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Barriers to Publication Among GMERs: A Qualitative Case Study

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Walden University
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Dissertation Submitted in Partial Fulfillment

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Abstract

Many Graduate Medical Education Residents (GMERs) across American academic medical centers lack the necessary skills to research and publish their findings. This situation is critical as GMERs are future healthcare physicians who treat humans and strive to overcome disease, injury, and pain. Published biomedical research benefits physicians, patients, and entire communities globally. The research question addressed potential barriers GMERs encountered during publication. A qualitative case study was used to determine how to support GMERs to publish at a rate that would set them up for professional success. This constructivist-designed case study explored GMERs' perspectives on scholarship production. Adult learning theory provided the conceptual framework of this case study. Interviews were conducted with 10 volunteer GMER participants to learn about their research and publication perceptions. Data were reviewed and analyzed using established qualitative structural analysis for similarities and differences. The findings yielded insights into improved GMER scholarship production. Increased biomedical publication output contributes to California, the nation, and the world through discoveries that improve health, technology, and the quality of life. This study implicates positive social change as more published and disseminated biomedical research increases knowledge and directly correlates to improved patient outcomes.

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Dedication

My foundation in Christ has prepared me to live an authentic and service-filled life. This research would simply not have been possible without the continuous support of my family, friends, and co-workers. My father, Robert, gifted me with an excitement for learning and a love of libraries. I know he is with me on this journey. My mother, Helen, is my greatest teacher and biggest supporter. My brother, Major Robert, and his wife, LTC Josie Hobbs, provided stalwart strength during stormy weather.

My children, Liam and Ryann, are my most outstanding achievements, and my love for them motivated me to persevere with my dream. A special dedication of love and admiration goes out to my wife, Erika, and stepsons, Zachary and Benjamin, who gave me a second chance when I truly needed it. The American dream is real.

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I dedicate this to all Graduate Medical Education Program Directors, Associate Program Directors, Program Coordinators, Researchers, and Librarians in programs across the United States. They work tirelessly and diligently to become future generations of healthcare leaders and Physicians. It has been a privilege to work in Graduate Medical Education.

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Chapter 1: Introduction to the Study

This dissertation addressed the problem of GMERs (GMERs) publishing at a rate that does not set them up for professional success. GMERs currently experience barriers to publishing that limit their future success in academic medicine. This research project aimed to investigate and explore how GMERs may be supported to publish at a higher rate that sets them up for professional success. Chapter 1 included the identification of the background of the problem, as well as evidence of the problem examined from a local and national perspective. Current research literature surrounding the problem was reviewed. Chapter 1 also addressed the significance of the problem and identified the research question.

GMERs' lack of scholarly output is one of the most common themes of expression in Graduate Medical Education departments and programs across the United States (Agarwal et al., 2016). In this study, institutional records displayed that few GMERs engaged in published research at a Graduate Medical Education department in an academic medical center in Ventura, California. There is a demonstrated practice-based gap and publication inequity among GMERs as they lacked the necessary skills to perform research and publish their findings. Challenges and barriers to publication are complex and numerous. Critical thinking skills, solid knowledge of publication methods, and practical applications are essential to successful Graduate Medical Education scholarship and publication competencies (Okoduwa et al., 2018).

Background

Journal article publication is fundamental to research output and benchmark academic productivity for Graduate Medical Education programs and individual Residents (Agarwal et al., 2016). GMERs' publication output is a good forecaster of future academic achievement (Yang et al., 2011). Academic journal article publishing is also positively associated with GMERs' clinical performances (Seaburg et al., 2016). This case study examined perceptions and barriers to GMERs' publication rates.

The need to improve capacity to write and publish scholarly writing in medical publishing has been described as overwhelming due to a variety of factors including clinical rotation schedules and lack of time (Ubbink et al., 2023). Graduate Medical Education leadership has yet to fully explore what experiences may be interpreted by GMERs as barriers to publication and how well residency prepares Residents for post-graduate academic medical work (Bulkley et al., 2017).

GMERs' scholarly work and journal article publications are critical for successful academic and educational medicine futures. Thus, this problem is meaningful and substantial as it influences GMERs' medical careers and future professional success (Ledford et al., 2013). GMERs are imminent physicians and leaders who will provide medical care and research worldwide for generations. Therefore, this study explored potential interventions to improve GMERs' academic journal publication output.

Journal article publication has emerged as one of the most well-known methods to demonstrate and highlight academic achievement (Kokol et al., 2020). For example, a recent research project studied 47 GMERs, of which, seven had successfully published 12

papers (Fanciullo et al., 2018). The author observed that scholarly projects enhance individuals' self-satisfaction, self-esteem, and satisfaction with residency training. A similar sentiment noted that GMERs participating in research appear to attain greater job satisfaction and can objectively frame simple questions and methodically seek answers to problems, including staffing issues, wait times, and communication barriers (Paxton et al., 2020).

The relationships between research and scholarship are the essential ingredients that move science forward (Butryn et al., 2019). Scholars have long articulated the need for additional research in bibliometrics to include librarian perspectives on unknown barriers to publications, which provide tangible insight into academic output deficits (Wolf et al., 2002). Medical libraries offer a wide array of resources to conduct research projects. Medical libraries provide access to evidence-based literature, develop strategies to increase scholarly works, and assist authors in tracking research outputs and activities. This study additionally explored academic medical libraries' engagement with GMERs, yielding added insights into academic medical libraries and GMERs' interrelationships. This study was needed as the outcomes support the development of novel methods at the local level to stimulate and support scholarly output, which is deemed essential to state-of-the-art medical libraries (Kokol et al., 2021).

Problem Statement

The problem is that GMERs publish at a rate that does not set them up for professional success. There have been numerous attempts to establish national benchmarks for all GMERs' productivity. Currently, there is no one standard publication

rate for Graduate Medical Education departments. However, a national benchmark for radiation oncology, a subgroup of Graduate Medical Education, is established at a mean 1.97 publication rate (Rowley et al., 2021). Although this statistic does not directly inform all GMERs, it is still meaningful to Graduate Medical Education programs in California, as other Graduate Medical Education programs in California are likely to suffer from low publication rates.

Examples of these low publication rates are evident throughout the United States. For example, the publication rate in peer-reviewed journals across the United States is only 20% for orthopedic surgery residents (Freshman et al., 2020). Scholarly activity rates are also low in family medicine, another subgroup, as GMERs, demonstrated by a publication rate of 25% (Crawford & Seehusen, 2011). Pharmacy, another Graduate Medical Education subgroup, ranked low, with less than a 16% publication rate (Seales et al., 2019)

California GMERs published 931 journal articles in selected high-impact orthopedic journals from 2010-2014 (Hohmann et al., 2018). A systematic literature review was performed in the PubMed database for the same period of 2010-2014 with the keywords orthopedics and Ventura as the location and yielded only four published articles. As the researcher, I chose the keyword of a singular Graduate Medical Education Department of Orthopedics, and Ventura as the setting of a Graduate Medical Education location. This variance in published articles demonstrates the significant gap in practice within the relationships of similar Graduate Medical Education departments across the

United States. This project used qualitative techniques to determine any factors that GMERs could interpret as barriers to publishing journal articles.

The Graduate Medical Education department in this study maintains detailed records of all GMER scholarship organized by year of publication and departmental affiliation. The Graduate Medical Education Department also preserves institutional records of graduates who entered their ultimate academic appointments throughout the United States. The findings generated from this research project were incorporated into future data analysis.

This case study examined an academic teaching medical center in California with a Graduate Medical Education program that strives to educate and train GMERs in six academic programs: Family Medicine, General Surgery, Internal Medicine, Orthopedic Surgery, Psychiatry, and Behavioral Health. Each program represents a distinct teaching area comprised of discipline-specific faculty and GMERs.

This problem was self-evident, as publication rates in a local hospital's Graduate Medical Education department in California are lower than similar Graduate Medical Education Departments across the United States (US Department of Education, 2020). California has 1,059 Graduate Medical Education programs representing 8.8% of all Graduate Medical Education medical programs in the United States (Education, 2017). The issue of variances in publication rates among GMERs affects an estimated 11,214 Graduate Medical Education Programs, and over 111,386 GMERs across the United States, Puerto Rico, and the District of Columbia (Education, 2017).

Purpose of the Study

The purpose of this qualitative study was to investigate how GMERs are supported to publish at a rate that sets them up for professional success. GMERs need to learn more about the numerous research and publication functions (Ubbink et al., 2023). They must fully comprehend their role in the scholarship process (Steinert et al., 2012). A sampling of what is unknown included what to write about, how to set up the format that is appropriate for publication, selecting a relevant journal to publish in, identifying a suitable publishing model, understanding journal impact factors and how they determine journal influence, an awareness of the Hirsch index, and the importance of author name order, all of which provide data to identify and explore perceived potential barriers to scholarship and successful publication. This study adds to current knowledge about GMERs' awareness of research and publication processes.

The qualitative design of the case study explored the knowledge and competencies of GMERs to improve publication output. As exploratory research, this study provided future researchers insight into the role of health information technology and big data. As an added benefit, this study traced the evolution of the scholarly article format and the potential adoption of a single-use identifier, enabling longitudinal tracking to track and potentially link Graduate Medical Education academic activities globally (Akers et al., 2016).

The local Graduate Medical Education programs of study prepare GMERs to serve as social change agents in medicine's respective fields. This Graduate Medical Education program prepares GMERs to improve the health and well-being of

underrepresented minorities through focused efforts in research, quality improvement, and institutional population initiatives (System, 2021). Moreover, this Graduate Medical Education program embraced the concept of diversity and empowered this concept to develop a culture of collaboration and teamwork. As discussed by researchers, ongoing revisions to curricular design and research methods demonstrated purposeful principles of diversity and inclusion and specific actions (Clarke, 2016). Broad educational topics ranging from cultural competencies to social determinants of health actively incorporated these principles into scholarly work production. This study's recommendations aim to improve and enhance scholarship activities that lead to successful Graduate Medical Education publishing in California as the institution implements the American College of Graduate Medical Education (ACGME) objectives. Academic medical libraries play a significant role in developing and sustaining epistemology, as all library content is based on empirical methodologies (Braun et al., 2020; Clarke & Braun, 2014). Likewise, the notion of peer review affirms this concept of the validity of biomedical knowledge (Masic, 2016).

Research Question

This study's principal research question was how GMERs can be supported to publish at a rate that sets them up for professional success. The strengths of qualitative research design support the explorative nature of this research question framework. I conducted semi-structured interviews with 10 GMERs of a Graduate Medical Education Department in an academic medical library in Ventura, California. Qualitative interviews allowed for exploring the interviewee's inner framework of meanings and how they may

contribute to or influence their attitudes regarding academic publishing (Bengtsson, 2016). The research question was tied to existing adult learning theories (ALT) literature. Therefore, I discussed how specific learning strategies may have contributed to perceived barriers. By using ALT, these barriers can be mitigated.

Conceptual Framework

Understanding why some GMERs are successful with publication was crucial. A systematic literature search and meta-analysis for scholarly activities was performed to identify and measure changes in scholarly output after implementing a curriculum or initiative. The analysis revealed that scholarship improves when implementing research initiatives during Graduate Medical Education Residency (Wood, McCollum, Kukreja, Vetter, Morgan, Maleki, et al., 2018). However, the analysis could have explained why other successful students chose to persist. Therefore, there was a need for a qualitative approach to learn more about GMER needs and examine trends in Graduate Medical Education that contribute to the high GMER scholarship.

A mixed-methods longitudinal evaluation of an intervention class was performed to assess the scholarly output of the intervention class versus a comparison class (Anandarajah et al., 2016). He noted that interventions such as successful basic research training, multilevel mentoring, and modest protected curriculum time are helpful with improving GMER scholarship. Adult educators must recognize that traditional pedagogical approaches cannot instruct adults, and learning must be tailored to the learner. Medical educators and librarians must seek to balance the learning tasks and the

learning environment that best facilitates adult learning in Graduate Medical Education (Borrego et al., 2018).

The theory was necessary as a challenge to educators and librarians to reconceptualize the goals of medical education and help untangle problems such as career choice and curriculum decisions (Swanwick, 2018). ALT plays a significant role in developing new research as a conceptual theory. By identifying the adult learner's strengths and motivations, scholarly work could be developed to suit the learner's proficiency level. This concept was affirmed with further research on mentoring relationships and their usefulness in improving scholarship with GMERs (Caruso et al., 2019).

Adult learning theory provides the conceptual framework to support the adaptation of previously acquired knowledge and experiences, which may provide the foundation to improve GMER scholarship at the institution (Merriam & Bierema, 2013). Choosing a theory can provide a rational basis for adopting specific teaching-learning methods, framing learning objectives, and designing evaluation strategies. A goal of ALT in this research project is to deepen understanding of the educator task order, how, why, and purpose.

ALT has been used as a method for explaining how adults learn and plays a significant role in developing new research on educational leadership (Merriam & Bierema, 2013). Fostering, relating, and developing interest in research and academic career paths is built upon ALT, thus enhancing Graduate Medical Education scholarly output (Bilal et al., 2020). Identifying the Residents' strengths and motivations for

producing scholarship can inform current understandings of how adults learn in this context.

Further research has affirmed the relevance of ALT with mentoring relationships and its usefulness in improving scholarship with GMERs (Caruso et al., 2019). ALT theory is necessary to challenge educators and librarians to reconceptualize the goals of medical education. The goal of utilizing ALT is also to help identify GMERs' learning styles, which can inform curricular decisions (Swanwick, 2018). Through the application of ALT, evidence-based decision-making can improve medical education. The notion of theory adherence may guide future decisions supporting and enhancing GMERs' scholarship at Graduate Medical Education departments.

Educators, medical librarians, and instructional designers can create compelling learning experiences aligned with adult learners' principles and characteristics by considering these connections between adult learning theory and distinct aspects of learning and instruction. Additional details on these connections are discussed further in Chapter 2.

Nature of the Study

This case study explored GMERs' attitudes and perceptions of scholarship production. This study strove to understand whether perceived barriers are critical issues in the Graduate Medical Education community and what strategies can be utilized to resolve these issues. I chose to utilize a qualitative case study methodology as it allows researchers the ability to learn about phenomena in a real-life context (Fàbregues & Fetters, 2019). The data were collected through a demographic survey and interviews

with 10 GMERs. The data was analyzed through qualitative software named NVivo. Most Graduate Medical Education scholarship studies discussed in the literature focused on quantitative analysis, indicating a need for more qualitative research to produce a more robust exploration of this issue of low scholarship among GMERs. No sole factor lead to comprehending what constitutes a successful Graduate Medical Education scholarship that sets them up for professional success.

Definitions

AHIP: The Academy of Health Information Professionals; the Medical Library Association's peer-reviewed professional development and career recognition program (Tooey, 2009).

Knowles Adult Learning Theory: Knowles's Adult Learning Theory states that andragogy is the art and science of training adults. Andragogy is a theory of adult learning that shifts the authority relationship to learner-centered instead of teacher-centered (Knowles et al., 2014).

Constructivist Theory: Constructivist theory is defined as an approach to learning that holds people accountable to construct or make their knowledge, in which the learner's experiences determine reality (Savery & Duffy, 1995).

Graduate Medical Education (Graduate Medical Education): Graduate Medical Education Programs are formal clinical education and research programs for physicians who have finished their medical school requirements and are awarded an M.D., D.O., or equivalent degree (Wood, McCollum, Kukreja, Vetter, Morgan, Maleki, et al., 2018).

Index Medicus: A comprehensive bibliographic database of biomedical science published from 1879-2004 (Goodman, 2018).

MEDLINE: The National Library of Medicine's bibliographic databases contain more than 27 million references to life sciences journals focusing on biomedicine. Medline is a primary component in PubMed. Medline contains published data from 1966 to the present (Kastrin & Hristovski, 2019).

Osteopathic Recognition: A determination of substantial compliance with the published Osteopathic Recognition Requirements following an evaluation and peer review process (Rue et al., 2021).

