoring programs for physicians in academic medicine: A systematic review. *Academic Medicine*, *88*(7), 1029–1037. https://doi.org/10.1097/ACM.0b013e318294f368

Keeler, H., Sjuts, T., Niitsu, K., Watanabe-Galloway, S., Mackie, P. F.-E., & Liu, H. (2018). Virtual mentorship network to address the rural shortage of mental health providers. *American Journal of Preventive Medicine*, *54*(6), S290–S295. https://doi.org/10.1016/j.amepre.2018.02.001

Keshavan, M. S., & Tandon, R. (2015). On mentoring and being mentored. *Asian Journal of Psychiatry*, *16*, 84–86. https://doi.org/10.1016/j.ajp.2015.08.005

Kohler, J. E., Falcone, R. A., & Fallat, M. E. (2019). Rural health, telemedicine and access for pediatric surgery. *Current Opinion in Pediatrics*, *31*(3), 391–398. https://doi.org/10.1097/MOP.0000000000000763

Kosoko-Lasaki, O., Sonnino, R. E., & Voytko, M. L. (2006). Mentoring for women and underrepresented minority faculty and students: Experience at two institutions of higher education. *Journal of the National Medical Association*, *98*(9), 1449–1459.

Kram, K. E. (1983). Phases of the mentor relationship. *Academy of Management Journal*, *26*(4), 608–625. https://doi.org/10.5465/255910

Laven, G., & Wilkinson, D. (2003). Rural doctors and rural backgrounds: How strong is the

evidence? A systematic review. *Australian Journal of Rural Health*, *11*(6), 277–284.

https://doi.org/10.1111/j.1440-1584.2003.00534.x

Lawson, S. R., & Hoban, J. D. (2003). Predicting career decisions in primary care medicine: A

theoretical analysis. *The Journal of Continuing Education in the Health Professions*,

23(2), 68–80. https://doi.org/10.1002/chp.1340230204

Levin, Z., Meyers, P., Peterson, L., Habib, A., & Bazemore, A. (2019). Practice intentions of

family physicians trained in teaching health centers: The value of community-based

training. *The Journal of the American Board of Family Medicine*, *32*(2), 134–135.

https://doi.org/10.3122/jabfm.2019.02.180292

Levinson, W., Kaufman, K., Clark, B., & Tolle, S. W. (1991). Mentors and role models for

women in academic medicine. *The Western Journal of Medicine*, *154*(4), 423–426.

Levy, B. D., Katz, J. T., Wolf, M. A., Sillman, J. S., Handin, R. I., & Dzau, V. J. (2004). An

initiative in mentoring to promote residents' and faculty members' careers. *Academic

Medicine*, *79*(9), 845–850.

Lunsford, L. G., Crisp, G., Dolan, E. L., & Wuetherick, B. (2017). Mentoring in higher

education. *The SAGE Handbook of Mentoring*, 316–334.

Lutz, G., Pankoke, N., Goldblatt, H., Hofmann, M., & Zupanic, M. (2017). Enhancing medical

students' reflectivity in mentoring groups for professional development – a qualitative

analysis. *BMC Medical Education*, *17*(1). https://doi.org/10.1186/s12909-017-0951-y

Major, R. H. (1966). An account of the University of Kansas School of Medicine. *The Journal of

the Kansas Medical Society*, *67*(7), 366-371 contd.

Mann, M. P. (1992). Faculty mentors for medical students: A critical review. *Medical Teacher*, *14*(4), 311–319. https://doi.org/10.3109/01421599209018849

Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3rd ed). SAGE Publications.

Mayers, L., & Harrison, L. V. (1924). *The Distribution of Physicians in the United States*. General Education Board.

