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Evaluation of a College of Medicine Peer-Mentoring Program

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COLLEGE OF EDUCATION

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Myra Haney Singleton

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2016

Abstract

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BS, University of South Carolina, 1993

Doctoral Study Submitted in Partial Fulfillment

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Abstract

Peer-mentoring experiences in higher education have been largely effective largely effective, however institutions implement them differently. The focus of this program evaluation was a peer-mentoring program at a medical school in the southeastern region of the United States, which had not previously been evaluated. Guided by Kolb's experiential learning theory, the purpose of the evaluation in this study was to examine whether the peer-mentoring experience was perceived as helpful to new students and how students thought the program could be improved. The sequential mixed-method design consisted of a survey of 179 students and interviews of 8 students. A thematic analysis of qualitative data was completed using a constant comparative approach. The qualitative data revealed that students perceived the program as having had a positive effect on their confidence in succeeding in school. They felt more committed to completing school, were more likely to use resources, and reported that peer-mentoring positively affected their learning. The findings also provided recommendations for program refinement related to the selection process, increased opportunities for individual mentoring, systematic documentation for study strategies, and additional group activities. These recommendations were included in the evaluation report. Evaluation results have important implications for positive social change at the local college of medicine that include peer support to ensure retention, facilitated discussion on coping strategies and sources of support, and academic success for students.

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Dedication

This doctoral study is dedicated to my husband, Wayne, my mother, Katherleen Haney, and my sisters and brothers who allowed me time and space to complete this work while making many sacrifices beyond measure. I could not have reached this goal without their support and dedication. To my doctoral committee, Dr. Wendy Edson, chair; and Dr. Elizabeth Bruch, thank you for your engaged guidance and support. To my mentors, Dr. Deborah Deas, Dr. Michael de Arellano, Dr. Jennie Ariail, and Ms. Michele Friesinger, thank you as you have guided me and inspired me to complete this journey when times were difficult. It is my hope that I can inspire others as much as you have inspired me.

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Section 1: The Problem

Introduction

In 2006, the administration of the college of medicine of a southeastern academic health sciences university in the United States identified multiple transitional challenges that first-year medical students faced. The medical school curriculum is rigorous with a demanding time commitment. Some students had difficulty adjusting to a new academic curriculum, blending different study strategies, and adapting to a new learning environment. Some had expressed concerns about anxiety and stress because they did not believe that they had sufficient support during the first-year experience and reported that they were not prepared for the challenge. The college administrators noted that many students isolated themselves until personal or academic problems were reported by faculty to the office of the dean (Associate Dean for Students, April 30, 2006). An informal peer-mentoring program had been in existence at the institution since 1996. Student leaders managed the program with relatively limited administrative oversight by the dean's office. Upon a review of multiple cases of student withdrawals, the college of medicine academic leaders determined that a formal peer-support program may help address various transitional, personal, and academic difficulties associated with Year 1. Student leaders submitted a recommendation to revise the existing program, and the associate dean for students approved it.

In Section 1, I define and detail the problem that was the focus of this project study, and I provide evidence of the problem on the local and professional levels. I also define key terms, specify the significance of this research, and present the guiding research questions.

The literature review includes the theoretical framework that guided this research, as well as current research on mentoring. I end Section 1 with potential implications of the findings and a summary of key points.

Definition of the Problem

Upon a review of multiple cases of student withdrawals, the college of medicine dean's office determined that a formal, well-designed peer-support program could help address various transitions, as well as personal and academic difficulties associated with Year 1. Taylor, Faghri, Aggarwal, Zeller, and Reis (2013) noted that medical schools with formal peer-mentoring experiences have documented positive outcomes as evidenced by students' exam performance, national board exam scores, improved communication, and procedural skills. Maher et al. (2013) suggested that the reasons that students leave school were multifactorial and identified academic difficulty, social isolation, depression and anxiety, and adjustment challenges as common contributing factors that affect student attrition. Andrews and Clark (2011) indicated that peer-support programs can validate the commitment of an institution to student engagement and learning experiences, and they can demonstrate proactive attention to issues related to student transition. Kram (1983) asserted that peer-mentoring is a valuable relationship that affords opportunities for mutuality and a sense of equality, and it lasts for an established duration of time (as cited in Thomas, 2012). The relationship is often reciprocal because those who were mentored often desire to serve as mentors to others (Mullen, Fish, & Hutinger, 2010).