Participating Site: An organization providing educational experiences, assignments, or rotations for GMERs or Fellows (Castillo et al., 2020).

Program Director: The individual designated with authority and accountability for operating a Graduate Medical Education program (Edgar et al., 2020).

PubMed: A free literature database developed and maintained by the National Library of Medicine (Canese & Weis, 2013).

Resident: This term refers to any physician in a graduate medical education program, including Residents and Fellows (Wood, McCollum, Kukreja, Vetter, Morgan, Hossein Zadeh Maleki, et al., 2018).

Review Committee: A group of volunteers that sets accreditation standards or requirements and provides peer evaluation of sponsoring institutions or programs to assess the degree to which these comply with the applicable published accreditation requirements. The Review Committee confers an accreditation status on each sponsoring

institution or program concerning substantial compliance with those requirements. There are three types of review committees: Special Reviewer, Transitional Year Review, and Institutional Review Committee (Geyer et al., 2015).

Scholarly Activity: In a broad sense, the definition of scholarly activity is interpreted as a discovery that is equivalent to advancing knowledge, integration to mean synthesizing knowledge, application meaning applying existing knowledge, and teaching to mean the dissemination of knowledge. This case study defines scholarly activity as scholarly journal articles (Wood, McCollum, Kukreja, Vetter, Morgan, Maleki, et al., 2018).

Assumptions

Three significant assumptions guided this case study. First, it was assumed that GMER participants completed the core requirements for graduation from their medical school programs, which entitles the students to be enrolled in the Graduate Medical Education process. This assumption was made because the Graduate Medical Education program has permitted the participant to enroll. Second, it was assumed that the Graduate Medical Education program surveyed has a scholarship output requirement for its adult learners. There are different scholarship requirements for GMERs depending on departmental affiliation. Third, this study assumed that GMERs possess the skills to perform doctoral-level academic writing. This assumption was made because the GMERs should have completed various core courses that would have required some formal writing assignments. Finally, it was assumed that the GMERs could seek the academic support necessary to complete the Graduate Medical Education program.

Scope and Delimitations

Specific aspects of this research problem refer to the dimensions, factors, or variables I investigated in this dissertation. The scoping process involved narrowing my research focus and determining the appropriate boundaries. First, I identified the research problem, which is how GMERs can be supported to publish at a rate that sets them up for professional success. I defined the predominant research topic. Then, I conducted a comprehensive literature review, examined existing literature to better understand what is known, and examined any research gaps related to the research problem. Secondly, I refined my research objectives found in the literature review. I refined my research objectives to specify the aspects I wanted to investigate.

For example, the issue of scholarship productivity among GMERs was the broad problem. I narrowed down the problem to only include journal article publications as scholarship. Then, I identified key variables and factors relevant to the research problem. Specific examples included age, race, gender, writing practices, and socioeconomic factors of 10 GMERs.

I considered the scope of the study in terms of time, geography, and population. I focused on the target population of a singular Graduate Medical Education residency program before establishing inclusion and exclusion criteria. I chose an appropriate research method and data collection technique aligned with the research problem and the specific aspects I wanted to investigate. I carefully considered the methodology most suitable for capturing the desired information. I recognized the delimitations of my study, including any aspects that I may not be able to control due to time, resources, or access

constraints (Simon & Goes, 2013). These delimitations were communicated to provide a realistic scope for my research. By following these steps, I identified and scoped the specific aspects of my research problem, which confirmed that my study remained focused and manageable.

The delimitations of a research study indicate failings within the study that may influence the outcomes and conclusions of the research (Ross & Bibler Zaidi, 2019). The exclusion of Graduate Medical Education residency programs other than the research site delimited the study. This study was restricted to one institution and did not include other GMERs or programs. The findings of this research are only suitable for generalization to some GMERs, but they offer new insights that can be applied.

Limitations

The limitations of this study defined the study's boundaries and scope (Theofanidis & Fountouki, 2018). A limitation of this study is that it is meant to include a snowball sample, a method that is dependable for recruiting potential participants from a limited field (Ghaljaie et al., 2017; Hohmann et al., 2018). A snowball sample method was used to develop a network of GMERs at the research locations included in this study. Using a snowball sample and a small sample size precluded generalizing the study results among GMERs. Another limitation was the limited availability of GMERs due to their personal and professional responsibilities. I would have considered expanding my participant pool if more Residents had been available.

Significance

Scholarship through publications is crucial in academic appointments and educational leadership roles (Graf & Stumpf-Wollersheim, 2018). Graduate Medical Education academic and scholarly output is required by the Accreditation Council of Graduate Medical Education (ACGME; (Systems, 2018). This governing body supervises Graduate Medical Education trainees following medical school and prepares physicians for the independent practice of medicine. The significance of this study is elucidated by the "publish or perish" phenomenon, which is a substantial factor in many academic programs' promotion processes, including those in California (Broderick & Nocella, 2012).

GMERs are graded and ranked on their ability to generate and publish new research through peer-reviewed journals. The peer-review process is essential for ensuring validity and accuracy with biomedical information (Masic, 2016). This grading and ranking system partially determines eligibility for highly competitive post-graduate residency programs, fellowship programs, academic appointments, lab size space, research funds, and salary computations (Campbell et al., 2016). Scholarly publishing also influences the career trajectory of researchers. As publishing was once deemed optional, it is now obligatory in academic medicine.

There is ample evidence that affirms common barriers to GMERs' publication, including lack of protected research time, family responsibilities, career and job demands, uncertainty about the topic, fear of rejection, lack of academic writing skills, the lack of mentors, and an overall lack of awareness of complex and evolving publication processes

(Candice Chen et al., 2013). Lack of scholarly activity is not an isolated challenge experienced only in academic medical centers. It is only a small part of the more significant crisis many disciplines face across higher education (Rawat & Meena, 2014). Another example of the significance of scholarly output noted that numerous institutions only look at the publication output when considering potential new faculty members, neglecting their teaching experiences or other educational abilities (Abbott, 2011).

Potential contributions from this research study include academic and career advancement of GMERs in their careers. Evidence from publications can enhance the strength of candidates for highly competitive fellowships or training. Publication output also enhances reputations and increases the credibility of GMERs. Published scholarship can function as a platform for GMERs from which to present at conferences and expand professional networks.

Implications for positive social change from this research are numerous. Understanding how GMERs are supported to publish at a rate that sets them up for professional success can improve instructional practices and enhance the number of scholarly publications produced. In turn, medical knowledge and practices are advanced, and positive patient care outcomes are realized. Second, enhanced publishing impacts the delivery of medicine and addresses the many challenges associated within the fields of medicine. Last, healthcare disparities can be addressed and examined more efficiently to find root causes and address social and systemic factors contributing to healthcare inequities.

To summarize, removing barriers to GMER publication can drive positive social change through plentiful methods, including advancing medical knowledge, addressing healthcare disparities, influencing healthcare policies, fostering collaborations between medical departments, and inspiring future healthcare leaders to engage with scholarship. In essence, facilitating GMER publications can catalyze innovation, collaboration, and equity within the healthcare system.

Summary

This qualitative case study's implications impact local, national, and global communities. GMERs' ability to gain the necessary skills to perform research and publish their findings in peer-reviewed literature enriches biomedical literature. This process leads to improved medical knowledge and healthcare delivery. If members of this group experience difficulties with scholarship, there may be implications for less experienced GMERs to produce scholarship. By publishing more research, the field of medicine and medical librarianship is both expanded and enriched.

Exposure to high-quality peer review resources is the first step to developing new theories that generate new scholarship (Waheed et al., 2020). Understanding the changing needs and practices of GMERs and scholars with library resources can help nurture future directions for the library and advance the mission within larger institutions. Traditional librarian roles can no longer effect positive change; thus, the new roles are essential for future scholars (Weise & McMullen, 2001). Librarians who comprehend how scholars communicate new findings and share information with others can inform the design and

development of new publishing supports and services (Detlefsen et al., 1996). Specific implications for medical librarians are summarized below (Kratt, 2019):

- assume the character of a facilitator rather than a transmitter of knowledge by providing numerous opportunities for adult learners to construct their knowledge;
- provide options for students to test their knowledge;
- provide learning environments that afford differing experiences for adult learners;
- encourage group interactions and discussion opportunities; and
- provide time for learners to reflect on new experiences.

Medical librarians can work with Graduate Medical Education departments and Residents to develop new methods of embedding learning support into curricula and GMER workflows. Conducting a case study at a Graduate Medical Education program to elicit GMER views on the scholarship processes that contribute to the growing research on how GMERs perceive barriers with scholarship outputs. Each section was reviewed and analyzed for themes identified within the Graduate Medical Education program and considered for future implications of this study. Chapter 2 included a review of the literature that establishes the prevalence of the problem.

Chapter 2: Literature Review

The problem for this study is that GMERs publish at a rate that does not set them up for professional success. The purpose of this qualitative study was to investigate how GMERs are supported to publish at a rate that sets them up for professional success. This chapter presented an overview of the literature concerning GMERs' scholarship, including the production rate, place of publication, and, more specifically, challenges faced by GMERs. In addition, research, scholarship, and reviews of adult learning theories are discussed.

This review of the literature was centered on the following major themes: 1) a historical review of GMERs' scholarship in the United States, 2) journal article proliferation, 3) the present state of GMER publication policies in the United States, 4) adult learning theory 5) Knowles Andragogy Theory and approach, 6) Kolb's Experiential Theory (ELT), 7) constructivism development and practice, and 8) reflexivity theory and applications. I reviewed 5 years of institutional data and archival records to inform this case study. Institutional records may provide significant findings and rich information in standards of practice or discipline-specific guidelines. The literature indicated that researchers investigating potential sources of information must be mindful of the advances in scholarship that occur continuously (Alpi & Evans, 2019). Researchers concurred that multiple data streams, including institutional and archival data, enhance comprehension of research projects.

Literature Search Strategy

This case study utilized a literature search strategy of peer-reviewed journal articles and dissertations. Articles were obtained from PubMed, and dissertations were acquired from ProQuest. Web resources and institutional sources supplemented the articles and dissertations. Approximately 100 peer-reviewed articles about scholarship barriers GMERs encountered were reviewed.

Searching and selecting relevant articles was an iterative process. The keywords I used were *scholarship, residents,* and *barriers*. I utilized Boolean search terms AND, OR, and NOT to provide focused and germane results. Research has described Boolean search strategies as helpful for focusing literature review (Schichtel, 2010) and improving the relevance of articles. The primary focus of the articles was GMERs' perceptions of scholarship barriers, strategies for scholarship production and improvement, and attributes of Residents who have achieved publication success; however, none of the articles reviewed referenced institutional GMERs or graduates of this institution.

Conceptual Framework

Conceptual frameworks include one or sometimes more than one theory and other concepts and findings in the literature (Green, 2014). Conceptual frameworks typically show relationships among ideas and how they relate to a research study. For the current study, learning theories inform all aspects of GMER education, from the mission, outcomes, implementation, evaluation, and exposure to high-quality, peer-reviewed library collections and services.

Adult learning theory (ALT), also known as andragogy, is a concept that focuses on how adults learn and how to facilitate their learning (Zepeda et al., 2014). The theory recognizes that adults have unique needs, motivations, and life experiences that affect their approaches to learning. Compared with children, adults are self-directed, have prior knowledge, and often have specific learning reasons or goals. Thus, adult learning theory emphasizes creating learning experiences that are practical, relevant, and geared toward helping adults achieve their goals. Understanding the principles of ALT can help educators design effective learning programs that meet the specific needs of adult learners (Zepeda et al., 2014).

ALT is highly relevant in Graduate Medical Education because adult learners have unique needs and challenges compared to traditional undergraduate medical students. At this point, GMERs have already completed significant education and training. By understating ALT, educators in Graduate Medical Education can develop more educational strategies tailored to the needs of these unique adult learners (Zepeda et al., 2014). For example, problem-based learning, case-based learning, and other interactive methods emphasize application and relevance to the learner. ALT can also create opportunities for self-directed learning, such as online modules that allow learners to control their education and tailor learning to specific needs (Mezirow, 1997). Applying ALT in a Graduate Medical Education setting can enhance the effectiveness and efficiency of training programs, leading to better patient outcomes and improved GMER satisfaction and scholarship.

In all adult learning theories, the learner is an active participant. Academic librarians are encouraged to use andragogical principles to manage and deliver library collections and services that support the development processes of new scholarship (Watts, 2018). While there is no single theory regarding adult learning, adults learn through an accumulation of formal and informal education and lifelong experiences (Bennett et al., 2012). Therefore, with a foundation in andragogy, GMER perceptions regarding scholarship production can be more fully understood.

More contemporary understandings of adult learning theory shape how information is propagated. Recent technological advances have allowed for radical models for medical education development, including simulation, peer teaching, flipped classrooms, expanded inclusivity, online courses, and open-access publishing paradigms of medical journals (Teunissen et al., 2007). Based on the advances of the past few decades, the future of curriculum design in medical education is challenging to predict. There are more creative innovations that can improve scholarship to be discovered. Many medical educators use adult learning theories as a conceptual framework to provide context for their educational program design (Sawatsky et al., 2019). Therefore, adult learning theory is appropriate for my efforts to answer the research question.

Among the many adult learning theories, the most common are clustered around Knowles's unifying andragogy theory (Taylor & Hamdy, 2013). The theory was developed based on refined pedagogical approaches by earlier European educational leaders. Andragogy clarifies how adults learn best and describes their attitudes toward

learning. Knowles's theory is well known for examining existing systems and concepts by applying adult learning theory (Knowles et al., 2014).

This section reviewed Knowles's ALT and its connection to this dissertation. Knowles defined andragogy as the "art and science of helping adults learn" (Carlson, 2019, p. 1739). Andragogy examines how learning in a class setting can be more attractive to adult learners. The job of the adult educator is to move adult students from their old learning methods and into new patterns of learning when they become self-directed and take responsibility for their learning and the direction it takes (Knowles et al., 2014).

Knowles identified six assumptions about adult learners and how they learn. The six assumptions are the need to know, self-concept, the role of experience, readiness to learn, orientation to learning, and motivation (Knowles et al., 2014). GMERs are well suited to success as adult learners because they align with the six assumptions. They are motivated, experienced, and problem focused individuals who actively seek to understand clinical applications of their education. Their self-directed nature and commitment to their roles in healthcare make them particularly receptive to ALT. Embracing these six descriptors of Knowles' ALT, GMERs promotes a learner-centered approach, enhance their educational experiences, and facilitates their growth as future healthcare educators and leaders (Knowles et al., 2001)

A second adult learning theory is Kolb's experiential learning theory (ELT) (Fewster-Thuente & Batteson, 2018). This theory describes the dynamic process of learning, which incorporates the cycles of concrete experience, reflective observation,

abstract conceptualization, and active experimentation (Senok et al., 2021). Kolb's theory can be used to transform medical education into a more progressive and dynamic model. The author argued that human presence enhances adaptability, empathy, teamwork, and communication skills and fosters personal autonomy (Poore et al., 2014). Co-curricular programs are enhanced as GMERs contextualize experiential learning (Kolb's ELT) while embedded in real-world Graduate Medical Education (Morris, 2020).

ELT allows an accepted educational approach that requires adult learners to apply knowledge previously learned through a common Graduate Medical Education concept of rounding (Fewster-Thuente & Batteson, 2018). Researchers argued that ELT and mentorship stimulated scholarly publication (Ratnapalan & Ghavam-Rassoul, 2020). Thus, educational courses should design curricula to promote scholarship with learners and to evaluate their effects.