McDonald, S., & Day, J. C. (2010). Race, gender, and the invisible hand of social capital. *Sociology Compass*, *4*(7), 532–543. https://doi.org/10.1111/j.1751-9020.2010.00298.x

McGrail, M. R., Humphreys, J. S., & Joyce, C. M. (2011). Nature of association between rural background and practice location: A comparison of general practitioners and specialists. *BMC Health Services Research*, *11*(1), 63. https://doi.org/10.1186/1472-6963-11-63

McGrail, M., Wingrove, P., Petterson, S., Humphreys, J., Russell, D., & Bazemore, A. (2017). Measuring the attractiveness of rural communities in accounting for differences of rural primary care workforce supply. *Rural and Remote Health*, *17*(2). https://doi.org/10.22605/RRH3925

Mehrotra, A., Jena, A. B., Busch, A. B., Souza, J., Uscher-Pines, L., & Landon, B. E. (2016). Utilization of telemedicine among rural medicare beneficiaries. *JAMA*, *315*(18), 2015. https://doi.org/10.1001/jama.2016.2186

Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation* (Fourth edition). John Wiley & Sons.

Mitka, M. (2007). Looming shortage of physicians raises concerns about access to care. *JAMA*, *297*(10), 1045. https://doi.org/10.1001/jama.297.10.1045

Moehling, C. M., Niemesh, G. T., Thomasson, M. A., & Treber, J. (2018). Medical education

　　reforms and the origins of the rural physician shortage. *Cliometrica*, 1–45.

　　https://link.springer.com/article/10.1007/s11698-019-00187-w

Moran, A. M., Coyle, J., Pope, R., Boxall, D., Nancarrow, S. A., & Young, J. (2014).

　　Supervision, support and mentoring interventions for health practitioners in rural and

　　remote contexts: An integrative review and thematic synthesis of the literature to identify

　　mechanisms for successful outcomes. *Human Resources for Health*, *12*(1).

　　https://doi.org/10.1186/1478-4491-12-10

Morrow, S. L. (2005). Quality and trustworthiness in qualitative research in counseling

　　psychology. *Journal of Counseling Psychology*, *52*(2), 250–260.

　　https://doi.org/10.1037/0022-0167.52.2.250

Murphy, F., & Spencer, S. (1951, May 26). We need more doctors. *The Saturday Evening Post*.

　　University of Kansas Medical Center Archives, Kansas City, Kansas.

Nearing, K. A., Nuechterlein, B. M., Tan, S., Zerzan, J. T., Libby, A. M., & Austin, G. L. (2020).

　　Training mentor–mentee pairs to build a robust culture for mentorship and a pipeline of

　　clinical and translational researchers: The Colorado Mentoring Training Program.

　　Academic Medicine, 1. https://doi.org/10.1097/ACM.0000000000003152

Nimmons, D., Giny, S., & Rosenthal, J. (2019). Medical student mentoring programs: Current

　　insights. *Advances in Medical Education and Practice*, *Volume 10*, 113–123.

　　https://doi.org/10.2147/AMEP.S154974

O'Brien, K. E., Biga, A., Kessler, S. R., & Allen, T. D. (2010). A meta-analytic investigation of

　　gender differences in mentoring. *Journal of Management*, *36*(2), 537–554.

　　https://doi.org/10.1177/0149206308318619

O'Connor, M. I. (2016). Medical school experiences shape women students' interest in

orthopaedic surgery. *Clinical Orthopaedics and Related Research*, *474*(9), 1967–1972.

https://doi.org/10.1007/s11999-016-4830-3

Osterberg, L. G., Goldstein, E., Hatem, D. S., Moynahan, K., & Shochet, R. (2016). Back to the

future: What learning communities offer to medical education. *Journal of Medical*

Education and Curricular Development, *3*, JMECD.S39420.

https://doi.org/10.4137/JMECD.S39420

Ovink, S. M., & Veazey, B. D. (2011). More than "Getting us through:" A case study in cultural

capital enrichment of underrepresented minority undergraduates. *Research in Higher*

Education, *52*(4), 370–394. https://doi.org/10.1007/s11162-010-9198-8

Paladine, H. L., Hustedde, C., Wendling, A., Sola, O., Prasad, R., Bjorkman, S., & Phillips, J.