Peer-mentoring may be structured in a formal or informal format and often results in the establishment of long-term relationships (Lopez, Johnson, & Black, 2010) because

peer-mentoring fosters a collaborative experience from which students learn and grow (Hryciw, Tangalakis, Supple, & Best, 2013). Thomas (2012) noted that mentoring could be used to address factors that influence students' decision to leave school, such as feeling isolated and academic difficulties. For decades, educational research has confirmed the positive effect that peer-mentoring has had on professional development and academic success through structured mentoring programs (Kenedy & Skipper, 2012). The structure of mentoring programs may vary by institution, but a common goal of programs is to help students succeed by establishing positive exchanges to help them manage challenges associated with school (Taylor et al., 2013). Peer-mentoring has numerous institutional benefits for universities because they serve as platforms for new students to learn from experienced students and promote student adjustment and satisfaction during academic and social transition to school (Colvin & Ashman, 2010; Hryciw et al., 2013; Kenedy & Skipper, 2012; Taylor et al., 2013).

In 2007, the college of medicine peer-mentoring program (COM Team) was restructured with central oversight provided by the dean's office. The manager for student activities was designated to serve as the program coordinator and became responsible for the administrative planning and implementation of activities and events. To foster an orderly structure and to enhance communication, 20 small groups were developed and mentoring assignments were designed to include second-year students as peer mentors and faculty mentors. During the preclinical and clinical years, the small groups are used for team-based and small group learning activities that augment large lectures.

The purpose of the COM Team mentoring experience is to help students engage in their learning environment through peer-mentoring, which is designed to mediate support for optimal academic outcomes. Advanced students are often used as peer mentors providing guidance and support to alleviate transitional difficulties (Brennan, McGrady, Lynch, & Whearty, 2010; Fullick, Smith-Jentsch, Yarbrough & Scielzo, 2012; Kenedy & Skipper, 2012; LeBlanc, McConnell, & Monteiro, 2014; Taylor et al., 2013). The program is designed for second-year students to serve as mentors to first-year students. Eighty second-year students are selected annually and are known as COM Team Leaders. Students who served as mentors before medical school and students who want to help their peers have an interest in serving and apply to become mentors.

The reciprocal approach supports the recruitment process. Establishing rapport in peer-mentoring can be difficult as new relationships must be developed with new students and mentors, but after the initial meetings participants tend to develop cohesiveness in groups, members are often able to analyze ideas and demonstrate their knowledge and the result is experiential learning (Yarbrough & Scielzo, 2012). Assisting mentors in establishing rapport is achieved through training COM Team Leaders about strategies for facilitating small group discussion, helping them understand the purpose of campus support services, and encouraging timely access to these resources with information about when and how to refer students to support services.

The COM Team Leaders also implement social support program and initiatives, which begin before matriculation, to foster a sense of belonging through collaborative communication, involvement, and engagement. The peer-mentoring experience is also

designed to foster camaraderie and collaborative learning among new medical students. Each new student of the College of Medicine is assigned to a COM Team group, for peer mentoring, consisting of nine or 10 students. These groups serve as support groups during orientation activities, and members of the group work as a team in the Fundamentals of Patient Care (FPC) course and other team-based learning activities throughout medical school. This mentoring experience affords first-year students an opportunity to meet their assigned small group members on the first day of orientation.