ELT was developed in 1984 and is one of today's most utilized adult learning theories (Fewster-Thuente & Batteson, 2018). The five themes of ELT are as follows: learners are involved, active members; knowledge is positioned in place and time; learners are exposed to innovative experiences, which involve risk; learning demands inquiry to specific real-world problems; and critical reflection acts as a mediator of evocative learning (Poore et al., 2014). GMERs actively engage in all five themes during their residency experiences. Researchers demonstrated that this model centers on a holistic viewpoint that involves four stages: concrete learning, reflective observation, abstract conceptualization, and active experimentation (Morris, 2020). Morris also highlighted an issue concerning the lack of clarity as to what is classified as a concrete

learning experience. Recent revisions to Kolb's model have more clearly defined that experiential learning consists of contextually rich concrete experiences, critical reflective observations, contextual-specific abstract conceptualizations, and practical active experimentations (Fewster-Thuente & Batteson, 2018).

Through this reflection, the adult learner formulates basic abstract concepts and can make broad generalizations. Learners grow their understanding by assessing the implications of newly acquired knowledge in new situations. This process provides them with a substantial new experience; thus, the cycle continues. Researchers have effectively demonstrated that experiential learning enhances learning outcomes (Burch et al., 2019).

Another example of using ELT as an anchoring technique is learning through simulation. Medical-based simulations are now a popular feature of curriculums and represent a novel way of learning complex topics. Medical educators should consider including simulation-based activities to bridge theoretical and actual clinical practice (Raman et al., 2019). Experiential learning and simulation-based activities facilitate learners, integrate theory into practice, and improve vital communication skills, clinical competencies, clinical judgments, and assessment skills (Poore et al., 2014).

ELT methodology and design provide opportunities for GMERs to practice skills acquired in this Graduate Medical Education department setting. The conclusion that experiential learning facilitated with curricular design and assignments and mentorship stimulated scholarly publication has been validated (Ratnapalan & Ghavam-Rassoul, 2020). It has been asserted that educational courses should design curricula that promote scholarship in learners and evaluate their effects. ELT enables students to become

reflective practitioners and provides a sense of purpose to learning, promoting self-awareness, self-empowerment, self-improvement, and emancipation (Cooke & Hensley, 2013).

Reflective practice is a technique that scholars critically and thoughtfully consider new material they are learning and apply to their academic and clinical work. These two pieces of the theoretical hypothesis – experiential learning theory and reflective practice – work together to form a learning sequence to facilitate educators' and librarians' growth and proficiency.

The central aspect of learning is cognition changes, notably metacognition (thinking about thinking), scaffoldings (building new knowledge from existing knowledge), and reflection. Data can be attained during the reflection aspect of Kolb's theory to answer how to support GMERs to publish at a rate that sets them up for professional success.

Strategies for educators such as Knowles's adult learning model and Kolb's landmark six-step approach for curriculum design proved seminal to the field of GMER scholarship. Researchers demonstrated that innovative programs combined with experiential learning improve exposure to learning theories, increasing awareness of scholarship issues (Nowell et al., 2020).

Literature Review Related to Key Concepts and Variable

Selected articles and reports relating to the challenges of discerning barriers to Graduate Medical Education publication, bibliometric analysis, and publication measurement are reviewed in this section. For example, self-efficacy is an essential

characteristic of GMERs and scholar-practitioners. GMERs often display self-efficacy as part of their daily duties. Researchers provided diverse views of strategies to support scholar-practitioners advancements during their capstone study (Godwin & Meek, 2016). These articles offered theoretical propositions about research training programs that support the following research propositions. First, producing more and better science is a desirable goal, and second, the graduate training situation is the most effective setting to include scientific production. At least one research study addressed the role of research courses in an online environment (Lim et al., 2008). This study considered that communication issues negatively affect learning, particularly the lack of immediate and spontaneous correspondence with faculty or educational leaders.

Two studies discussed the significance of the transition from student to researcher (Edosomwan, 2018; Werner & Rogers, 2013). The researchers reviewed that the primary purpose of doctoral training is to prepare students for a lifetime of intellectual inquiry that manifests itself in creative scholarship and research. It is difficult to predict who will complete the transition from a course taker to an independent researcher (Pottle, 2019). Researchers considered what additional factors GMERs must have to be successful with publication and concluded that creativity is a critical factor that predicts success within the macro-environment (Lovitts, 2008). Practical issues found to affect success include intelligence, knowledge, thinking styles, personality, self-esteem, self-confidence, motivations, and scholarly environments.

Research also documented student learning experiences as they conducted research (Ismail et al., 2013); (Rockinson-Szapkiw et al., 2013). Findings revealed that

student experiences might differ by age, program, gender, ethnic group, and year of study. They also demonstrate that marital stability, educational quality, and satisfaction play a role in academic success. Another study showed that the medical student experience differs according to how they perceive the research task (Stubb et al., 2014). For example, some perceived research as a job to do, others as a journey, and still others as making a difference.

Historical Review of GMER Scholarship in the United States

Reviewing the historical literature surrounding this phenomenon's details in Graduate Medical Education departments was critical to fully comprehending Graduate Medical Education scholarship output complexities. Many researchers have studied this problem of GMER scholarly output for many years (Grady et al., 2012). Much of the past research examined some critical factors that led to a marked increase in Graduate Medical Education literary output production starting in 1989 (Kokol et al., 2021).

Past research specifically examined the problem of how GMER's scholarly output, such as geographic locations of Graduate Medical Education academic programs, the specializations of GMERs, sponsoring institutions, the role of Graduate Medical Education educational programs, the role of Graduate Medical Education faculty, the role of medical librarians, and all the interventions that have evolved (C. Chen et al., 2013; Ma et al., 2018; Sollenberger & Holloway, 2013).

These and other factors have affected the patterns of GMER scholarly output, the way GMER scholarly output has been conceptualized and researched, and the assortment of strategies that have been used in the attempt to improve GMER scholarly output

publication at Graduate Medical Education programs across the United States (Seales et al., 2019).

Over time, scholarly output has evolved from the humble shared letters to a standardized structure. Peer review has been the primary method of transferring medical knowledge since 1660, when the Royal Society of London became the first public institution dedicated to experimental scientific research and learning (Marta, 2015). The organization of information and articles would evolve by a standardized format consisting of an introduction, accounts of failed experiments, and a series of experiments and conclusions based on the author's reasoning, culminating with the conclusion. It was in the mid-1800s that authors began their approach based on a philosophical research gap mentality (Roberts & Turnbull, 2002).

These constant changes, evolutions, and adaptations to improve articles' structure, content, and standardization continued well into the 20th century (Marta, 2015). The format standardization eventually became known as the Introduction, Methods, Results, and Discussion (IMRAD) and became widely adopted in the 1970s. This structure facilitates modular reading, benefits the reader, and facilitates peer review (Nair et al., 2019).

Journal Article Proliferation

The evolutionary outcome of the changes and standardizations with article formats resulted in tremendous growth in biomedical literature. This significant growth in the literature period is indexed in the databases that stem from MEDLINE. MEDLINE is the central database used in PubMed, a free search engine that indexes biomedical

information. PubMed was developed and governed by the National Library of Medicine (NLM). Before 1996, PubMed searching was done primarily through institutional facilities, most notably University Libraries (Canese & Weis, 2013). Research has demonstrated that by making PubMed freely available, there is more engagement with biomedical resources. More engagement can be interpreted as a mechanism of action that creates new scholarly content (Perski et al., 2017).

The world's academic output is estimated at 2.5 million articles annually, doubling every 9 years (Warren et al., 2017). With this growth, there are growing complexities in the number and affiliation of authors and collaborative partners from wide geographic disbursement and explosive growth patterns. It is not unusual to read a peer-reviewed paper published by five or more authors from across the globe. The increased number of authors presents challenges with conflicts of interest, biases, study sponsorships, and non-standardizations of the institutional review board's policies and procedures (Mandrioli et al., 2016).

The United States journal output history provides insights and lessons for current Graduate Medical Education scholarship output (Simpson et al., 2013). ACGME guidelines provide a structure and support GMERs with scholarly activities. They are more specific and list concrete steps to grow publication output. Current policies and recommendations, including the ACGME Common Core Components, reveal more detail (Simpson et al., 2013). The 2020 ACGME Common Core Components state:

> Graduate medical education transforms medical students into physician scholars who care for the patient, family, and a diverse community, create, and integrate

> new knowledge into practice, and educate future physicians to serve the public. Practice patterns established during Graduate Medical Education persist many years later (ACGME, 2021, p. 4)

This joint core statement reaffirms the concept of nurturing and building close relationships between the GMER scholars' sense of professional identity with their enhanced educational capacities to deliver medical care, teaching, and learning. This statement also helps define the vision of scholarship integrated with clinical practice, opening new and novel interpretations of GMERs' roles as teachers, educators, researchers, and scholarly authors (Boyd, 2013). When combined with qualitative research, a qualitative approach has been described as an effective method to deeply understand a phenomenon (Palinkas et al., 2015).

Self-Concept

GMERs partly learn through self-directed learning (Caruso et al., 2019). Designing structured programming motivates faculty to volunteer, thus building trust and rapport with GMERs. GMERs have an intrinsic self-concept of their goals and objectives for various learning experiences or enhanced conceptual comprehension (Cooper & Richards, 2017). Enhanced conceptual understanding of a topic is related to a context lecture on a topic. Therefore, if scholarship is presented as a positive goal, the development of new scholarship is strengthened, which addresses the specific problem of GMERs not publishing at a rate that sets them up for professional success. ACGME requires that GMERs effectively understand their role in lifelong learning by developing

skills and behaviors to improve patient care based on continuous self-evaluation (Sawatsky et al., 2017).

Role of Experience

GMERs have graduated from medical school. Their Graduate Medical Education residency experiences are meant to add clinical work with live patients in the hospital setting. Graduate Medical Education faculty and attending physicians closely supervise GMERs. An introduction to academic workshops helps define educational scholarship, recognize the value of educational scholarship, and get started with educational scholarship (Williams et al., 2017).

Readiness to Learn

GMERs are ready to apply their academic knowledge in the field. How do they translate their academic experiences to a real-life setting? Developing mentor profiles that align with GMERs' personal and academic interests is advocated as a successful method of building rapport and readiness to learn (Caruso et al., 2019). Voiced support is noted for workshops or training where GMERs are exposed to knowledge supporting scholarship creation and how it is applicable and relevant to their learning (Cooper & Richards, 2017).

Orientation for Learning

GMERs are self-motivated and want to apply their knowledge and experience to aid their learning (Cooper & Richards, 2017). GMERs have been preparing for their roles as physicians for a long time, and their minds are to continue their training. GMERs want to apply the latest knowledge to understand current patients or learn more about a specific

case or disease progression. The importance of library exposure to increased awareness of scholarship outcomes in biomedical journals is described as positively impacting the literature (Quesenberry et al., 2016).

A retrospective study analyzed the results of two cohorts of GMERs in Family Medicine that implemented a structured roadmap for scholarly activity (Waheed et al., 2020). Waheed argued that the availability of a wide variety of resources might increase the likelihood of more scholarship. Waheed reasoned that the establishment of a research culture is crucial. Additional studies are needed to determine what leads to establishing a research culture in a residency program. SPSS was utilized to analyze the relationships between a mixed-methods survey and quantitative analysis. The analysis reveals a preference for protected regular research time blocs to support the production of scholarship (Nair et al., 2019).

Adults Are Motivated to Learn by Internal Factors

Numerous factors that motivate Residents include family history, interest in health care, wanting to make a good salary, or craving for a physician's prestige. GMERs should have a voice in their Residency experiences, such as feedback surveys and opportunities to voice different learning styles in person, remotely, or simulation. A sense of shared emotional intelligence, empathy, humor, and patience can develop through working closely and meeting regularly, which provides a foundation for building excellent mentor-mentee relationships, translating into improved scholarship opportunities and strategies (Caruso et al., 2019).

Motivation Mentorship

The goals of the motivation mentorship included providing faculty the opportunity to conduct scholarly research or an education project in an area of interest and importance in medical education. Researchers surveyed GMERs about the perceived need for more knowledge about creating a scholarship (Stephens & Wardrop, 2016). Stephens reiterated the positive association of mentors with improved scholarship. Motivation is self-evident, as it is a long road filled with much work to become a Physician. The mentorship model highlights experiential learning and self-directed motivation to educate trainees and faculty to participate in learning actively. The motivation to perform scholarly research can also be influenced by the current workload or academic or leadership positions (Zelle et al., 2017). Zelle advocated for a rotation of leadership assignments regularly to provide ample research time for all GMERs.

Researchers noted that the lack of protected research time was the most significant barrier faced by GMERs (Yumeen et al., 2018). Yumen suggests six significant factors demonstrated by GMERs that can be expressed as themes and motivational factors. These themes are:

- quality of research question,
- faculty investigator attributes,
- availability of support,
- research program expectations,
- time factors,
- collaboration between Residents

Reflexivity

In information-seeking behavior and information literacy, students reflect on their experiences, integrate them into their learning, and reflect on the educational experience from start to finish. Reflective practice facilitates learning by doing and enhances critical thinking skills. The Kolb cycle is linked due to the emphasis on reflection in learning. It requires learners to represent learning in action, which comes from representing learning (Kamal, 2019). The benefits of reflective practice are evident. Although it may be difficult to perform initially, practice allows researchers to learn (Koshy et al., 2017).

The reflective practice originates from Schon, Mezirow, Dewey, Kolb, and Habermas (Kamal, 2019). Reflective thinking involves overcoming inertia, including one's ability to accept ideas at face value. Reflective thinking involves a commitment to endure a condition of rational unrest and disturbance, meaning judgment must be suspended while additional inquiry occurs (Ng, 2012).

Constructivism

Theories of adult learning reflect underlying beliefs about knowledge and the processes involved with knowing. The student is ultimately responsible for learning and is endorsed by educational leaders (Rillo et al., 2020). The student builds new knowledge from previous experiences and, in this case, study through scholarship production. The learning innovations derived from epistemological changes to the learning process in medical education can respond to contemporary trends, manipulatives, and learning styles.

The teaching history of Medicine is strongly associated with positivism (Comte, 1975). It places a high value on understanding the world through objective study, observation, and knowledge development that is value and context-free (Mann, 2011). However, case studies are constructivist and are described as those who engage and learn from it to create their realities and actively learn from the research process (Crowe et al., 2011). The constructivist paradigm views knowledge as being actively designed and constructed (Karpouza & Emvalotis, 2019). Graduate Medical Education Medical Residents' curricula are based on constructivist principles and how the learner constructs learning. Constructivism is a direct product of human interaction and relationships with shared meaning and associations with data sets (Garneau & Pepin, 2015). Researchers noted that students learn best by actively creating their knowledge structures in opposition to the traditional models where education is a unidirectional flow of information from teacher to learner (Mann & MacLeod, 2015). Journal article scholarship represents students collaborating, creating, and organizing knowledge structures (Roberts & Turnbull, 2002).

This reformulation of knowledge and integration concepts across multiple avenues assures comprehension. Journal article creation can be a powerful tool because it allows a broad impact of knowledge to create a robust and refined document. Additionally, journal articles are subject to formal perpetual peer-review processes (Okoduwa et al., 2018).

Aligning the belief methodology underpinning the research method, research question, and research approach is necessary for rigorous qualitative research (Babbie,

2011). Constructivist theory underpinnings are how I chose to fully understand GMERs' perceptions, attitudes, and beliefs about scholarly output. A constructivist lens has been described in the literature as helping to break down and understand the processes of belief formation and performing a power analysis that focuses on identifying best practices for future scholarly activities, curricula, and initiatives (Wood, McCollum, Kukreja, Vetter, Morgan, Hossein Zadeh Maleki, et al., 2018). Wood explained that providing access to knowledge-based resources and bibliometric tools promotes the long-term benefit of increasing Graduate Medical Education scholarship. Expanding on this idea, researchers noted that medical library engagement was a reliable assessment of GMERs regarding creating scholarly work (Quesenberry et al., 2016).

Constructivism involves constructing a theoretical explanation of phenomena based on the participants' gathering, synthesizing, analyzing, and interpreting real-world practice experiences (Charmaz, 2014). Constructivism asserts that reality is constructed by individual social, historical, and individual contexts (Schuwirth & van der Vleuten, 2019). The authors discussed the evolving understandings and complexities of what makes a good doctor. The modern definitions of a good doctor now include scholarship acumen.