(2020). The role of rural communities in the recruitment and retention of women

physicians. *Women & Health*, *60*(1), 113–122.

https://doi.org/10.1080/03630242.2019.1607801

Palmer, R. T., Maramba, D. C., & Dancy, T. E. (2011). A qualitative investigation of factors

promoting the retention and persistence of students of color in STEM. *The Journal of*

Negro Education, *80*(4), 491–504. http://www.jstor.org/stable/41341155

Parlier, A. B., Galvin, S. L., Thach, S., Kruidenier, D., & Fagan, E. B. (2018). The road to rural

primary care: A narrative review of factors that help develop, recruit, and retain rural

primary care physicians. *Academic Medicine*, *93*(1), 130–140.

https://doi.org/10.1097/ACM.0000000000001839

Patterson, D. G., Andrilla, C. H. A., & Garberson, L. A. (2019). Preparing physicians for rural

practice: Availability of rural training in rural-centric residency programs. *Journal of*

Graduate Medical Education. https://www.jgme.org/doi/abs/10.4300/JGME-D-18-01079.1

Peterson, L. E., & Litaker, D. G. (2010). County-level poverty is equally associated with unmet health care needs in rural and urban settings. *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association*, *26*(4), 373–382. https://doi.org/10.1111/j.1748-0361.2010.00309.x

Pfund, C., Pribbenow, C.M., Branchaw, J., Lauffer, S.M., Handelsmann, J. (2006). The merits of training mentors. *Science*, *311*(5760), 473–474. https://doi.org/10.1126/science.1123806

Philip, K., & Hendry, L. B. (2000). Making sense of mentoring or mentoring making sense? Reflections on the mentoring process by adult mentors with young people. *Journal of Community & Applied Social Psychology*, *10*(3), 211–223. https://doi.org/10.1002/1099-1298(200005/06)10:3<211::AID-CASP569>3.0.CO;2-S

Phillips, J. P., Wendling, A. L., Fahey, C. A., & Mavis, B. E. (2018). The effect of a community-based medical school on the state and local physician workforce. *Academic Medicine*, *93*(2), 306–313. https://doi.org/10.1097/ACM.0000000000001823

Phillips Jr, R., Dodoo, M., & Petterson, S. (2009). *Specialty and geographic distribution of the physician workforce: What influences medical student & resident choices. Robert Graham Center*.

Phillips, W. R. (2018). Pursuing personal passion: Learner-centered research mentoring. *Family Medicine*, *50*(1), 41–46. https://doi.org/10.22454/FamMed.2018.952474

Potter, A. J., Mueller, K. J., Mackinney, A. C., & Ward, M. M. (2014). Effect of tele-emergency services on recruitment and retention of US rural physicians. *Rural & Remote Health*,

14(3).

https://pdfs.semanticscholar.org/fd07/b463953bd19551a9a8e268b8ba024a8a714a.pdf

Rabinowitz, H. K. (2001). Critical factors for designing programs to increase the supply and

retention of rural primary care physicians. *JAMA*, *286*(9), 1041.

https://doi.org/10.1001/jama.286.9.1041

Rabinowitz, H. K., Diamond, J. J., Markham, F. W., & Wortman, J. R. (2008). Medical school

programs to increase the rural physician supply: A systematic review and projected

impact of widespread replication: *Academic Medicine*, *83*(3), 235–243.

https://doi.org/10.1097/ACM.0b013e318163789b

Ranmuthugala, G., Humphreys, J., Solarsh, B., Walters, L., Worley, P., Wakerman, J., Dunbar, J.

A., & Solarsh, G. (2007). Where is the evidence that rural exposure increases uptake of

rural medical practice? *Australian Journal of Rural Health*, *15*(5), 285–288.

https://doi.org/10.1111/j.1440-1584.2007.00915.x

Reynolds, P. P. (2008). Title VII innovations in American medical and dental education:

Responding to 21st century priorities for the health of the American public: *Academic

Medicine*, *83*(11), 1015–1020. https://doi.org/10.1097/ACM.0b013e3181892966

Rhodes, J. E. (2005). A model of youth mentoring. In *Handbook of Youth Mentoring* (pp. 30–

43). SAGE Publications, Inc. https://doi.org/10.4135/9781412976664.n3

Rivera, S., Knack, J. M., Kavanagh, K., Thomas, J., Small, M. M., & Ramsdell, M. (2019).