Knowles, Holton, and Swanson (2014) indicated that experience may be transferred to the mentoring process because adult mentors use processing and transforming to formulate concepts based on such theories to make decisions and resolve problems. The COM Team Leaders are expected to provide advice and guidance regarding transitioning to a new city, study skills, test-taking skills, and time management strategies, and they offer general insight to help improve the first-year experience of medical school and they must complete mandatory training. The COM Team Leaders initiate contact with new students during the summer before matriculation to offer perspectives on transitioning to medical school. Ongoing discussions about the city, housing options, and strategies of managing the academic demands of school are discussed with students. Students are also informed about campus resources that are designed to ensure academic and personal success.

In addition to the COM Team Leaders, two clinical faculty preceptors participate in the COM Team program as faculty mentors and serve as facilitators for the FPC course. The FPC course prepares students for patient care by teaching techniques for medical interviewing, developing oral and written presentation skills, and providing students with

early and meaningful patient contact as well as other relevant issues related to the practice of medicine. Students are required to participate in small group discussions and lectures, and they conduct standardized patient interviews and self-directed learning experiences. FPC faculty mentors are expected to build rapport with students, facilitate guided FPC sessions, and share perspectives on life as a physician. During small group discussion of FPC, group leaders facilitate learning and ensure educational objectives are met.

Patient care can be intimidating to first-year medical students. The framework of the adult learning theory (Kaufman, 2003) supports the method of instruction for the FPC course as two preceptors are assigned to FPC groups. One of the preceptors is a physician who guides and mentors students through the clinical components of the course. The other preceptor is a seasoned health care provider such as a psychologist, social worker, or nurse practitioner. Both work in tandem to establish effective learning climates by encouraging dialogue during sessions. The preceptors facilitate physical diagnosis exercises for disease diagnoses and the development of a treatment plan, and they guide students though the medical interview process. Kaufman (2003) defined the seven adult learning theory principles as (a) effective learning climates, (b) relevant methods and curricular content, (c) needs of learners, (d) encouragement of learners to formulate learning objectives, (e) encouragement of resources and strategies for learners, (f) support of learners, and (g) involvement of learners in evaluation processes. These seven principles of adult learning theory are evident in the construct of the FPC course. In medical school, students are required to learn by doing and the FPC course allows for physical, intellectual, and

emotional engagement because learning is most effective when students are engaged, responsive, and reflective (Knowles et al., 2014).

The COM Team program has never had a formal assessment to identify opportunities for improvement or to confirm or negate its value for the first-year experience. With increased fiscal oversight, senior administrators often require data to determine the worth of a program and use the documentation to identify recommendations to enhance the existing experience. A program evaluation for the mentoring program was determined to be necessary as the program receives funding from the college of medicine for all operating expenses.

Rationale

Evidence of the Problem at the Local Level

The lack of success in the first-year experience affects academic performance, retention, and graduation rates for the institution (Kenedy & Skipper, 2012; Taylor et al., 2013). Some students who struggle because of transitional difficulties often fail and are required to repeat the first year of school. Maher et al. (2013) noted that students who take a leave of absence for any reason are at a higher risk for not completing medical school and institutions are affected by such trends because students who are required to remain enrolled for an additional semester contribute to the institutional indebtedness rate. The Association for American Medical Colleges (AAMC) and the Liaison Commission on Medical Education (LCME), the accreditation commission of the U.S. and Canadian medical schools, closely monitor the institutional attrition and indebtedness rates. With increased fiscal oversight due to recent budget cuts, senior administrators require data to

determine the worth of a program and identify recommendations for refinement. A program evaluation to document the strengths and contributions of this mentoring program is needed because the program receives financial support from the college of medicine for operating expenses. An evaluation of the program is essential because assessment guides improvement of practice and can lead to program refinement (Creswell, 2013; Spaulding, 2014). The evaluation report for this study presented an analysis of the perceptions of mentoring as related to satisfaction with programming efforts and considerations about the students' transition into the first year of medical school.