Summary and Conclusions

In exploring GMERs' perceptions about their knowledge of scholarship production, I addressed the research question and the seven themes from the literature. The research question addressed the perceptions and attitudes of GMERs and how to publish at a rate that sets them up for professional success.

To recap, the seven major themes in the literature were the following: 1) a historical review of GMERs' scholarship in the United States, 2) journal article proliferation, 3) the present state of GMER publication policies in the United States, 4) adult learning theory 5) Knowles Andragogy Theory and approach, 6) Kolb's Experiential Theory (ELT), 7) constructivism development and practice, and 8) reflexivity theory and applications.

What is known is that scholarship production is low among GMERs (Richter et al., 2008). What remains unknown are the perceptions and attitudes of scholarship among Graduate Medical Education. It is unclear why some Graduate Medical Education programs or GMERs are more successful with scholarship than others. It remains ambiguous as to what constitutes successful individual attributes that contribute to high scholarship production.

This study examined how GMERs may be better supported to publish at a rate that sets them up for professional success using shared knowledge. The results of this study can be used to fill gaps in what needs to be discovered to increased scholarly publishing among GMERs. The results of this study will extend knowledge related to Graduate Medical Education.

Practical and efficient solutions can be developed to overcome the problem by understanding what is unknown. The exploration of the perceptions of GMERs about scholarship production fills the gap in practice. Having established that publications are low, for unknown reasons, it is now possible to explore how Residents may be better

understood and supported to produce more scholarship. This qualitative study demonstrates the need for additional training and resources for GMERs.

In Chapter 3 I explained my choice of research design and why it was appropriate. I discussed the research design and rationale for my qualitative study. I addressed my personal role as the researcher and my methodology. I concluded that chapter by analyzing the trustworthiness and ethical protocol I utilized in my study.

Chapter 3: Research Method

This qualitative study investigated how GMERs are supported to publish at a rate that sets them up for professional success. The following sections included the rationale for the critical decisions in selecting the research method. Resident transcripts were uploaded into NVIVO software, a qualitative software designed to organize, store, and analyze data. From there, I utilized inductive line-by-line coding to generate keywords and themes.

Specifically, a qualitative case study approach was used as it allows researchers to explore phenomena such as feelings, thoughts, or perceptions that may be challenging to extract through conventional research methods (Rashid et al., 2019). The qualitative research design model effectively explored GMER characteristics, feelings, and perceptions. A qualitative research design model can identify barriers GMERs may experience when performing scholarship. Further, a qualitative approach is needed when the nature of a research question requires exploration (Fàbregues & Fetters, 2019). I used the qualitative research design as a systematic approach to describe experiences and give them meaning through thematic analysis.

Research Design and Rationale

The research question for the study was as follows: how can GMERs be supported to publish at a rate that sets them up for professional success? The central concept of the study was to examine GMER perceptions and attitudes toward scholarship. I selected case study research (CSR) as the most appropriate research tradition for this study. Understanding a research philosophy and tradition is critical as it builds the

foundation for approaching the research. The strengths of the case study research tradition are that it is appropriate for examining a current phenomenon within its real-life setting, especially when the borders between the phenomenon and context are not obvious. Further, it enables the exploration of complex situations, gathering multiple perspectives from various sources, including contextual information. It is beneficial when looking at a process, and case studies answer “how” questions that are compatible with the research question (Crowe et al., 2011). The weaknesses of the case study are often a poorly defined data analysis process, but a researcher can follow any number of analysis methods. Another weakness is the ongoing debate of whether a case study constitutes a method describing what is studied in oral research (Zainal, 2007).

Yin reviewed what makes qualitative research good research and noted the goals of conducting a good case study as a research theory (Yin, 2017). Yin noted that the challenge remains to collect, present, and analyze The word "data" is plural (for the rarely used singular "datum"), so be sure you use the plural form (e.g. the data indicate). Yin also discussed the traditional prejudices against the case study, noting that lack of rigor has been the most common criticism of this methodology. Yin highlights the critical role of well-defined questions in the case study process. (Yin, 2017). Clearly formed research questions guide the study, help researchers stay focused on their objectives and ensure the research addressed specific issues relevant to the case (Yin, 2017). Yin reviewed the six sources of potential data which include documentation, archival records, interviews, direct observations, participant observations, and physical artifacts (Yin, 2000).

Another factor to consider for case study research is the site. Researchers have elaborated on the strengths of single-site case study instead of a multiple site case study (Gustafsson, 2017). A single site is ideal for this research, as the Graduate Medical Education department, medical library, and interview participants are all in one central location. The ultimate strength of the single-site singular case study is the researcher's ability to understand and describe the context of science. It is noted that the researcher must describe the phenomenon so that a reader can understand the context and produce a theory related to the concept. CSR has core elements of thoughtful bounding, defining the case's scope, collecting data from multiple resources, interviewing key players, and reviewing written institutional policy documents (Yin, 2017).

Understanding the significance and relevance of the constructivist theory in this context sheds light on how GMER publications can effectively promote these transformative outcomes. The applicability of the constructivist theory in qualitative research is described as a relevant framework within educational research (Mogashoa, 2014). Various teaching methods based on constructivist learning theory are examined and evaluated. As constructivism is about teaching, learning, and knowledge, research comprehension of the concept of constructivism is essential (Zucker, 2016). Constructivism promotes problem-solving and collaboration to construct meaningful knowledge, and it can be a proper research method in Graduate Medical Education (Rillo et al., 2020).

Constructivism is also an excellent method for learning about essential aspects of interpretations of reality, applications of knowledge, and participants' needs and interests

that can impact teaching and learning policies. The relationship between constructivism and CSR can be used to answer a series of methodological questions (Lauckner et al., 2012).

My rationale for using a case study design was to research several factors that make it a valuable and relevant approach for learning and understanding complex medical scenarios. Case study research is widely used in medical education for its ability to provide in-depth analysis and practical applications (Fàbregues & Fetters, 2019). This research contains many opportunities for natural and face-to-face encounters with GMERs. These face-to-face encounters add credence to the results and are factored into the descriptions of interview questions. This research also models Knowles's principles as adults can learn in various settings if learning contains consistent support and personal relations with professors and peers.

Role of the Researcher

A strength of this study is my experience as an academic medical librarian for over 28 years across the United States. In this role, I have collaborated closely with Residents and Graduate Medical Education departments. A strength of this research is that I am familiar with the GMERs.

Regarding the process, my role in conducting this qualitative case study was reviewed and clarified at the interview sessions' opening. The purpose of the case study was explained at the beginning of the GMER orientation, and the language was English and informal. I also reviewed the association between academic medical librarians and why this association is beneficial, explaining that the goal was to understand attitudes,

beliefs, and ideas about producing scholarly output. Lastly, I ensured that all data would be deidentified and stored for 5 years, and that after 5 years, the data will be destroyed.

As the primary instrument for data collection, researchers must be mindful of biases and errors in judgment affecting data quality and consequent research results (Johnson et al., 2020). Thus, I was mindful not to let my proximity with GMERs interfere with or color my judgment of my interactions and data, especially as I have experienced Residents' dilemmas as they strive to create scholarship while working in a clinical capacity.

Methodology

This study employed an appropriate case study approach, as it provided the method required to answer the research question. The perspective reaffirmed the persistence of graduate students and aligned with the Knowles ALT, and Kolb's ELT, which supported the research. This study focused on the scientist-practitioner model of graduate education, which is also relevant to the research.

This process was facilitated using a conceptual framework developed from a review of ALT to guide data collection and the initial stages of analysis while inductively generating categories from 10 GMERs with real-world experience in a Graduate Medical Education setting. There were 10 Residents chosen, as this number of participants denoted saturation (Aguboshim, 2021)

The categories from the interview process were tied to the conceptual framework used to create specific questions to answer the research question of how GMERs can be supported to publish at a rate that sets them up for professional success. All interviews

were conducted utilizing MS Teams. Each interview was audio recorded and saved for retention.

The setting for all interviews was MS Teams. This method required all interviewees to log in to their work account and was verified by two-factor authentication. The timing was at the convenience of the participants. There were no traumas or other stressors at the time of the interviews that may have affected interpretations or answers to the research study questions. The survey and questionnaire were developed in consultation with a multidisciplinary co-investigative team representing Internal Medicine, Family Practice, General Surgery, Orthopedic Surgery, and Librarian perspectives.

Participant Selection

No exact formula determines the most appropriate sample size for a qualitative study as tradeoffs exist between breadth and depth, space, time, and financial limitations. I selected 10 individuals who represented perspectives and experiences of the research question that demonstrated variability (Selwood et al., 2020). I selected participants from various ethnicities, genders, ages, and different medical specialties.

Purposeful sampling has been described as a universally utilized technique in qualitative research studies to identify and select individuals knowledgeable about the phenomenon of interest (Palinkas et al., 2015). It is important to emphasize that purposeful sampling is pivotal for qualitative researchers to gather in-depth insights from participants who possess valuable knowledge about scholarship production (Palinkas et al., 2015).

The participant group comprised 10 GMERs working collectively within a Graduate Medical Education academic program. The criteria for selection in the research was that all participants were enrolled in an accredited medical residency program. The American Osteopathic Association and Det Norske Veritas (DNV) accredited the residency program. The California Department of Public Health and ISO 9001:2015 provided another license for the academic medical center.

The sampling strategy that was employed was purposeful as purposeful sampling strives to increase the credibility of the results and collect information and data from participants who are easily reachable to the researcher (Palinkas et al., 2015). This sampling method aimed to generate insights into key evaluation issues and program effectiveness, rather than an empirical generation from a sample to a population. Random is suitable for small sample sizes and reduces bias (Palinkas et al., 2015).

The sample size was determined to be 10 and was appropriate with the constructivist theory method (Sethi et al., 2017). A snowball sample method was used to develop a network of GMERs at the research location. I obtained the email list of the medical Residents and sent an invitation email. Using a snowball sample and a small sample size precluded generalizing the study results among GMERs (Ghaljaie et al., 2017). The data collection method was consistent with constructivism's research purpose and qualitative methodology.

A significant source of data collection was obtained from in-depth, semistructured questions. The interviews were conducted with the Graduate Medical Education Department in an academic medical center in Ventura, California. Before each interview,

I explained the research's purpose and informed all the recordings. Each interview concluded in one full session. One interview was delayed by approximately 10 minutes due to a longer clinical rotation in the Emergency Department.

Instrumentation

The instrumentation for data generation were two surveys. One survey consisted of demographic self-identifications. The second survey consisted of questions that I developed. All survey data were recorded utilizing MS Teams. I obtained written consent from all participants before survey administration. Any GMER averse to providing written consent was eliminated from the participant pool.

I developed and designed all the interview questions in 2022 to be semistructured. Specifically, I designed the questions in this manner for flexibility in case clarification was needed. Interviews were brief and limited to 60 minutes. I explained to the participants that I may check back in to verify some aspects of their interviews. I provided my contact information and advised them to contact me if they had any questions or comments.

Interviews were conducted face-to-face in a private office via MS Teams. The interview process consisted of two surveys. One survey gathered demographic data, and the second had 10 questions I generated as the researcher. The selection of the interview site has a clear purpose and relates to the study's objective (Houghton et al., 2017).

Markers acknowledge the answers and indicate to the research subject to continue their thoughts (McGrath et al., 2019). For example, semistructured interviews, which

require asking questions from a specific set of questions that have been annotated, are robes are defined as non-verbal nudging, verbal nudging, and or paraphrasing questions (Blandford, 2013). Probing is an essential skill for qualitative researchers, as it can reveal hidden meanings, and captures participants experience's and perspectives (Blandford, 2013). I utilized probing to elicit additional details with interview questions with each Resident. The interview guide served as a method to direct conversations to maintain focus on the topic. The interview assisted with my comprehension of the experiences and perceptions of United States GMERs toward the scholarly output.

Content validity was linked to the research question in this qualitative study. The research question guided the selection and development of the research instrument's content or items that accurately capture the phenomenon under investigation (Sürücü & Maslakci, 2020). When designing the qualitative study, I developed a research question that reflected the specific aspects of the phenomenon I wanted to explore. The research question served as a roadmap for the data collection and analysis processes. The content validity of the study is realized by confirming that the research question was well-aligned with the research objectives and effectively characterizes the problem studied (Drost, 2011). To establish content validity with a research question in a qualitative study, I considered the following:

Clarity and Scope

The survey questions were clear, specific, and focused on the problem of Graduate Medical Education scholarship production. The questions outlined the key

aspects that were explored. I avoided ambiguous or overly broad research questions that may lead to confusion or insufficient content coverage.

Relevance

The survey questions directly addressed the research objectives and provided meaningful insights into the problem. The interview questions were carefully crafted to capture the content relevant to the study. I aligned the research questions with the research objectives and ensured that the content of the study was aligned with its intended purpose.

Depth and Breadth

The interview questions encompassed a sufficient range of content to explore the problem adequately. The questions included various perspectives, experiences, or contexts related to the scholarship production among GMERs. By including diverse aspects of the content, I enhanced the study's content validity by capturing the problem's richness and complexity (Oldland et al., 2020).

Iterative Refinement

Survey questions were refined and iterated during the research process. As I collected and analyzed data, new insights emerged, necessitating revisions to the research questions. This iterative process ensured that the research questions continuously aligned with the advancing understanding of the content being studied (Xu & Zammit, 2020).

Alignment With Methodology

The survey questions were compatible with the chosen qualitative methodology and data collection techniques. The questions guided the selection of appropriate data

collection methods (e.g., interviews and observations) to capture the relevant content accurately. By establishing clear and focused interview questions aligned with the research objectives and adequately capturing the content of interest, I enhanced the content validity of this qualitative study (Oldland et al., 2020). Regular reflection, peer feedback, and iterative refinement of the survey questions can further strengthen content validity as the study progresses (FitzPatrick, 2019).

Procedures for Recruitment, Participation, and Data Collection

I obtained the GMER email list from the Graduate Medical Education residency program administration. I crafted an email to all Residents across medical disciplines to ask for their participation in a research project. I explained the research project and my role. I sent all participants informed consent forms.

I reviewed the confidentiality aspects and the IRB process to protect research participants. Gathering 10 participants was quick, and I achieved the goal within one week. Any gathered data was intended for line-by-line scrutiny to capture aspects of GMERs' interpersonal feelings of support, strengths, motivations, and characteristics that aided their ability to report barriers and explain how they successfully plan to complete scholarly journal output. Interviews were audio-recorded, transcribed, and coded.

The interview schedule was designed to be well-paced and have topics ready to explore. The researcher was mindful of allowing appropriate time for GMERs to answer the questions meaningfully. The researcher prepared for the interview by practicing with volunteers to clarify questions and review any aspects of active listening. Rapport was

built with the interviewees, and the researcher was mindful of explicit and implicit power relationships. Notes were recorded by hand to capture any nonverbal cues or markers.

The interviewees read the informed consent process, explaining the study's purpose, participation risks, and voluntary participation. Consent forms were required from all participants who agreed to participate in the case study research. The researcher was the Medical Librarian at the Graduate Medical Education site, potentially putting the researcher in a position of power over the participants. To minimize any risk, this relationship was disclosed.

Results from the demographic survey were included in the analysis of the data. A log of nonverbal interactions was kept, adding insight into participants' attitudes and perceptions as they answered questions. Participants' names were changed to a pseudonym to protect participant confidentiality further, and no participant identifying information was published. Project study data was stored on USB-based encrypted storage to prevent unauthorized disclosure. All paper copies of files were maintained in a locked file to which I only have access. All data is maintained for 5 years and then destroyed.

I explained the value of the case study and the opportunity to affect local, national, and global positive social change due to increased scholarly output. I pledged that the interview participants were professional, non-judgmental, and transparent with professional conduct and findings and provided participants with copies of all documents. Potential risks were described, such as psychological stressors, potential professional impacts, ostracism by peers or program staff, or potential political repercussions. IRB

role and ethical considerations were reviewed. It was explained that GMER names were masked to protect confidentiality during and after the research, and the results were anonymized.