Building a STEM mentoring program in an economically disadvantaged rural

community. *Journal of Educational Research and Practice*, *9*(1), 413–422.

https://doi.org/10.5590/JERAP.2019.09.1.29

Rosenblatt, R. A. (1992). Which medical schools produce rural physicians? *JAMA*, *268*(12), 1559. https://doi.org/10.1001/jama.1992.03490120073031

Rural Health Program for Kansas, no. 9, House (1949). University of Kansas Medical Center Archives, Kansas City, Kansas.

Savageau, J. A., Cragin, L., Ferguson, W. J., Sefton, L., & Pernice, J. (2016). Recruitment and retention of community health center primary care physicians post MA health care reform: 2008 vs. 2013 Physician Surveys. *Journal of Health Care for the Poor and Underserved*, *27*(3), 1011–1032. https://doi.org/10.1353/hpu.2016.0106

Searby, J. L. (2014). The Protégé mentoring mindset: A framework for consideration. *International Journal of Mentoring and Coaching in Education*, *3*(3), 255–276. https://doi.org/10.1108/IJMCE-04-2014-0012

Sempowski, I. P. (2004). Effectiveness of financial incentives in exchange for rural and underserviced area return-of-service commitments: Systematic review of the literature. *Canadian Journal of Rural Medicine: The Official Journal of the Society of Rural Physicians of Canada = Journal Canadien De La Medecine Rurale: Le Journal Officiel De La Societe De Medecine Rurale Du Canada*, *9*(2), 82–88.

Shapirio, E. C., Haseltine, F. P., & Rowe, M. P. (1978). Moving up: role models, mentors, and the "Patron System." *Sloan Management Review*, *19*(3), 8. https://login.proxy.kumc.edu/login?url=https://search.proquest.com/docview/206796028?accountid=28920

Shipman, S. A., Jones, K. C., Erikson, C. E., & Sandberg, S. F. (2013). Exploring the workforce implications of a decade of medical school expansion: Variations in medical school

growth and changes in student characteristics and career plans. *Academic Medicine*, *88*(12), 1904–1912.

Shipman, S. A., Wendling, A., Jones, K. C., Kovar-Gough, I., Orlowski, J. M., & Phillips, J. (2019). The decline in rural medical students: A growing gap In geographic diversity threatens the rural physician workforce. *Health Affairs*, *38*(12), 2011–2018. https://doi.org/10.1377/hlthaff.2019.00924

Skinner, L., Staiger, D. O., Auerbach, D. I., & Buerhaus, P. I. (2019). Implications of an aging rural physician workforce. *New England Journal of Medicine*, *381*(4), 299–301. https://doi.org/10.1056/NEJMp1900808

Sng, J. H., Pei, Y., Toh, Y. P., Peh, T. Y., Neo, S. H., & Krishna, L. K. R. (2017). Mentoring relationships between senior physicians and junior doctors and/or medical students: A thematic review. *Medical Teacher*, *39*(8), 866–875. https://doi.org/10.1080/0142159X.2017.1332360

Straus, S. E., Johnson, M. O., Marquez, C., & Feldman, M. D. (2013). Characteristics of successful and failed mentoring relationships: A qualitative study across two academic health centers. *Academic Medicine: Journal of the Association of American Medical Colleges*, *88*(1), 82–89. https://doi.org/10.1097/ACM.0b013e31827647a0

Sullivan, L. W., & Suez Mittman, I. (2010). The state of diversity in the health professions a century after Flexner: *Academic Medicine*, *85*(2), 246–253. https://doi.org/10.1097/ACM.0b013e3181c88145