Evidence of the Problem in Professional Literature

Critical assessments of formal mentoring programs are needed because mentoring often takes place informally (Bean, Lucas, & Hyers, 2014; Collings, Swanson, & Watkins, 2014) and more data is needed to conclude the effectiveness of mentoring programs in relation to specific behaviors performed by mentors (Shollen, Bland, Center, Finstad, & Taylor, 2014). Straus, Johnson, Marquez, and Feldman (2013) also found that successful mentoring was essential to professional success and career satisfaction. Guided by a grounded theory approach, in a qualitative research study by Straus et al. (2013) themes related to respect, reciprocity, clarity of expectations, and personal engagement emerged as essential elements for effective mentoring relationships. Communication deficits, lack of engagement, inexperienced mentors, competition, and interpersonal conflicts contributed to ineffective mentoring relationships (Straus et al., 2013). While some scholars have identified benefits of mentoring few have investigated the characteristics of effective and failed mentoring relationships (Straus et al., 2013; Tsen et al., 2012).

Many exemplary mentoring programs and various private and public institutions exist in the United States (Shollen et al., 2014). Some were formal and informal mentoring experiences and were geared toward gender and ethnic equity, and multiple findings confirmed the positive effect that mentoring has on retention rates, individual professional advancement, career satisfaction, and promotion rates (Bean et al., 2014; Leidenfrost et al., 2011; Shollen et al., 2014). Career planning and acquisition of new skill sets were commonly identified as benefits of mentoring. Scheduling conflicts and time constraints were challenges noted in maintaining meaningful mentoring relationships.

The lack of assessment stifles program development because such findings can be used to determine areas for improvement or to assess if the program is meeting its objectives (Hall & Jaugietis, 2011). Research scholars consistently recommended critical assessments and evaluations of mentoring programs (Bean et al., 2014; Collings et al., 2014). Korver and Tillema (2014) concluded that programs should focus on assessment for learning how to improve programs based on recommendations from student participants. The lack of time, structure, training, and interpersonal challenges were common problems identified in mentoring experiences (Stenfors-Hayes, Hult, & Dahlgren, 2011; Straus et al., 2013). Tsen et al. (2012) assessed a faculty mentoring program that was created to enhance the mentoring skills and to engage experienced faculty mentors in learning how to develop their mentoring skills through a didactic course. Engagement, a communal collaborative among mentors, fostering the professional development of mentors, and structured training opportunities for mentors were noted benefits for institutions because they provided ways for mentors to refresh their skills (Leidenfrost et al., 2011). Tsen et al. confirmed that

mentoring is an essential component in academic and professional success and more structured programs are needed to help mentors develop skills.

Hall and Jaugietis (2011) also asserted that there is a need for comprehensive research to measure the effectiveness of mentoring programs and such evaluations should be used to improve programs and determine their effect, because peer-mentoring is evolving and becoming an integral component in enhancing the first-year experience. A sense of belonging is critical to improve student success and to ensure retention (Thomas, 2012). Mentoring helps students adjust to new environments and implementation of these programs should be informed by both theoretical analyses and empirical evidence (Hall & Jaugietis, 2011). Further recommendations for mentoring programs were to include structured advising experiences, a thorough selection process, and formal training of mentors (Hall & Jaugietis, 2011; Leidenfrost et al., 2011).

Goals and objectives of the mentoring program. The goals of the COM Team mentoring program are to provide general guidance and support to first-year medical students, promote their personal and professional development, and improve academic performance of first-year medical students to enhance retention (student leader, personal communication, April 30, 2007).

A committee of student leaders who initiated the implementation of the program developed the following program objectives:

- Provide information on how to access services and individuals who may be vital to their success in the first-year experience.

- Provide general advising regarding coping strategies and managing transitional concerns that will facilitate academic and personal growth.
- Establish rapport with new students and foster dialogue about academic goals.
- Increase student awareness of the necessity of emotional health, wellness, and physical fitness for medical school success.

The program has never had a formal assessment to confirm or negate its value for the first-year experience and to identify opportunities for improvement. I conducted a program evaluation, using summative data to assess the peer-mentoring program to investigate the effectiveness of the program for students. A program evaluation is useful to conceptualize the intent and design of the program, examine and improve program operation, clarify program accountability, measure the overall effect of the program, and identify recommendations for refinement (Polland, 1989; Spaulding, 2014).