Data Analysis Plan

This case study utilized critical thematic analysis (CTA) as a methodological tool to collect, code, and interpret data sets. CTA strives to look for themes of recurrence, repetitions, and forcefulness within interviews or observations (Lawless & Chen, 2019). CTA is often used to analyze types of qualitative data, including qualitative data collected from interviews, surveys, institutional archival documents, visual methods, observation, and field research**.** Data sets could range from short, routine responses to open-ended survey questions to interview Residents, as endorsed by (Clarke, 2016). CTA is a flexible method that finds repeated meaning across data sets essential to interpreting a phenomenon (Xu & Zammit, 2020). The connection of the data to my research question of how GMERs can be supported to publish at a rate that sets them up for professional success was crucial for establishing content validity. To ensure content validity, I worked closely with Graduate Medical Education advisors to ensure the relevance of the data and the measurement tools were appropriate. The data that was generated provided insights into factors that hinder scholarship production.

A hallmark of CTA is the concept of flexibility. Flexibility is an advantage as researchers can use inductive and deductive coding methods. Researchers have reviewed and discussed the six steps (Maguire & Delahunt, 2017):

1. Familiarization with the data

2. Generating initial codes
3. Search for themes
4. Reviewing themes
5. Define and name themes.
6. Producing the report

To guarantee content validity in this qualitative study, the data collected directly aligned with the research question and provided relevant insights into the factors, strategies, and support systems that influenced GMERs' publication rates. I selected appropriate data collection methods to gather information related to the research question. I designed the interview questions that addressed the factors influencing Residents' publication rates and explored potential strategies and support mechanisms. The questions were written to capture Residents' experiences, challenges, and perceptions related to publishing during their training and how they perceive it impacts their professional success.

I analyzed the qualitative data using a thematic analysis approach. I identified recurring themes, patterns, and perspectives from the data. These themes relate to the factors influencing publication rates and shed light on the support needed for Residents to publish successfully. I aimed for data saturation, in which collecting additional data does not provide new insights. Saturation indicates that the data collection process has adequately addressed the research question and captured the necessary content for analysis (Aguboshim, 2021).

I connected the analyzed data to the Research question by interpreting the findings regarding GMERs' publication rates and professional success. I reviewed how the identified themes and patterns align with or diverge from the existing literature and theoretical frameworks. I used NVivo software to organize and sort the data into codes and themes.

The data collection methods, interview questions, and analysis techniques directly addressed the research question of how GMERs can be supported to publish at a rate that sets them up for professional success and establishes content validity (Yu & Ohlund, 2010). The data collected provided comprehensive insights into the factors that impact publication rates and strategies to support GMERs in achieving professional success through publishing. There were no discrepant cases.

The concept of data saturation is also known as the point where the main ideas and variations relevant to the research topic have all been identified (Mwita, 2022) Although data saturation is a well-established concept, it remains challenging to measure accurately. Saturation levels vary from study design to study design. Data saturation is a key component in CSR indicating the point where the researcher has collected enough data to ensure findings are comprehensive and accurately reflect the case which is being studied (Fusch & Ness, 2015). It is a critical element of the research process that ensures the study's objective were met and that the results are robust as well as credible (Mwita, 2022).

Trustworthiness

Specific standards of exactitude are employed to ensure trustworthiness and integrity within the data and review processes, including credibility, peer review, triangulation, dependability, and confirmability. Multiple strategies were used to ensure the rigor of this qualitative case study, as validated by (Guest et al., 2020; Jirasek & Taillon, 2021).

Credibility is also known as internal validity: Prolonged engagement and persistent observation refer to the truth of data of the interview participants (Cope, 2014). The researcher enhances credibility by verifying the research findings with the participants. Answers were dependable by demonstrating engagement with the process, observation methods, and audit trails. I avoided heavy language with connotations or refrained from using adjectives that may be viewed as opinions. As the researcher, my personal views were neutral and objective.

Peer review is a common standard of rigor. Peer review is a process by which researchers invite independent researchers to review the case study researcher's audit trails. Scholars reviewed that audit trails record the detailed step-by-step processes and decision-making throughout the case study (Johnson et al., 2020). Careful and thorough reviews of audit trails enhanced study confirmability. Peer reviews also provided constructive criticisms of the study method and design and validated any researcher's conclusions or biases.

Data triangulation was used to identify the convergence of data obtained through multiple data sources and methods (interview answers, observations). Triangulation

played a role in data analysis, and the terms described how multiple data sources can be used to confirm or refute interpretations, themes, or conclusions (Johnson et al., 2020). The literature has described that the study result has greater credibility and confirmability if a theme or theory can be arrived at and validated using multiple data sources (Johnson et al., 2020).

In case study research, transferability refers to the extent to which the findings or conclusions can be applied to populations or settings beyond the department (Greenhalgh et al., 2003). Transferability in qualitative research is the concept that findings and conclusions drawn from a study can be applied or transferred to other settings, populations or contexts beyond the one in which the research was completed (Klem et al., 2022). To establish transferability, it's important for researchers to thoroughly document the research process, design, data collection, data analysis and the context in which the study was conducted. Audit trails describe the researcher's ability to demonstrate that the participant's answers are their own and not the researchers' viewpoints (Cope, 2014). I maintained audit trails with my data by hand during the interviews and within NVivo. The research was designed to be replicated with similar participants and settings. The audit trail demonstrated confirmability by describing the conclusions and findings established and pulled directly from the data. Scholars noted that providing richly descriptive quotes and aids from participants helped to depict the emerging theme (Cope, 2014).

Thick descriptions establish credibility in a qualitative study and describe the setting, participants, and themes in rich descriptive detail (Creswell & Miller, 2000).

Creswell describes deep, dense, detailed accounts instead of simply reporting the facts of the research. The constructivist perspective contextualizes the research participants thoroughly with as much detail as possible.

Ethical Procedures

An essential element of case study research is adherence to ethical guidelines. Educational leaders have argued that qualitative research ethics are a question of procedures and protocols to follow for researchers' legal protection and a researcher's position regarding their commitment to their subjects (Twining et al., 2017). The interview protocol was designed carefully and thoughtfully, as medical ethical challenges are of concern in healthcare settings. Ethical approval was requested by the Institutional Review Board (Hamidi et al., 2018) to ensure that the rights of GMERs' research subjects are protected. Researchers have noted that transparency is required in all aspects of qualitative research (O'Brien et al., 2021). Transparency aided with critically appraising, applying, and synthesizing study findings. Ethical issues and concerns can arise due to the interview's open-ended nature and direct personal contact between the researcher and the observed participants. Responding to ethical dilemmas requires a reflexive approach where the researcher must question their motivations, assumptions, and interests.

Researchers accurately observed that attention to ethical issues would continue long after the research study is concluded (Reid et al., 2018). For example, I maintained confidentiality in disseminating findings, including audio data. Standard features of ethical considerations included storing to maintain research objectivity, upholding autonomy in gaining consent and access, balancing the protection of participants,

managing multiple roles and power dynamics, avoiding complex dissemination of findings, protecting data, and protecting research participants. As the researcher, I ensured confidentiality by masking all identifying characteristics of Residents and the research location. I stored the data on a USB drive, which is password-protected. I stored the USB drive at my home office.

In the context of ethical concerns, researchers, educators, and librarians play a vital role in upholding ethical principles and standards. Qualitative research has ethical questions and issues that must be addressed, and ethical reflexivity is a core feature of qualitative research practice (Greaney et al., 2012). The evaluation criteria for ethical qualitative research involve meaning coherence, explanation, clarity of sample selection, and member checking to verify the fair representation and confirmability of participant voices and feedback (Roth & von Unger, 2018).

Before this research project began, Walden Institutional Review Board approval (09-27-22-0723205) and Graduate Medical Education Institutional Review Board approval IRB # 22-03-013) were obtained. Institutional Review Boards (IRB) provide ethical oversight and protection through ethical reflection, transparency, participant control of data, and ongoing risk-benefit analysis (Grant & Osanloo, 2014). The implications of ethics have future repercussions for all who prepare and train future researchers.

Summary

To summarize, this case study identified a gap in practice with low publication rates from a Graduate Medical Education program in a local setting. The research

question was designed to identify the reasons for low publication rates, and it was analyzed through a qualitative case study lens. The results could provide the basis for policy formation that promotes every Graduate Medical Education Residency Program research mandate, which can inform future researchers, medical librarians, and educators to increase knowledge production and publication. This research positively impacts people who benefit from future medical research and scholarship, leading to innovative treatments, improved healthcare delivery, and positive social change.

This chapter reviewed the research design, and I gave my rationale for selecting it. I reviewed my role as a researcher and detailed how I worked to avoid personal bias and conflict of influence. I described the methodology in detail. I reviewed the procedures for recruitment, participation, and data collection. I assessed my data plan and explained my methods of ensuring the trustworthiness of the data and the ethical procedures I followed to ensure participant and data safety and anonymity. The study aimed to assess what is already known in Graduate Medical Education and fill gaps in practice to help GMERs understand how publication support systems work to create new scholarly journal article output. The study's findings can significantly impact social change at the local and national levels by identifying goals for future actions to improve Graduate Medical Education journal publication rates.

Chapter 4 reviewed the results of the generated data and my treatment and protection of the data.

Chapter 4: Results

This qualitative study investigated how GMERs are supported to publish at a rate that sets them up for professional success. The problem was that current practices used to support GMERs' publishing do not set them up for professional success. The first portion of this chapter presented an overview of the setting and demographic details of the Residents. The second section presented four themes and 28 subthemes generated from the data analysis. The chapter concluded with a summary of the findings. In this chapter, I reviewed the setting, data collection, data analysis, results, evidence of trustworthiness, and summary.

Setting

I conducted in-depth interviews with the 10 participants to understand their perceptions of scholarly publications as GMERs. The Residents were selected to represent various characteristics, including age, gender, relationship status, race, department, and program year. The interviews were conducted using MS Teams, which has a two-factor authentication process. The participants scheduled the interviews at their convenience and received an informed consent document beforehand. Some participants were in a private office at the hospital, while others were at home. No Residents reported any trauma or emotional distress during the interviews. Each interview lasted about 60 minutes and was semi-structured, which allowed participants to express their feelings or perceptions about scholarship. I did not observe any adverse organizational conditions that could have influenced the participants or their experiences during the study. Overall,

the interviews were conducted comfortably and professionally, allowing participants to freely express their thoughts, feelings, and perceptions.

Data Collection

The 10 GMERs were presented with one demographic survey and one survey instrument with 10 questions. Details regarding the captured data for each survey are listed in Table 1. All interviews were audio recorded. There were no variations in data collection from what was presented in Chapter 3. Resident transcripts were uploaded into NVIVO software, a qualitative software designed to organize, store, and analyze data (Dhakal, 2022). I utilized inductive line-by-line coding to generate keywords and codes.

Table 1

GMER Demographic Profiles

Code	Age	Gender	Relationship Status	Race	Graduate Medical Education Dept.	Program Year
Resident 1	25-34	M	S	W	Orthopaedic Surgery	5
Resident 2	35-44	M	D	W	Psychology	3
Resident 3	34	M	M	W	Orthopedic Surgery	5
Resident 4	28	M	D	A	Internal Medicine	2
Resident 5	33	F	M	W	General Surgery	4
Resident 6	25-34	M	S	W	Family Medicine	2
Resident 7	34	F	M	W	Internal Medicine	3
Resident 8	33	M	M	W	Family Medicine	3
Resident 9	35	M	M	W	Internal Medicine	3
Resident 10	37	M	M	W	Internal Medicine	3

Note. Relationship status codes are S for Single, D for Divorced, M for Married. Race status codes are W for White, A for Asian.

I reviewed and closely followed the six-step thematic analysis plan to guide my data collection (Braun & Clarke, 2022). I first became familiar with the data, which consisted of reading, re-reading, and noting any observations. Then, I generated codes by generating labels and terms to identify data features that relate to the research questions

guiding the study. I searched for themes using an interpretive process that connects ideas across individual codes and collates the data related to each theme. I then reviewed themes connected to the coded data and reflected on the relationships between themes, expanding and collapsing as necessary. I then defined and named the themes. This process entails writing a detailed analysis of each theme. This last step involved combining the themes and using rich excerpts to craft a coherent and persuasive data account. There were no discrepant cases; thus, they were not factored into any analysis.

Participants received an invitation to the project (Appendix C), and I contacted them through the departmental email roster of current GMERs. This qualitative case study examined data from various sources to discuss emerging themes and to answer the research question. The various sources of data collected included examining the Residents from the audio recordings of the face-to-face interviews with participants and reading through an analysis of the documented observations from the face-to-face interviews and participant interactions. The data was triangulated and analyzed.

As previously mentioned, the six-step thematic analysis plan guided all data analysis (Braun & Clarke, 2022). I became well acquainted with all data through reading, re-reading, and noting any observations or unusual circumstances. The second task was coding, which produced labels and terms identifying specific data features linked to the study's research question. The third step including examining all data for themes. This step requires interpretative analysis as I sought themes that connected individual codes or concepts. I collated the data that related to each theme. The fourth step evaluated the themes. This stage required me to check each theme and ensure the alignment with the

coded data. Then, I made notes of any relationships between themes. I expanded and collapsed themes as necessary. The fifth step defined and provided an appropriate and descriptive name for each theme. This process entailed writing a complete analysis of each theme. The last step in the process was writing up the themes while combining themes. I gave rich, detailed excerpts, creating a coherent and persuasive data account. There were no unusual events when I collected data.

Qualitative research methods utilized in this case study included four distinct data sets compiled from a survey instrument, institutional archived records, a semistructured interview, field observations at an academic medical center library, and keyword analysis in biomedical databases. Using at least two data sets ensured the phenomenon could be explored from several levels, examined, and analyzed for trends or patterns (Hercegovac et al., 2020). Multi-data sets also offered the opportunity for improving validity through triangulation. Specifically, triangulation involves using multiple data collection methods, including interviews, observations, and field notes (Sawatsky et al., 2017).

Data Analysis

The coding process is a critical step in qualitative analysis (Khastar, 2009). As the researcher, I systematically organized and categorized data and looked to identify patterns or insights. The coding process was initiated by reading and re-reading the data to identify patterns or repeated concepts. I continued refining my categories or codes by breaking the data into smaller fragments. I then looked for connections that would help me understand the data more fully. During this coding process, I used the research question to gather GMERs' perspectives for study and scrutiny. I finally identified

significant concepts with the idea of developing a comprehensive narrative that captured the essence of the research. Table 2 demonstrates the themes and subthemes generated from the data from the 10 participants. I did not observe any discrepant cases. These key findings are reviewed in detail in subsequent sections.

Table 2

Themes and Subthemes

Themes	Number of responses
Theme 1: Support systems	587
Subtheme 1: Perception of challenges of the residency program	259
Subtheme 2: Overwhelmed	80
Subtheme 3: Academic writing competence	62
Subtheme 4: Academic writing workshops	60
Subtheme 5: Stressful experience	31
Subtheme 6: Library access	23
Subtheme 7: Fellowship after residency	20
Subtheme 8: Lack of knowledge of the research process	18
Subtheme 9: IRB challenges	10
Subtheme 10: Journal club	7
Subtheme 11: Conference perks	6
Subtheme 12: External institutional barrier	6
Theme 2: Family values and experiences that supported scholarship	264
Subtheme 1: Personal motivation	163
Subtheme 2: Value of higher education	62
Subtheme 3: Educational attainment of parent	24
Subtheme 4: Hard work in residency	9
Subtheme 5: Personal beliefs about scholarship	6
Theme 3: Scholarly writing skills	225
Subtheme 1: Time	110
Subtheme 2: Organization skills	96
Subtheme 3: Confusion about the research process	18
Subtheme 4: Scholarly writing competence	1
Theme 4: Expectations of scholarship production	205
Subtheme 1: Mentor	94
Subtheme 2: Helpful for career path	23
Subtheme 3: Requirement	20
Subtheme 4: Not required	14
Subtheme 5: Peer or collaborative support	11
Subtheme 6: Instructional support	1

Results

This qualitative study was designed to explore how GMERs are supported to publish at a rate that sets them up for professional success. The problem is that current practices used to support GMERs' publishing do not set them up for professional success. Table 2 lists the themes and subthemes that were generated from the data. The following section describe, in detail, key findings of the themes and subthemes. All identifying characteristics have been masked.