Tan, Y. S., Teo, S. W. A., Pei, Y., Sng, J. H., Yap, H. W., Toh, Y. P., & Krishna, L. K. R. (2018). A framework for mentoring of medical students: Thematic analysis of mentoring

programmes between 2000 and 2015. *Advances in Health Sciences Education*, *23*(4), 671–697. https://doi.org/10.1007/s10459-018-9821-6

Taylor, Z. W., & Black, V. G. (2018). Talking to the mentees: Exploring mentee dispositions prior to the mentoring relationship. *International Journal of Mentoring and Coaching in Education*, *7*(4), 296–311. https://doi.org/10.1108/IJMCE-04-2018-0019

Thomas, B. (2019). Free medical school tuition: Will it accomplish its goals? *JAMA*, *321*(2), 143. https://doi.org/10.1001/jama.2018.19457

Thomas, S. R., Holmes, G. M., & Pink, G. H. (2016). To what extent do community characteristics explain differences in closure among financially distressed rural hospitals? *Journal of Health Care for the Poor and Underserved*, *27*(4A), 194–203. https://doi.org/10.1353/hpu.2016.0176

Underrepresented in Medicine Definition. (n.d.). AAMC. Retrieved March 25, 2020, from https://www.aamc.org/what-we-do/mission-areas/diversity-inclusion/underrepresented-in-medicine

U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis, & Health Resources and Services Administration Bureau of Health. (2016). *State-level projections of supply and demand for primary care practitioners: 2013-2025*. https://bhw.hrsa.gov/sites/default/files/bhw/health-workforce-analysis/research/projections/primary-care-state-projections2013-2025.pdf

US News. (2019). *How does University of Kansas Medical Center rank among America's best medical schools?* https://www.usnews.com/best-graduate-schools/top-medical-schools/university-of-kansas-04037

Vasquez, R., & Pandya, A. G. (2020). Successful mentoring of women. *International Journal of Women's Dermatology*, *6*(1), 61–62. https://doi.org/10.1016/j.ijwd.2019.08.001

Wade, M. E., Brokaw, J. J., Zollinger, T. W., Wilson, J. S., Springer, J. R., Deal, D. W., White, G. W., Barclay, J. C., & Holloway, A. M. (2007). Influence of hometown on family physicians' choice to practice in rural settings. *Family medicine-Kansas City*, *39*(4), 248. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.504.5076&rep=rep1&type=pdf

Walker, J., DeWitt, D., Pallant, J., & Cunningham, C. (2012). Rural orgin plus a rural clinical school placement is a significant predictor of medical students' intentions to practice rurally: A multi-university study. *Rural and Remote Health*, *12*(1908), 9. https://pdfs.semanticscholar.org/bb80/b60653c19937de9c5d9530761547cb6a12b4.pdf

Wendling, A. L., Phillips, J., Short, W., Fahey, C., & Mavis, B. (2016). Thirty years training rural physicians: Outcomes from the Michigan State University College of Human Medicine Rural Physician Program. *Academic Medicine*, *91*(1), 113–119. https://doi.org/10.1097/ACM.0000000000000885

Wishner, J., Solleveld, P., Rudowitz, R., Paradise, J., & Antonisse, L. (2016). A look at rural hospital closures and implications for access to care: Three case studies. *Kaiser Family Foundation [Internet]*.

Yip, J., & Kram, K. E. (2017). Developmental networks: Enhancing the science and practice of mentoring. In D. Clutterbuck, F. Kochan, L. Lunsford, N. Dominguez, & J. Haddock-Millar, *The SAGE Handbook of Mentoring* (pp. 88–104). SAGE Publications Ltd. https://doi.org/10.4135/9781526402011.n6

Zimmerman, M. A., Bingenheimer, J. B., & Behrendt, D. (2005). Natural mentoring. *Handbook of Youth Mentoring*, 143–157.

Zou, X., Ingram, P., & Higgins, E. T. (2015). Social networks and life satisfaction: The interplay

of network density and regulatory focus. *Motivation and Emotion*, *39*(5), 693–713.