In this study, I addressed the need for an evaluation of a peer-mentoring program at a medical school in the southeastern United States. The local problem was the lack of an evaluation of the mentoring program and the purpose of the study was to evaluate practices of a mentoring program in a local setting and develop recommendations to improve the program. A mixed-method study allowed students to provide their perceptions, present recommendations for improvement, and identify the benefits of the experience. This data will be used to justify the need for program support, which the college of medicine provides annually. The program evaluation report detailed the findings that will be disseminated to the senior administrators, students, faculty, and staff who are the stakeholders. The findings from the study provided recommendations for improving

components of the program to increase retention and ensure student success in the first-year experience.

Definitions

The following terms related to peer-mentoring in medical education and higher education are defined in the context of this study.

Association of American Medical Colleges (*AAMC*): The national medical education association representing U.S. and Canadian medical schools, which provides oversight, guidance, and governance of services and programs associated with medical education research and clinical activities (https://www.aamc.org/).

COM Team: The College of Medicine mentoring experience which is designed to engage new students in their learning environment through peer mentoring, which is designed to mediate support for optimal academic outcomes (student leader, personal communication, April 30, 2007).

First-year experience: A term that describes a sum of curricular and cocurricular activities and initiatives, which reflect the institutional mission, foster academic success, and influence the campus culture related to student support (Nelson, 2014).

Liaison Commission on Medical Education (*LCME*): The accreditation commission of U.S. and Canadian medical schools. (http://www.lcme.org/)

Mentoring: A series of complex interactions between two people that accompany the primary goal of establishing relationships that could foster personal and professional growth for both parties (Kerry & Mayes, 2014).

Peer mentoring: A relationship experience established to allow experienced students to provide support and guidance to students amid their transition into new academic environments (Smailes & Gannon-Leary, 2011).

Retention: The concept of retention is the time of which students remain enrolled in school until completion of degree requirements (Nelson, Clarke, Stoodley, & Creagh, 2014).

Transition: The adjustment process that commences when students matriculate into new academic environments and experience a convergence with diverse student cohorts, expectations, and experiences (Clark, Andrews, & Gorman, 2013).

Significance

Medical students experience a myriad of challenges related to their transition to school that could lead to the deterioration in their emotional wellbeing (Brazeau et al., 2014). Learning how to balance the rigorous medical school curriculum, managing academic requirements, and being accountable to professional expectations of a new environment are only a few of the challenges medical students face (Brennan et al., 2010). Drusin et al. (2013) asserted that medical students navigate through a new professional culture with both excitement and anxiety and schools have traditionally offered both formal and informal advising systems. Many of these expectations are difficult for new students and even exceptional students may wonder how to navigate through the first-year experience successfully (Kenedy & Skipper, 2012). Brazeau et al. asserted that students enter medial school with comparable psychological profiles as their peers from undergraduate school and their stress levels increase significantly during their progression

through school. Although little can be done to prepare medical students for the vast expectations of a new academic environment, some medical schools, recognizing the need to provide guidance to a new cohort of students, have established mentoring programs (Bean et al., 2014). Due to the prevalence of this stress, medical schools must identify strategies to reduce attrition and help students adjust to new roles, responsibilities, and environments (Cutting & Saks, 2012). The socialization of new students is an institutional goal as first-year students face critical adjustment issues, which often result in stress (Fullick et al., 2012). University administrators should understand that the most important aspect of retention and satisfaction is an established formal support system for mentoring partnerships (Andrews & Clark, 2011; Bean et al., 2014; Kenedy & Skipper, 2012).