Theme 1: Support System

The support systems theme was the most commented-upon theme. This theme concerns the perceptions of the support GMERs receive from their families, friends, peers, and institutions during their residency. Theme one was comprised of thirteen subthemes: perception of challenges, being overwhelmed, academic writing competence, academic writing workshops, stressful, library, fellowship, internal barriers, lack of knowledge of the research process, IRB challenges, journal club, conference rewards, and external institutional barriers.

Subtheme 1: Perception of Challenges of the Residency Program

The most frequently discussed subtheme was Residents' perceptions of the challenges they faced during residency. The Residents noted that they knew that scholarship production would be a challenge, but one that they could learn to perform with guidance. They would appreciate workshops or training on the processes involved with scholarship creation.

Resident 1 commented that producing scholarship was a "long process," and he commented that having a "full-time staff member helping us write" would be beneficial. He also stated, "sometimes medical students are offered people to help…behind the scenes, kind of helping them write the paper." Resident 2 noted that because research production "seemed like pressure," support was essential. He also felt that "if somebody gave me the instruction," he would be more successful. Resident 2 noted that the research production needed was current: "I don't want it to write something that already people know." He also felt his research skills could be improved with support and guidance as he felt he was "not basically good on research."

Subtheme 2: Overwhelmed Perception

The second most expressed subtheme was the awareness of being overwhelmed. Residents stated they felt there was a lot to do in a short amount of time. Being overwhelmed was also described as managing deadlines and accomplishing multiple clinical and academic projects while maintaining a positive work and life balance. Resident 6 said

> I was like, staying up late every night for two or three weeks to get it done. I had to stay up for 5 to 6 hours every night, and projects could sometimes overlap. Because your brain is only so big, and it takes a lot of energy, and it takes a lot of commitment, a lot of like brain space.

Residents discussed that the amount of work they were required to do was burdensome within the allotted time. They recognized that scholarship is hard work and takes much time and effort. Expressions of confusion and stress manifested this

perception of being overwhelmed. For example, Resident 9 voiced his concern about the daunting scholarship process. He said, “Those projects tend to be big and time-consuming.”

Several Residents noted their exhaustion levels and spent off-duty time working on multiple large scholarship projects. They further expressed that scholarship processes were often not organized or manageable. Resident 8 stated, “I’ve had good experiences, but I do I do get confused. I think it’s sometimes like really frustrating as well.” Resident 1 also noted, “the scholarship process was confusing and hard for me to remember.” Being overwhelmed was also described as an ambiguous process with no clear project roles. Resident 10 concluded, “They don’t know what they want to do…a lot of clinical rotation … I am tired.”

Subtheme 3: Academic Writing Competence

Academic writing competence was a common issue; many Residents expressed no formal training or exposure to scientific writing. Most felt they had adequate skills to produce scholarship. Most skills were learned throughout college, and no specific classes or workshops prepared them for academic writing. For example, Resident 3 rated his competence level as three out of 10. Resident 3 noted that he was a “self-learner.” Another Resident stated, “I feel fairly competent.” And had no “formal training at all.” Many Residents admitted they were not specifically confident with the scholarship process but viewed it as necessary to complete their residencies. For example, Resident 8 noted that, “I don’t know the process very well.” Regardless of their personal perceptions

of their academic writings, all expressed the desire to succeed. Resident 6 concluded, “I just look up how to do it.”

Residents stated that although they felt untrained and anxious about the processes, they had the desire and willingness to learn. The willingness to work hard to build skills associated with scholarship was mentioned many times. Willingness was described as an internal motivator and guided process. For example, Resident 3 expressed, “I think even maybe a good idea would need to have a primer like as an intern where we have someone just talk to us about the process.”

Residents critically appraised their academic writing skills. All Residents expressed their feelings and opinions about their academic writing competencies. Some Residents felt more comfortable with their skills, while others had less confidence. No Resident felt they did not need to learn more about scholarship processes to improve production. For example, Resident 2 noted that “their perception was “not basically good on research, but I can do that, and I can learn.”

Subtheme 4: Academic Writing Workshops

There was a sense among Residents that there was no formal instruction on academic writing. It was discussed that academic writing workshops would be beneficial for scholarly writing. The proposed workshops were not defined in a rigid time format or schedule. For example, Resident 2 said having a “regular session” or perhaps “weekly then monthly” workshops would be sufficient. Resident 7 noted that academic writing “workshops would be a huge skill to offer.”

Academic writing workshops are practice sessions where Residents learn about writing issues such as grammar, formatting, and citation style formats. For example, Resident 9 stated that workshops would "strengthen aspects of our academic writing and make the research better." Residents discussed that practicing and reviewing academic writing would support improving their skills. Resident 6 said "prep like actually practicing" would improve their writing confidence and streamline knowledge production.

Subtheme 5: Stressful Process

Residents commented that the processes leading to scholarship production could be stressful. They commented that multiple approvals were often required to move scholarship forward and that the feedback often conflicted and led to publication time pressures. For example, Resident 1 stated stress with the peer review processes as he received "completely different recommendations on how to get the paper published." Conflicting feedback was viewed as stressful and was expressed as time pressure, so "we emailed the publishers asking for an extension." Resident 8 concurred, "Oh, totally yeah, it is way stressful."

Residents discussed coping methods and techniques they utilized during residency to manage stress. Resident 8 mentioned "surfing" as a form of stress reduction during the scholarship process. These coping mechanisms helped Residents maintain a positive work and life balance.

Subtheme 6: Library Access

The library was the sixth most common subtheme. Residents had positive associations with the library by creating scholarships. Residents noted that accessing peer-reviewed journal articles is key to creating new knowledge. A few Residents wished for bigger libraries. Resident 10 stated, "Oh my God, look what I can do with the library. Look what I can get to it from now. That makes it more academic." Resident 4 commented, "I wish our medical library were bigger." Resident 6 acknowledged he felt good about library resources being easy to access and stated, "We know that the resources are here." Due to this positive association with library collections and services, Residents felt better equipped to produce scholarship. Several Residents noted that increased orientation sessions would be helpful. For example, Resident 9 wished for a more robust library orientation and stated:

> Some sort of presentation that you give to the incoming Residents. Part of the orientation where they can go over that and, you know, rather than just being a stop on tour and a rest stop for us when we, you know, we need to get away from everything else.

Subtheme 7: Fellowship after residency

The next most popular subtheme relates to Fellowship opportunities. Medical fellowships are post-graduate training in specified areas of medicine. Fellowships are deemed desirable and favorable for career advancement (Kasabwala et al., 2014). Many Residents expressed the desire to get into a fellowship program. Resident 2, for example, noted, "I have decided to do fellowship…I want to do a fellowship." Residents believed

they could get into a fellowship program more easily if they demonstrated publishing as a Resident. Resident 3 stated, "that's usually a requirement for your fellowship here is that you produce one publication." Resident 10 had a similar opinion. He said, "it [publication] will help you if you want fellowship. It will help you if you are looking for a Ph.D. program research program if you want to be at an academic center."

Residents noted the importance of publication for fellowship opportunities and worked to produce scholarship for that reason. This subtheme connects to the subtheme of academic writing competence and the belief that publications and fellowships benefit career growth and paths.

Additional subthemes were mentioned less frequently, including lack of knowledge of the research process, IRB challenges, journal club, conference rewards, external institutional barriers, and dedicated study space. The findings indicate that the journal club, conference perks, and dedicated study space were positive in that they led to greater exposure to and sustained engagement with biomedical literature. In contrast, lack of knowledge of the research process, IRB challenges, and external institutional barriers were viewed as negative impairments to overall scholarship production processes.

Theme 2: Family Values and Experiences That Supported Scholarship Aspirations

Family values and experiences were the second most common theme. There were five subthemes in this category. The subthemes are motivation, the value of education, a parent's educational attainment, hard work, and personal beliefs. Residents expressed how their family of origin valued educational experiences and how these experiences

shaped their future academic output. Family of origin also shaped their opinions and attitudes about the higher education process.

Subtheme 1: Personal Motivation

Motivation to engage in scholarship was the most prevalent subtheme. It was mentioned as a critical factor by many Residents. Most Residents remarked on the desire or motivation to develop innovative ideas and conduct research to contribute to scholarship in their medical fields. For example, Resident 2 noted, "Research is a priority for me… and I want to do research… and I know that I have to do this". Another motivating factor mentioned by the Residents for doing research was the opportunity to attend conferences. For example, Resident 3 stated, "We can go to conferences, and conferences are paid for, which is a huge motivating factor."

Subtheme 2: Value of Higher Education

The second most remarked upon subtheme is the value of higher education. Many Residents noted that they grew up in families who valued and respected education. For example, Resident 8 stated that he was encouraged by his mother to "become as educated as possible… it was something important…. My mom really pushed all of us." Another Resident discussed the influence of his culture and the value his family ascribed to higher education. He stated that the more educated people are in his culture, the more respected they are.

Subtheme 3: Educational attainment of parent

Related to the second subtheme, the third most discussed subtheme was parents' educational attainment. According to most Residents, their parents received graduate

degrees in their fields of study. Nine Residents mentioned the educational attainment of their parents. For instance, Resident 8 stated, “Mom was a doctor.” Resident 9 revealed that her mother “went to Ivy League Yale College.” Resident 3 noted that his mother obtained her master’s in teaching. All Residents but one had college-educated parents. This Resident stated that their parents “were immigrants. They barely finished college” and “they were unable to pursue higher education.”

Subtheme 4: Hard work

Hard work was the third most commented-upon subtheme. Hard work was described as pressure or crunch time. Residents expressed their understanding that scholarship would be challenging work and it was an expected feature of the Residency experience. Residents discussed that they knew residency would be challenging but were ready to accept the challenge and persevere to finish the work. For example, Resident 1 commented, “And then just keep working hard. Yeah. It is like one of those things. It is like, OK, it will get done.” Similarly, Resident 10 stated, “This is the time to crunch, you know, this is the time to build the best you can.”

The least frequent subtheme to appear in this category is personal beliefs. Personal beliefs refer to the Resident’s perceptions of their abilities and motivations to successfully conduct scholarships. 6 Residents commented upon their ability to recognize what it takes to publish and overcome inaction. Resident 2 said I think anything in life starts with inertia. Additionally, Resident 1 commented on his beliefs about scholarship, “I think it is very important.” which drives him to achieve publishing success.

Theme 3: Scholarly Writing Skills That Support Academic Medical Writing

Scholarly writing skills refer to the Resident's perceptions of readiness to engage with and create scholarship. This process comprises four subthemes: time, organizational skills, lack of knowledge of the research process, and scholarly writing perception.

Subtheme 1: Time

Time was the most prevalent subtheme. Time was described as the perception of how much time it takes to perform research and the lack of time built into the day to accomplish it. Many Residents remarked on the desire for more time to develop innovative ideas and write scholarship. Most of the comments centered around needing more time in the day to create scholarship. For example, Resident 2 stated, "I did not have enough time to research on my own… we do not have any opportunity to research…I do not have time to do it." Some Residents created their own time for research, and some expressed dissatisfaction that insufficient time was built into the curriculum as a form of clinical rotation. A few Residents believed that the time to create scholarship could only be from their time, such as after hours and on weekends. For example, Resident 3 discussed that writing required much time outside collaborating with patients during the average day.

Some Residents need more built-in time to create scholarship. Several Residents expressed that research time is a valuable commodity that takes time to manage and organize well. Resident 3 also stated the need to organize his time to finish writing. He said, "I always made time for this. My weekend was separated by programming timing. You know time planning is the best way to succeed. You need to dedicate time to

scholarship. You must dedicate time to writing the paper, doing a little review, etc. You know it doesn't. Nothing comes for free."

Subtheme 2: Organizational Skills

Organizational skills were the second most frequent theme. Organizational skills refer to the ability Residents perceived was necessary to organize their scholarly writing successfully. Residents expressed this as a required component to produce scholarship. Residents stated they were aware of tools such as Grammarly, PowerPoint, Excel spreadsheets, Google Docs, and Endnote but needed help with using them to stay organized. The use of tools helped to consolidate thoughts and maintain organizational structure over journal abstracts and citations. Tools also helped prevent feeling overwhelmed and confused during the scholarship and research processes. For example, Resident 7 said,

> I did not know how to use Endnote or anything else like that. … I could have told you can use like AP formatting, but…. each journal has their own preference and how they want it … I didn't know any of that.

As another example, Resident 4 stated, "Medical literature right now is searching like keyword, and you look for it would be nice if there was a way, we can consolidate everything. But it is so difficult because so many of it is case reports in XY and Z, and it's hard for them to just consolidate." Similarly, Resident 8 stated, "Personally, I think it's hard. I've had good experiences, but I do I do get confused. I do not know the process very well." Although most expressed difficulties with tools, one Resident, Resident 10,

found using Grammarly was a very useful tool as English is his third language. He commented:

> Absolutely. I tend, you know, writing is you are trying to entertain, you are trying to deliver a message without boring the reader without even making them confused with long sentences. Remember how, like Grammarly helped me a lot and always that this sentence is too long. This sentence is Grammarly incorrect, so I believe as English is my third language, I believe that I can improve by.

The two least frequent subthemes in this category are lack of knowledge of the research process and scholarly writing competence perception. The subtheme's lack of knowledge refers to the Resident's perceptions of their abilities to conduct scholarship successfully. Residents' comments detailed their feelings of unpreparedness or not being experienced enough to navigate the scholarship processes. Scholarly writing competence perception was the least commented upon subtheme and expressed as fear or doubts Residents had about their individual scholarly writing competence skills.

Theme 3: Expectations for Residency

Theme four comprises six subthemes: mentorship, helpful for a career path, requirement, not requirements, peer or collaborative support, and institutional support. Residents believed institutional support would translate into increased scholarship production. Institutional support relates to the perceived support Residents would receive as they were enrolled in a Graduate Medical Education program. Many Residents commented upon the expectations that they wanted from their peers and the Graduate Medical Education program.

Subtheme 1: Mentor

All ten Residents expressed positive feelings about the Mentorship process, which was the most commented-upon subtheme. The mentoring process was remarked upon favorably. While there is no formal mentoring process, Residents find their mentors. Residents believed a mentorship process provides a framework to create a new idea and to discuss scholarship possibilities and pitfalls. Mentorship was described as a supportive person that could assist with questions and provide suggestions for scholarship production.

Resident 1 commented, "Research Support…push us along...we have people that help us with research…. keep on track... behind the scenes …kind of helping them author the paper. ... to hold us accountable." Resident 3 remarked that Residents **"**all have our mentors." and that the "mentorship program you know already kind of happens with a few attendings are a little bit more involved in the research part like to keep them motivated." Resident 7 echoed a similar comment, **"**to keep them motivated." Resident 10 commented on several aspects of mentors, "So, if you in light that this fire in them and like show them the road, I believe you will definitely have much more scholarly output." I need help … under guidance… would love that we can meet with a mentor." he says do this and do that, and he has limited ability."

Subtheme 2: Helpful for Career Path

This subtheme was the second highest frequency mentioned for theme four. All ten GMERs had references associated with this theme. Scholarship was described as a positive expression of help with career paths. However, all Residents did not share this.

Residents from Family Medicine needed to be made aware of scholarship expectations. At the same time, GMERs of other programs commented on their awareness of the correlation of scholarship to career advancement in academic medicine.