Table 1

2016 – 2019 Matriculating Scholar Demographics

Matric Year	# of Scholars	Males	Females	# of different undergraduate institutions
2016	13	5	8	8
2017	15	6	9	10
2018	15	7	8	6
2019	13	5	8	6

Table 2

2016 – 2019 KU SOM Matriculation Stats

Matric Year	Class Size	Males	Females	# of different undergraduate institutions
2016	211	106	105	62
2017	211	118	93	66
2018	211	102	109	69
2019	211	108*	102*	68

*One matriculant declined to respond to gender question.

Table 3

Scholar Participant Background Information

Name	Gender	KS Region*	City Size	College	Major	Knew Mentor	Mentor Gender
Anna	Female	SE	<2,500	Large Public In-State	Biology	Yes	Male
Caitlin	Female	NW	<500	Large Public In-State	Biology	Yes	Female
Christopher	Male	NC	<2,500	Mid-Size Public Out of State	Biomedical Science	Yes	Male
Daniel	Male	SE	<10,000	Large Public In-State	Chemistry	Yes	Male
Elizabeth	Female	SW	<30,000	Large Public In-State	Biochemistry	No	Male
James	Male	NC	<30,000	Large Public In-State	Biology	No	Male
Jessica	Female	NW	<2,500	Large Public In-State	Biology	Yes	Female
Megan	Female	NE	<10,000	Large Public In-State	Biology	Yes	Female
Rebecca	Female	NC	<10,000	Large Public In-State	Education	Yes	Female
Thomas	Male	NW	<2,500	Small Private In-State	Biochemistry	Yes	Male
William	Male	SW	<30,000	Large Public In-State	Biomedical Engineering	Yes	Male

*Location of participant's hometown based on the region in Kansas. The Office of Rural Medical Education defines regions at the KU SOM.

Table 4

Research Findings by the Appearance of Theme in Chapter 4

Research Question	Theme	Theme	Theme
What is the mentee experience of a former participant in the Scholars in Rural Health program?	Access to Observation Experiences	Hands-On Clinical Experience	
What are the Scholars' perceptions of mentoring relationships?	Understanding of Mentoring	Mentor Qualities	Role of Mentor is Multidimensional
When did mentoring occur for participants in the Scholars in Rural Health program?	Time with Mentor Occurred During Academic Breaks	Completion of Program Requirements Produced Opportunities for Mentoring	Continued Mentoring
How can the mentee experience be improved?	Barriers to Mentoring	Mentor Guidance	Guidance for Future Scholars

Appendix A: Recruitment Email

Dear _____,

If we have not formally met, my name is Brian Steele, and I am the Assistant Dean for Admissions at the KU School of Medicine. I am also a doctoral student in the Higher Education Administration program at the University of Kansas. I am contacting you because you are a current student who participated in the Scholars in Rural Health program. I am recruiting research participants to help learn more about the mentoring experience in the Scholars program. Participation involves a one-on-one virtual interview that will take about 45 minutes. The interview will be conducted virtually through Zoom. The interview will ask you questions about your mentoring experience in the SRH program. No identifiable information will be collected about you, and your responses will be anonymous. In addition to the one-on-one interview, a follow-up phone interview might be requested if clarification about a response is needed.

There are no personal benefits or risks to participating in this study. Participation is voluntary, and you can stop participating in the interview any time. If you agree to participate, you will receive a $15 Amazon gift card after the completion of the interview. Participation or declining will have no impact on your academic evaluations.

If you have any questions, please contact bsteele2@kumc.edu or (913) 588-5286. For questions about the rights of research participants, you may contact the KUMC Institutional Review Board (IRB) at (913) 588-1240 or humansubjects@kumc.edu

Sincerely,

Brian Steele
Doctoral Student in Higher Education Administration
Assistant Dean for Admissions

Appendix B: Informed Consent Statement

RESEARCH CONSENT FORM
Rural Premedical Mentoring: Mentee Experiences of former participants in the Scholars in Rural Health
Program
KUMC IRB # 00145845
Brian Steele
Bsteele2@kumc.edu **(913) 588-5286**

- We are asking you to be in a research study.