The study could be used to identify recommendations for changes to activities related to social integration to enhance outcomes in the educational experiences. In addition, the study will contribute to scholarly findings related to mentoring new medical students. The mentoring experience allows relationships to be formed that could lead to the reduction of stress a new environment (Kenedy & Skipper, 2012). Dickins, Levinson, Smith, and Humphrey (2013) and Fleming (2012) confirmed that a collaborative learning environment also aids in student support and retention. The implications for positive social change may include increased retention for first-year medical students and facilitated discussion to convey positive coping strategies, as well as academic success for new medical students. Increased retention affects social change by influencing the culture of medicine. The findings of this evaluation could provide guidance for program enhancement and could contribute to student success in other medical education settings where

structured peer-mentoring experiences are offered. Further investigation will be needed before solid conclusions can be made about the effect of mentoring in the first-year experience, but the significant findings of this study may suggest that research in this area is beneficial concerning prevention of stress in new medical students.

Given that medical students benefit from mentors as they construct their professional identity that is expected of a future physician, medical educators should be aware of manifestations of transitional challenges students face (Bean et al., 2014). Higher education institutions should implement formal support systems for mentoring partnerships and evaluate mentoring programs designed for student support (Bean et al., 2014; Cutting & Saks, 2012). To ensure student participation, a structured but flexible program should be in place (Lopez et al., 2010). More research is needed to identify the most effective mentoring program structures that help students adjust to medical school and also consistent program evaluation methods should be determined and implemented (Brennan et al., 2010; Kenedy & Skipper, 2012; Terrell, Snyder, Dringus, & Maddrey, 2012; Tsen et al.,2012).

Guiding Research Questions

Practical approaches detailing how to structure the assessment of first-year peer-mentoring experiences are critical missing components in literature related to educational research. The lack of assessment stifles program development because no documented findings are collected consistently to determine areas for improvement or to assess if the program is meeting its objectives; the literature consistently supports the implementation of assessment and evaluation protocols for mentoring programs (Bean et al., 2014; Hall &

Jaugietis, 2011). The lack of research in the area of assessment methodologies of peer-mentoring programs in the first-year experience confirmed the gap in practice of formal assessment methods to determine the effectiveness of peer-mentoring programs and confirms the need for mentoring experiences to enhance the students' transition into new academic environments. Andrews and Clark (2011) found that peer-mentoring is beneficial in addressing transition and retention issues when implemented on a school-wide basis for all new students and evaluations provide a mechanism for institutions to identify benefits of the experience.

The objectives of the program included providing information about access to services and individuals; providing general advising regarding coping strategies and managing transitional concerns; establishing a platform for rapport to be established with new students; and increasing student's awareness of the necessity of emotional health, wellness and physical fitness for medical school success. For the program evaluation, the goal was to determine the effectiveness of the peer-mentoring program in the first-year experience. The findings from the evaluation provided recommendations for program refinement at the study site.

Quantitative Research Questions

The central research question guiding this project was:

1. What is the effect of the peer-mentoring experience on students' transition into medical school?

To determine the effect of peer-mentoring in the first-year experience, I incorporated the following sub-questions into the study:

1. What were students' confidence levels before beginning medical school?
2. What were students' confidence levels after participation in the peer-mentoring program?
3. What is the difference in confidence levels of medical students before beginning medical school compared to after participating in the mentoring program?

   H_0***:*** There is no difference in confidence levels of medical students before beginning medical school compared to after participating in the mentoring program.

   H_a***:*** Students had higher confidence levels after they participated in the peer-mentoring program than they had before they participated in the program.
4. How did the peer-mentoring program affect the students' learning experiences? How do students value the peer-mentoring experience?

Qualitative Research Questions

To add depth to the quantitative survey results, I used an existing qualitative instrument by Andrews and Clark (2011) to create an interview guide and to answer questions related to the students' perceptions of the program. The qualitative questions are outlined below:

1. What were students' concerns about beginning medical school?
2. What supports do students value and perceive as beneficial to their transition to medical school?
3. What effect did peer-mentoring have on students' academic performance in the first semester of medical school?