Resident 1 noted, “it is necessary for those people to continue publishing’. Resident 4 had similar notions and commented, “I’d say pretty important” and, “I think that everyone should be publishing.” Resident 8 had similar words, “Oh, it is essential…Yeah, it is it’s very, very, very important, yeah. Transcript 6 stated, “I think it’s very important.” Resident 10 noted, “In my field in my field, you know, scholarship is like, I think it is the cornerstone of medicine nowadays…. “it advances our field …It’s so important.”

Three other subthemes were mentioned less often. These subthemes were neither requirement nor peer or collaborative support nor institutional support. Confusion was noted if scholarly publishing was a requirement for their medical discipline. Most Residents believed it was a requirement. Residents had positive associations with their peer groups as collaborators. Other Residents noted they wanted more institutional support to help them produce scholarship.

Evidence of Trustworthiness

Trustworthiness is essential to case study research (Cope, 2014). Therefore, I employed several strategies to ensure the rigor and validity of my results. My methods included triangulation of data through documentation strategies, ensuring that my data collection and analysis were aligned with the research questions and objective. I presented my data collection, storage, and analysis processes with transparency.

Transparency in data collection includes clearly describing the methods the researcher used to gather data (Adler, 2022). Transparency also includes explaining the data sources, tools, techniques, and the rationale for selecting specific data collection methods. Transparency allows readers and other researchers to more fully understand how data was collected and utilized. I continuously challenged myself for reflexivity and self-awareness about potential biases and influences.

I utilized thick descriptions that were very detailed and provided as much information as possible to enable a deep understanding of the case. I reviewed the data for any discrepant data. I was willing to accept any discrepancies; however, none were apparent. I used contextualization to place the case study in a broader and more cultural context to aid readers with the relevance of the findings. I continued my data analysis until no more codes, themes, or subthemes emerged.

Summary

This chapter included a detailed depiction of the setting of this study. I described the details of the data gathering process which involved the number of participants, the method used for obtaining the interviews, and my usage of MS Teams to conduct, record and transcribe the interviews. The data analysis section explained how I coded, categorized, and identified themes. The results generated were thick and descriptive and were developed into emergent themes. I reviewed the themes to answer the research question of how GMERs can be supported to publish at a rate that sets them up for professional success. The data generated, collected, stored, and analyzed revealed multiple issues stifling scholarship production. The coded data generated 4 themes and 28

subthemes. These themes provided insight into the attitudes and perceptions of GMERs as they strived to produce scholarship.

Residents expressed different descriptors when discussing scholarship opportunities and challenges. Some spoke about challenges in terms of experiencing stress, feeling overwhelmed, and being confused, while others emphasized achievement. While reading the attitudes expressed by the Residents, it was disturbing to learn of the stress levels Residents reported.

Chapter 5 reviewed discussions, conclusions, and suggestions that arose from the data analysis and fulfilled the purpose of this study. The purpose of this qualitative case study was to explore the perceptions of GMERs about the challenges to produce scholarship. I included suggestions and inferences of these interpretations that can lead to positive social change through improving the abilities of GMERs to conduct and publish research and further improve knowledge through the continued exploration of the challenges of, and the needs for successfully producing scholarship.

Chapter 5: Discussion, Conclusions, and Recommendations

The principal research question was how GMERs could be supported to publish at a rate that sets them up for professional success. This research project was deliberately designed and conducted to address the problem that Residents publish at a rate that does not set them up for professional success. The interviews represented Residents' perceptions of their lived experiences and provided the basis for this research. This study answered the research question using a hermeneutic lens to interpret the phenomenon of the Residents' everyday lived experiences.

This study of 10 Residents enrolled in a Graduate Medical Education program was intended to expand the current literature about Residents' production of scholarship. An exhaustive literature review revealed no single barrier relevant to their successful production of scholarship. Rather, my findings demonstrated that GMERs perceive that they do not have adequate support systems, family values and experiences, scholarly writing skills, and expectations that can produce scholarship. The results of this study provided the latest information that may serve as a guide to future Residents, educators, and medical librarians who may be interested in developing a more profound knowledge of influences on research processes awareness, comprehension, and, ultimately, scholarship creation.

This study demonstrated the educational implications that can serve as a frame of reference and should be carefully considered when analyzing the relationships between students and conceptions of research work. At best, allowing GMERs to understand why they are conducting research would help them take charge of their research processes.

Additionally, with an improved comprehension of students' conceptions of the research processes, educational leaders and librarians can better place themselves in the students' position when needed and better understand their choices in their scholarly work.

This project is significant because enhanced understanding can lead to greater opportunities to produce new scholarship by Residents. Implications for medical libraries include offering regular classes or workshops on scholarship production. Programmatic implications for Graduate Medical Education departments include offering built-in time for conducting research and scholarship. Implications for the future development of scholarship include intervention strategies such as access to more content material and a more visible library presence to support research and engagement with literature classes. Medical libraries can increase their support and provide multiple engagement methods. Residents' engagement with the literature leads to increased knowledge production. My conclusions were based on the findings and recommend actions for further research and discussed the potential for positive social change at the organizational level, particularly in academic medical libraries.

Interpretation of the Findings

This study was motivated by Resident experiences of perceptions of challenges related to research and scholarship production. This section summarized the main themes that emerged from the study of interviews with 10 GMERs. This study incorporated five disciplines of medicine: Family Medicine, Internal Medicine, Surgery, Orthopedic Surgery, and Psychiatry Behavioral Health. The study findings confirm that Residents are passionate and motivated to produce scholarship despite numerous challenges, including

confusion about processes, lack of time, lack of organizational skills, and lack of knowledge of the scholarship processes. This study affirms Knowles's model with self-efficacy ranking as a high predictor for scholarship success (Bennett et al., 2012).

Although there has been research on Residents' perceptions of their careers, no unifying framework fully captures their perceptions. My findings offer the beginning of a framework to unite research on Residents' perceptions. Each theme is described in detail in the subsequent sections.

Theme 1: Support System

The support system theme and the 13 subthemes were the most commented upon and focused on Residents' perceptions and interactions with the scholarship process. Residents emphasized both the formal and informal support systems they used to succeed in their residencies. I learned that Residents expected scholarship production as part of their residency. Residents perceived scholarly production to entail hardships that were stressful and overwhelming at times. Residents maintained that they would do whatever it took to overcome barriers to produce scholarship. The Residents expressed their strong desire to overcome hardships with support from their peers and families and personal motivational strategies. The finding on Residents' perception of their needs is consistent with the literature that supports systems vary between Residents (Bammeke et al., 2015).

The concept of time was discussed among all Residents. The opportunity to dedicate time to research was viewed as positive. Access to a dedicated medical library with collections and services and the time needed to use these resources were strongly

associated with scholarship production. Consistent with the literature, library acumen and time management were perceived as necessities (Vaughan et al., 2013).

Theme 2: Family Values and Experiences

This theme and five subthemes related to the importance of family-of-origin experiences surrounding scholarship. This study is consistent with the literature that family or origin dynamics play a role in future scholarship production (Birnbaum et al., 2022). There are numerous examples where Residents commented upon parents and their positive views on education, which motivated Residents to navigate the problematic research processes and successfully publish scholarship. Scholarly writing skills are also improved due to motivation gained from early family exposure to education, as well as the importance placed on education by the family. This theme and the four associated subthemes confirmed the importance of having family support (Harrison et al., 2020).

Theme 3: Scholarly Writing Skills

This theme and five associated subthemes concerned Residents' perceptions of their writing skills. The component of time was mentioned repeatedly by Residents as a factor necessary for scholarship. This finding is consistent with the research on the benefits of protected research time (Williamson, 2017). Residents noted different perceptions of their scholarly writing skills, but all agreed that classes or workshops could improve their skills and benefit them. Learning about research, organization, and writing processes takes separate time from clinical activities. Building in protected research time was viewed as a benefit. Time was also defined as becoming more efficient as a scholar, thus saving wasted time with uncertain processes. Examples of time-saving

activities suggested by Residents were classes and workshops or programs that teach Residents components of the research process.

Protected research time gives medical Residents dedicated periods to focus on academic pursuits. It also allows them to delve into research projects, explore clinical questions, or contribute to advancing medical knowledge. This time allows Residents to develop research skills, critically analyze medical literature, and contribute to scientific publications.

Protected research time can also provide opportunities for Residents to collaborate with other researchers within their institution and beyond. They may participate in interdisciplinary research projects, collaborate with faculty members, or engage with researchers from different specialties. Such collaborations facilitate knowledge exchange, encourage innovative thinking, and broaden Residents' professional networks.

Protected research time allows Residents to work on research projects that have the potential for publication or presentation at scientific conferences. Residents can conduct comprehensive studies, analyze data, and disseminate their findings to the wider medical community by dedicating time to research (Zibrowski et al., 2008). Publication and research presentations contribute to Residents' professional development, help build their academic portfolios, and enhance their credibility within their field of study (Seaburg et al., 2016).

Engaging in research during protected time can also benefit Residents seeking career advancement or specialization in academic medicine. Active involvement in research demonstrates a commitment to scholarly pursuits and can be advantageous when

applying for fellowships, academic positions, or research-oriented residencies. Research experience also equips Residents with valuable skills highly regarded in academic and research-based healthcare settings.

It is worth noting that the availability and structure of protected research time may vary across different residency programs and institutions. However, providing dedicated time for Residents to engage in research activities can foster a culture of inquiry, support the development of future clinician-physicians, and contribute to advancing medical knowledge and patient care.

Theme 4: Expectations

This theme and six associated subthemes described Residents' perceptions of their expectations of scholarship production support. Participants confirmed the importance and expectations of working in a professional scholarly environment; however, not all Residents perceived that scholarship was necessary for their future success in academic medicine. For example, Family Medicine Residents did not know their residency required scholarship production.

Many Residents commented that a mentorship process would be viewed favorably and as an asset. Mentors were described as people with whom they could converse and be ago-to contact should questions arise regarding research or scholarship. This process is consistent with the literature showing that exposure to a research environment is conducive to scholarship production (Harrison et al., 2020).

Knowles Adult Learning Theory

Knowles ALT, also known as andragogy, is a framework that focuses on adult learners' unique characteristics and needs (Knowles et al., 2001). Knowles' theory can offer valuable insights when applied to GMERs engaging in scholarly activities and pursuing scholarship.

According to Knowles' theory, adult learners are motivated by internal factors and prefer to take responsibility for their learning (Knowles et al., 2001). GMERs engaging in scholarship often demonstrate self-directed learning by identifying their research interests, formulating research questions, and driving their research projects forward (Ricotta et al., 2022). They actively seek learning opportunities, engage in independent study, and set personal goals for their scholarly pursuits.

Knowles emphasized the importance of learning through experience (Machynska & Boiko, 2020). For GMERs, scholarship often involves engaging with clinical experiences and translating those experiences into research questions or projects. By reflecting on their clinical practice, Residents can identify gaps in knowledge, explore research opportunities, and generate research questions based on their firsthand experiences. Residents can also produce scholarship with input from studies or patient encounters as a foundation for their work.

Knowles proposed that adults learn best when they perceive a need to solve problems. GMERs involved in scholarship often encounter clinical or research-related challenges that drive their learning. Residents seek to address gaps in medical knowledge, improve patient outcomes, and strive to contribute to evidence-based practice. Engaging

in scholarly activities allows Residents to actively participate in problem-centered learning, identifying research questions, designing studies, analyzing data, and proposing solutions.

Knowles suggests that adult learners benefit from collaboration and sharing experiences with peers. GMERs often collaborate with colleagues, research mentors, and interdisciplinary teams to conduct research and disseminate findings. Collaborative learning allows Residents to engage in discussions, exchange ideas, receive feedback, and expand their understanding of the subject matter. Collaborative efforts can also lead to co-authorship, joint presentations, and shared learning experiences among Residents.

Knowles emphasized the importance of immediate application and relevance of learning to adult learners. In Graduate Medical Education scholarship, Residents strive to apply their research findings to real-world clinical practice, enhance patient care, and contribute to evidence-based medicine. Residents may focus on practical implications and seek ways to translate their scholarly work into clinical guidelines, protocols, or interventions that positively impact patient outcomes.

By considering the principles of Knowles Adult Learning Theory, Graduate Medical Education program directors and educators can create supportive environments that foster Residents' engagement in scholarship. Providing self-directed, experiential, problem-centered, and collaborative learning opportunities can enhance Residents' research skills, promote lifelong learning, and ultimately contribute to their professional growth as physician scholars.

The four themes identified in this study and Knowles' Theory are aligned as described in Chapter 2. The Knowles framework proves advantageous as andragogy is flexible to a system of elements adapted to the actual setting of a Graduate Medical Education Residency Department. Medical librarians can also demonstrate new roles based on andragogical principles in establishing and guiding scholarship behaviors, providing learners with opportunities to practice these new skills, roles, and behaviors (Watts, 2018). Through alignment with the concepts of andragogy, Resident scholarship needs are supported. An Andragogy-focused approach helps centralize Resident learning needs, leading to higher publication rates.

Kolb's Experiential Theory

All four of Kolb's theoretical assumptions were present in this study. First, a problem was built, and a research study was designed and implemented around the problem. Data was collected, and the results were closely analyzed for themes and subthemes. This data helped to gauge the Residents' perceptions of scholarship.

Kolb's four-stage learning theory focuses on learning by involvement. The four stages are concrete learning, reflective observation, abstract conceptualization, and active experimentation. This theory lends itself to developing and creating librarian-led workshops and classes to teach academic writing and scholarship skills. Regular immersion into the workshops and classes can improve and increase academic writing confidence and produce higher level scholarship production. Regular training gives Residents concrete experiences to consider and reflect (Fewster-Thuente & Batteson, 2018).

Medical Residents engage in various experiences during their training, such as direct patient care, clinical rotations, and procedural training. According to Kolb's theory, these experiences are the foundation for learning. Residents actively participate in patient care, encounter medical challenges, and engage in hands-on activities, providing tangible experiences to reflect upon and learn from (Poore et al., 2014).

After experiencing concrete situations, medical Residents engage in reflective observation. They reflect on their experiences, analyze what happened, and evaluate the outcomes. This reflection allows Residents to make sense of their experiences, identify patterns or themes, and extract critical understandings. Reflective observation enhances their perception of clinical scenarios, helps them recognize strengths and weaknesses, and promotes self-directed learning.

Through reflective observation, medical Residents develop abstract concepts and theories. They integrate their experiences with existing medical knowledge, clinical guidelines, and scientific literature to produce new scholarship. This stage involves critical thinking, synthesizing information, and developing conceptual frameworks. Residents often engage in discussions, attend lectures, or conduct literature reviews to enhance their conceptual understanding.

Medical Residents actively experiment by applying their conceptual knowledge to new situations and evaluating their hypotheses. They design treatment plans, participate in research projects, and implement evidence-based interventions. Active experimentation allows Residents to refine their clinical skills, explore alternative

approaches, and evaluate the effectiveness of their actions. Feedback and supervision from faculty and peers play a vital role in this stage.

Kolb's theory highlights learning as an ongoing cycle of concrete experiences, reflection, conceptualization, and active experimentation (Morris, 2020). Medical Residents continuously move through this cycle, engaging in new experiences, reflecting on them, integrating knowledge, and applying it in practice. This iterative process supports their professional development, enhances clinical reasoning, and facilitates lifelong learning.

Educators and residency program directors can incorporate Kolb's Experiential Theory into educational strategies to optimize Residents' learning experiences. Providing opportunities for direct patient care, facilitating reflective exercises, encouraging critical thinking and analysis, and promoting active engagement in research and quality improvement initiatives align with the principles of this theory. By embracing experiential learning, medical Residents can enhance their clinical skills, develop expertise, and become lifelong learners in their fields of medicine.

Through the experience, the adult learner learns to formulate basic abstract concepts and can make broad generalizations. Learners grow their understanding by assessing the implications of newly acquired knowledge in new scholarship situations. Reflective observations provide them with new experiences, and the learning cycle continues. Researchers have confirmed that learning outcomes are enhanced when applied to experiential learning (Burch et al., 2019).