- Research is done to answer a scientific question. Research studies may or may not help the people who participate.

- Joining this study is completely voluntary. If you say yes, you can quit the study at any time.

- You can still get medical care and other services from the University of Kansas Medical Center even if you are not in the study.

- The research team will explain what happens if you decide to join the study. This conversation is called "informed consent."

- Informed consent includes a chance to get your questions answered before you make your decision. Please ask as many questions as you need to.

- This consent form explains the study. Take as much time as you need to decide.

- If you decide to be in the study, you will be asked to sign this form.

Brian Steele is doing the study at the University of Kansas Medical Center (KUMC). About fifteen people will be in the study.

Why is this study being done?
This study fulfills the dissertation requirements for Brian Steele for a Doctorate in Higher Education. The purpose of this study is to better understand the mentee experiences of the former participants in the Scholars in Rural Health Program. You are being asked to participate in this study because you were a member of the Scholars program.

How long will I be in this study?
The study will include one interview conducted through Zoom that will last approximately 45 minutes. It is possible that a follow up phone interview might be needed if any questions arise after the completion of the Zoom interview. A follow up interview would not last longer than ten minutes.

What will I be asked to do?
If you decide to be in the study, the researchers will ask you to do the following:

You are being asked to participate in an interview conducted virtually through Zoom that will last approximately 45 minutes. The interview will ask questions about your mentoring experience during the SRH program. Questions will be asked about your mentor, the relationship with your mentor, setting goals for the mentoring experience, and the overall mentoring experience. You are not required to answer the questions. You may pass on any question that you wish not to answer. If needed, a follow up phone interview will be scheduled if clarity about a response is needed.

The interviews will be audio recorded to help the researcher capture your experiences and insights in your own words. You have the option not to be audiotaped, or you may also ask to have the recording stopped at any time. The recordings will only be heard by the researcher for the purpose of this study. The researcher will use an automated speech recognition program to transcribe the audio recordings of your interviews to text, known as transcriptions.

What are the risks of being in the study?
There are no physical risks involved in collecting information about you. There is a small risk of breach of confidentiality. For that reason, your information will be protected as described in the Privacy section below.

Are there benefits to being in this study?
You will not get personal benefit from being in this study. This study has the potential to contribute to the body of knowledge on mentoring in rural communities, and in rural pipeline programs. The study will also help to improve future mentoring relationships that occur in the SRH program.

Will I have any costs or payments for being in the study?
In appreciation of your time, we will provide a $15 amazon gift card. We will record your name and address to track the gift cards.

What other choices do I have if I don't want to be in the study?
You can choose not to be in the study. You can decide to leave the study at any time. Leaving will not affect the treatment or services you get at KUMC. Participation or declining will have no impact on your academic evaluations.

How will my confidentiality and privacy be protected?
The researchers will keep your identity confidential, as required by law. Absolute confidentiality cannot be guaranteed because persons outside the study team may need to look at your study records. All aspects

of the study will be conducted in a manner that does not permit personal identification of you nor any other participants, other than required for research activities undertaken by the researcher. The researchers may publish the results of the study. If they do, they will only discuss group results. Your name will not be used in any publication or presentation about the study.

All files (audio recordings and text transcriptions) will be transmitted using the highest level of encryption (TLS 1.2 encryption) and will be stored in a secure, password-protected University of Kansas Medical Center server that is accessible only by the researcher. All files (audio recordings and transcriptions) will be kept secured by the researcher until three years after the completion of the project, and then will be erased/destroyed.

All study information that is sent outside KU Medical Center will have information that could easily identify you (such as name and address) removed. By limiting the information that is released, we are lowering the risk that your identity could be discovered and used for unauthorized purposes.

The researchers may publish the results of the study. If they do, responses will be anonymous. Your name will not be used in any publication or presentation about the study.