Limitations of the Study

Limitations of this study included the need for more availability to all Resident disciplines typically encountered in Graduate Medical Education programs. Due to the small nature of a community hospital, only five disciplines of medicine were established: Family Medicine, Internal Medicine, General Surgery, Psychiatry, and Behavioral Health. A second limitation had to do with the number of participants. This study was limited to only 10 Residents due to the small size of the five programs. A third limitation concerned the number of interviews I conducted. Due to a lack of time in Residents' days, I could see each Resident only once, and each interview was limited to one hour.

A fourth limitation had to do with self-reporting bias. The study relied on self-reported data from Residents, which could be subject to bias, such as social desirability or recall bias. Moreover, there may have been a selection bias in the sample, where Residents more motivated or interested in scholarship were more likely to volunteer to participate in the study.

Recommendations

Based on the findings from the study, there are three recommendations for future research. First, more research is needed on a greater range of Graduate Medical Education programs and the number of Residents in each program. As noted earlier, this study examined only five programs. The problems can be varied, and comparative analysis would provide greater detail on Residents' needs. Second, more research is needed on how medical libraries can support Residents in producing scholarship. As shown in this research, Residents perceived a need for current resources. Medical

libraries are a significant source. Knowing more about medical libraries' needs allows Residents to produce greater scholarship. Finally, more research is needed on how Graduate Medical Education leadership can support Residents' motivations to publish, as these findings demonstrate (that leadership and mentors) are essential motivators. Understanding the types of leaders available and their ability to mentor Residents in their programs can help us transform them to meet Residents' needs better.

Implications

The implications of this project can be helpful to Residents in being better producers of scholarship. Knowing what they need and how to search for it makes them better scholars. At the organizational level, there are several implications for the Graduate Medical Education program. These implications include creating regularly scheduled classes, workshops, and programs on academic writing concepts, foundational library support, and scholarship processes. For example, a writing skills course could focus on academic tone, action verbs, and paragraph descriptions. Writing software such as Grammarly could be included.

Residents must be allocated time to practice and improve their academic writing confidence. Residents need protected time to build scholarship. They need this time to maintain appropriate stress levels and not feel overwhelmed with clinical rotations and duties. Residents need regular classes or workshops on how research is stored and accessed. Workshops are classes that can also build peer support among Residents as they strive to produce scholarship. Residents must build awareness of the peer review processes that create appropriate scholarship opportunities.

Establishing protected research time for Residents is another element to consider. Protected time means no clinical or rotational activities, only time for research and scholarship. Third, Graduate Medical Education programs could consider better integrating medical libraries into their curricula design. For example, didactic courses on utilizing medical libraries could be offered. Fourth, the findings strongly suggest that Graduate Medical Education departments allocate pockets of time to Residents that can be devoted to research—societal level implications. Producing Residents who produce better scholarship enhances the current understanding of medicine to advance global healthcare. Results from this research study may contribute to positive social change by revealing barriers to scholarship that prevent Residents from successfully creating new knowledge. Providing more support to Residents assists Residents with their scholarship attempts.

In conclusion, this study stove to promote positive social change by identifying barriers to making scholarship challenging for Residents. The hope is that more Residents can successfully create and publish scholarships to contribute to biomedical literature supporting the global community. Positive social change is achieved through the advancement of medicine. Published research moves medicine forward; more publications translate into improved patient outcomes worldwide. Increased scholarship translates to improved healthcare outcomes that can be realized globally.

Conclusion

There is still much to learn about publishing journal articles, and this case study helps assess what is already known in Graduate Medical Education. The goal of this

study was to fill a gap in understanding so that GMERs can better grasp how publication support systems function and create new scholarly articles.

By creating a roadmap for future scientific inquiry into the barriers GMERs face when trying to publish, this study enhances diversity among GMERs who eventually hold important academic leadership roles (Lovitts, 2008). This case study provides future researchers with an improved comprehension of Graduate Medical Education journal publication's circumstances and identifies goals for future actions to improve Graduate Medical Education journal publication rates. This study's findings can significantly impact social change at the local and national levels. The application of programmatic library-led workshops, programs, and classes will enhance scholarship.

Educators and librarians can be viewed as torchbearers for ethics principles and standards in a world of changing and contradictory values and increasing concern for personal information (Byrd et al., 2014). Researchers must ensure protection for research participants and function as a guide to develop well-informed data-driven theory. The significant ethical issues in research are evident in professional organizations' numerous codes of ethics, including the Medical Library Association and research ethics committees (Atlas, 2001). It is undisputed that qualitative research has many ethical questions and issues. Ethical reflexivity is a core feature of qualitative research practice, as ethics issues may arise in any research project phase (Roth & von Unger, 2018).

Ethical issues are complicated and involve multiple stakeholders. The hopefulness of the upward trend of qualitative researchers treating ethics as a code and a characteristic of the relationship between the researcher and the researched is established (Roth & von

Unger, 2018). Evaluation criteria, noted by (Anderson, 2017) for ethical qualitative research are listed as follows:

- Meaning coherence involves thoughtful identification and application of the choices and research design strategies.
- Explanation and clarity of sample selection, location, contextual settings, recruitment, and selection of participants.
- Member checking to verify the fair representation and confirmability of participant voices and feedback.

To effect change, it is essential to involve various stakeholders utilizing the research findings to create and enhance Graduate Medical Education programs. Stakeholders should include Graduate Medical Education leadership, faculty, and medical librarians. Through the education of Graduate Medical Education leadership and librarians, scholarship can be viewed from the Residents' perspective. If they are made aware of the barriers that Residents perceive, then Graduate Medical Education leadership can work to structure didactics, classes, and programs to mitigate barriers.

The study participants presented themselves as competent, motivated, and resourceful people who spoke positively of their experiences within graduate medical education. Residents expressed joy with their roles as Residents as they progressed toward becoming physicians. Library intervention can also engender confidence in the process, and some stress and exhaustion can be mitigated. As facilitators, the educator or librarian can model new roles in guiding behaviors and provide learners opportunities to practice these new skills, roles, and behaviors (Watts, 2018).

This researcher admired all the participants' achievements and progress in their profession. Residents work long hours for months in a variety of less-than-ideal settings. Residents learn to collaborate with actual, real people as patients. Through sharing their stories, the participants have functioned as bellwethers for upcoming generations of Residents. It was exciting to hear and capture their words and to give voice to their Resident scholarship experiences. It was an honor to acknowledge their contributions to the Graduate Medical Education legacy of their journey to become physicians. Their efforts may help those who follow reach their personal and career goals. Research beyond the scope of the small number of Residents involved here might be required.

There needs to be an alteration to the curricular demands of Residents. This change would follow a series of classes, workshops, or programs for the Graduate Medical Education faculty and library. In general, workshops are recognized in medical education as an approach to learning, and students have voiced a preference for learning in these environments instead of didactic lectures (National Academies of Sciences, 2018). The relevancy of workshops in the context of Knowles model and Kolb's Experiential Learning Theory and medical education is described as a successful method of teaching (Belay et al., 2019). This study evaluated the importance of workshops regarding how educational leaders can engage with researchers.

Subsequent steps are to implement the training and ensure completion. The training initiative could be promoted to the Medical Library Association in the hopes of identifying and removing similar barriers faced by Residents across the United States.

Libraries can intervene and expand their role as educators. This process would strengthen libraries' value by aiding the creation of new knowledge. The potential outcome is that Residents and educators view libraries as partners in scholarship creation. All scholarship starts with the literature search and start with what is already known in literature. Remedial work can be performed before Residents are accepted into Graduate Medical Education programs, ensuring that most barriers noted are mitigated ahead of time. With an improved comprehension of barriers, more support can be added for Residents before they enter their residencies.

The ownership of scholarship production can be viewed through the prism of engagement of medical literature accessible through medical libraries. The results of this study indicated that Residents are challenged continuously as they strive to participate in research functions and are motivated to publish successfully. Graduate Medical Education departments should allocate more time to research, and the many processes involved with scholarship production. Protected research time also provides opportunities to mitigate stress and exhaustion to acceptable levels. Until then, many opportunities remain for scholarship production among Residents.

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Appendix A: Interview Guide

Concept 1: Values Attached to Scholarship

Category 1. Inherited values from the family

Question 1) How does your family value learning and scholarship?

Question 2) Do any members of your family of origin work in Medicine or Higher Education?

Probing question: How is this person supportive of you in the area of medical scholarship?

Question 3) Is there someone in your family who serves as a role model for you in the area of learning and scholarship?

Probing question: Has this person encouraged or inspired you to publish?

Category 2. Personal beliefs

Question 1) In your field, how important is continued scholarly publishing?

Question 2) Do you feel competent or confident about publishing scholarly writings?

Probing question: Why or why not?

Question 3) Do you believe that you have enough time for writing and publish scholarly works?

Question 4) Do you think it is worth to publish scholarly works for your career?

Concept 2: Scholarly Writing Skills

Category 1. English Writing Skills

Question 1) Have you written reports or scholarly publications in English?

Question 2) Do you want to improve your writing skills in English?

Probing question: How have you (or would) gone about finding resources to help you improve?

Category 2. Scholarly Writing Competence

Question 1) How do you feel about the peer-review process for scholarly publishing?

Probing questions: Do you understand the process? Are you aware of publication requirements such as citations and formatting? Is it too daunting to try?

Question 2) Do you experience any stress or anxiety when you are expected to publish scholarly writings?

Probing question: How do you cope with this stress?

Concept 3: Support System

Category 1. Institutional or Leadership Support

Question 1) Can you describe the research support you received during your Graduate Medical Education Orientation?

Probing question: Did that orientation help you? Were you informed about the supportive resources? Was the direction of research writing and publications encouraged?

Category 2. Library Resources

Question 1) Can you describe the library support you received during your Graduate Medical Education Orientation?

Question 2) Were you introduced to library collections and services to support your future research scholarship?

Category 3. Peer or Collaborative Support

Question 1) Have you worked on a collaborative publishing project with someone (like an academic librarian or co-worker)?

Probing question: Was that a good experience? Has it helped your writing and publication skills?

Question 2) Do you want to find collaborators to write and publish? Where do you know to find these peers?

Concept 4: Expectations

Category 1. Institutional Support

Question 1) How do you expect the institution to support your future research and publishing?

Question 2) How can Graduate Medical Education Orientation be improved in the future to encourage research and scholarship?

Question 3) What barriers should be removed at the top leadership level?

Probing question: What do you expect about having a mentorship program?

Category 2. Library Resources

Question 1) How can Graduate Medical Education Orientation be improved in the future to encourage the use of library resources?

Category 3: Peer Support

Question 1) Can you foresee more collaborations among colleagues in the future? Why or why

Appendix B: Invitation Letter to Participate

Dear Participant,

I am a doctoral candidate in the Adult Education and Higher Learning program at Walden University. I want to invite you to participate in my dissertation research titled "Barriers to Publication Among GMERs: A Qualitative Case Study." This case study aimed to investigate how Graduate Medical Education Residents may be supported to publish at a rate that sets them up for professional success at a Graduate Medical Education department. The problem is that Graduate Medical Education Residents publish at a rate that does not set them up for professional success. The goal of this study is to allow administrators and educational leaders to better understand the most important attributes of scholarly output production among Graduate Medical Education Residents.

I would like to gather information through in-person interviews which I expect will take 1 ½ to 2 hours. A follow-up interview may be needed depending on the research's needs. The interview(s) was recorded and transcribed. The transcript was presented to you for verification of accuracy. Your information was kept secure and confidential. Should the study be published, your name will not be used or linked to the study. Please know there are no risks associated with your participation and your participation is strictly voluntary. You may withdraw from the study without issue at any time if you choose. Your participation is voluntary.

Please let me know if you would like to participate so we can arrange a mutually convenient time for the interview. Otherwise, feel free to contact me with any questions or concerns you might have about this research. Thank you in advance.

Sincerely,

Janet L Hobbs

Phone: XXXXXXX

Email: XXXXXXX

Appendix C: Verification of Interview Letter

Dear Participant,

Thank you for participating in my research study. I have finished transcribing your interview. I would appreciate you taking time to review the attached transcript to ensure it is an accurate representation of your interview. Any personal identifiers are for this review only and were removed after receiving your feedback.

The primary reason for sharing this with you is to confirm that the transcript is an actual representation of the information you shared. Please note any errors or any information you would like removed. In addition, if there is information you would like to include, please feel free to add it. All additions, deletions and corrections were made prior to data analysis. Please make your changes and return it to me within 2 weeks either by email at XXXXXXXX or by mail to, XXXXXXXXX.

Again, thank you for your participation and assistance.

Sincerely,

Janet L Hobbs

Appendix D: Survey Demographics Question

1. What is your age?
2. What is your biological sex?
3. What is your relationship status?
4. What is your Graduate Medical Education program?
5. What year are you?

Appendix E: Observation Guide

Graduate Medical Education Resident 1	The interaction was professional, and he only answered questions I had initiated. He was seated comfortably at a desk in an individual office. He was soft-spoken, well-groomed, and very affable. He smiled and nodded frequently. I took field notes in a notebook. There were no interruptions. The participant was in a jovial mood and dressed casually. We talked about the recent rain in the area. He was logged in to MS Teams from campus. This resident was born in the United States, and English is his native language. His family was elated when he decided to pursue medicine. His motivation is to be the best OS he can be.
Graduate Medical Education Resident 2	The dynamic of the interactions was professional. This resident spoke freely without my question prompts. He was in a private office. He talked at length about his home country and research experiences. He noted that English was not his first language. He was appropriately dressed and very cordial. I took field notes in a notebook. There was one work interruption. He was logged in from an unknown location. This resident is of Middle Eastern heritage, and English is not his native language. This resident is divorced and discussed his lengthy career in medicine and as a research assistant. He has attained his Medical Degree and has a Master of Public Health Degree. This resident is enthusiastic about helping patients and volunteers with homeless outreach.
Graduate Medical Education Resident 3	This resident was familiar with this interview and was at ease during the session. He was in an individual office space. He spoke at length about his parents and their experiences as educators. He was free flowing with his thoughts. His demeanor was that of a capable resident. His comments were good-natured.
Graduate Medical Education Resident 4	This resident was interviewed during his lunch period. He was on campus in a room with other residents who were also lunching. He had headphones on to give privacy and to block out ambient noise. He discussed his motivations, which included strong parental encouragement to work hard. His parents were immigrants and reiterated that higher education was valued. He said he feels confident and is pushing out much work and feels good about that.
Graduate Medical Education Resident 5	This was one of 2 female residents. She was working in the Emergency Department and was delayed a bit. The interview was informal, as she was in a single office within the Emergency Department. She had an easy interview style and presented herself as capable and caring.
Graduate Medical Education Resident 6	This resident met in a private office and was relaxed and had a relaxed, conversational tone. He expressed confidence that he could figure out most situations. He expressed that producing scholarship while engaging in clinical activities was challenging.
Graduate Medical Education Resident 7	This was the second of the female residents. She came from a Nursing background, distinguishing her from the other 9 residents. She talked in her private office. She talked about her mentors. She described her attendings as lacking formal scholarship preparations. She noted minimal guidance, which proved challenging.

Graduate Medical Education Resident 8	Resident 8 was a professional and amiable resident who chatted from a private office. He viewed scholarship as essential to his growth as a physician. He was well-groomed and conversational. He expressed his family connections with medicine in his small town, which motivated him to pursue medicine.
Graduate Medical Education Resident 9	This resident spoke with me from his home office. He expressed that no one in his family was involved with medicine. He spoke about consciously taking the community medicine route and having experience as a Physician Assistant at a big institution.
Graduate Medical Education Resident 10	This resident interview was conducted in a private office in his home state of Washington. He is expressive and enthusiastic about medicine and the role he fulfills. This resident has published widely and believes he must publish.

Appendix F: Resident Profile

GENDER	M	Male
	F	Female
Relationship Status	S	Single
	D	Divorced
	M	Married
Race	W	White
	A	Asian