What if I decide to leave the study?
You can choose to cancel your permission for researchers to use your information. If you want to cancel your permission, please write to Brian Steele using the contact information on the first page of this document. If you cancel permission to use your information, you will be withdrawn from the study. The researchers will stop collecting any additional information about you. They are permitted to use and share information that was gathered before they received your cancellation.

Will I be told about research results?
At the end of the study, the research results will not be made available to participants unless requested.

Who can I talk to about the study?
Brian Steele or other members of the study team should answer all your questions before you sign this form. They will also tell you if they learn anything new that might affect your decision to stay in the study. You can talk to the researchers if you have any more questions, suggestions, concerns or complaints. If you have questions about your rights as a research subject, or if you want to talk with someone who is not involved in the study, you may contact the KUMC Institutional Review Board at (913) 588-1240 or humansubjects@kumc.edu.

CONSENT

Brian Steele or the research team has given you information about this research study. They have explained what will be done and how long it will take. They explained any inconvenience, discomfort or risks that may be experienced during this study.

A signature is not required for consent, but a verbal request for consent will be asked once the interview begins. By verbally consenting to the study, you say that you freely and voluntarily consent to participate in this research study. You have read the information and had your questions answered.

Appendix C: Interview Script

Thank you for agreeing to help with my study. My name is Brian Steele, and I am the Assistant Dean for Admissions at the School of Medicine. I am also a graduate student at the University of Kansas in the Higher Education Doctorate of Education program. Before we begin our conversation about your mentoring experience in the Scholars in Rural Health Program, we need to first review this informed consent form. KUMC IRB does not require a signature due to the low risk of the study but I will need you to read the consent form and verbally agree to an interview.

[Talk through the purpose of research, procedures, risks, and/or discomforts, benefits, confidentially, compensation].

If you agree, please state your name and your willingness to participate.

[Talk through the opportunity to ask questions, and freedom to withdraw from the study at any time]

At any time, you may stop the questioning to ask a question or to ask me to clarify.

[Talk about consent, right to receive a copy of transcript]

Thank you for your willingness to help. Here is a copy of the informed consent form for your records. We can now begin.

QUESTIONS

This concludes the interview and the questions I have for you. Do you have any questions remaining for me about the process? Thank you for your time and your answers. I appreciate your help with my studies. If you do think of any questions, please feel free to contact me.

Appendix D: Interview Protocol Questions

1. How did you find out about the Scholars in Rural Health Program?

    a. Probe: How was your mentor selected?

    b. Probe: How did you and your mentor set a schedule for the mentoring hours?

2. Before you started the SRH program, what were your thoughts on mentoring?

    a. Probe: What goals or outcomes were discussed with your mentor for the mentoring experience?

    b. Probe: What were you hoping to gain from the mentoring experience?

3. How did you communicate with your mentor?

    a. Probe: How were conversations initiated when you needed to find time with your mentor?

    b. Probe: Explain when it was difficult to find time with your mentor or speak with your mentor?

4. How would you describe your relationship with your mentor?

    a. Probe: What qualities did you like about your mentor, what qualities did you not like?

    b. Probe: Explain any times you felt uncomfortable with your mentor?

    c. Probe: Explain what a typical day with your mentor looked like? Walk me through a typical week with your mentor?

    d. Probe: What was your favorite thing that you did with your mentor? How about least favorite?

5. How did your mentor support you during the SRH program?

    a. Probe: How did your mentor make you feel about medicine in a rural community?

b. Probe: What support did your mentor provide in completing the Scholars program requirements (case reports, scholarly activities, etc.)?

c. Probe: As you entered medical school, did you maintain contact with your mentor, why or why not?

6. Relative to the entire mentor experience, what recommendations would you give to improve mentoring?

a. Probe: What would have made the mentor-mentee experience better for you, or how could the experience have been more productive?

b. Probe: If you were to advise a new Scholar, what is the one thing you would tell them to do in order to get the most out of the mentoring experience?