Review of the Literature

Introduction

The literature review was informed by research that was designed to expand the awareness of mentoring, the benefits of mentoring, experiential learning theory (ELT), and management of mentoring programs by educational institutions with a primary focus on mentoring in the first-year experience. In addition to using Walden University Library, ERIC, Scopus, Google Scholar, and PubMed, searches were conducted to identify recent literature 2010-2015) using terms *experiential learning theory*, *mentoring*, *mentoring in medical education*, *mentoring programs in higher education*, *educational program assessment*, *qualitative assessment*, *assessment and evaluation for medical student programs*, and *peer-mentoring in the first-year experience of medical school*. Seminal studies and research based articles that have been published beyond the 5-year requirement were used to understand the history of mentoring in higher education. I used older studies to investigate the value of mentoring in higher education as their findings contributed to the scholarly body of knowledge about the concept of mentoring. I used the seminal studies to foster a better understanding of historical findings about mentoring in relation to the various schools of thought found in recent literature.

Theoretical Framework

Knowles et al. (2014) noted that experience can support learning if new knowledge is presented in such a manner that relates to existing knowledge. Peer-mentoring is an advisory relationship among peers where knowledge is exchanged since the concept promotes teaching and guidance with positive outcomes such as higher graduation rates,

student satisfaction, and lower stress level (Andrews & Clark, 2011; Bean et al., 2014; Taylor et al., 2013; Tsen et al., 2012). Mentoring also helps to increase socialization and professional development of students (Christie, 2014; Fullick et al., 2012; Terrell et al., 2012). ELT (1984) was the theoretical framework that was used for the program evaluation. Inspired by the works of Dewey (2007) and Lewin (1947), Kolb led the development of the ELT, utilized in higher education, which is widely accepted as a valid and promising model for increasing student-learning experiences (Kolb, 2014). Multiple components are essential to the construct of an effective mentoring program such as a well-defined organizational structural component, program content, administrative considerations, and a theoretical analysis (Hall & Jaugietis, 2011). The ELT provides a firm theoretical base for the peer-mentoring concept because it supports the thought that the learning process occurs through the transformation of experiences (Kolb, 2014). From a holistic perspective, Kolb's model features the four components of experience, perception, cognition, and behavior in a learning cycle that spans four cyclical phases: "concrete experience, abstract conceptualization, reflective observation, and active experimentation" (Graves & McDavid, 2014, p. 29).

Knowles et al. (2014) envisioned the stages as interrelated phases within a cyclical process including concrete experience, which moves through reflective observation, and abstract conceptualization that results in active experimentation. Experiential learning is widely used in on-the-job training situations to equip and prepare employees to meet the standards of the company (Kolb, 1984). Similar to employees, medical students are recruited with an expectation that they come to medical school and meet the established

standards of academia without prior guidance (Andrews & Clark, 2011). Advanced students are selected to serve as peer mentors and are trained in providing positive guidance and support to alleviate transitional difficulties (Brennan et al., 2010; Cutting & Saks, 2012; Fullick et al., 2012). Knowles et al. found that experience is transferred in the mentoring process because adult mentors use processing and transforming to formulate concepts to make decisions and resolve problems. Psychological and emotional support, engaged assistance, and role modeling are three main functions of mentoring that may foster stress reduction, which is a desired outcome of formal and informal mentoring programs (Fullick et al., 2012).

The ELT is illustrated in various medical education experiences that support the premise that it is most effective for students to learn by doing and through relevant practical experiences (Brennan et al., 2010). Experience, when translated through reflection, forms concepts, which are guides for active experimentation leading to decisions for new experiences (Knowles et al., 2014). The ELT supports the position that experiential learning may be related to peer-mentoring. The research questions could be beneficial in addressing the value of the program as it is directly related to transition and retention issues. The evaluation results could provide directions for an evaluative mechanism for institutions to assess the benefits and opportunities of mentoring experiences.

Defining *Mentoring*

Mentoring is defined as a low cost, human professional development strategy which is based on a personal relationship (Kerry & Mayes, 2014). Scholars indicate that the concept of mentoring has more than one acceptable definition because a mentor may act as

a role model, counselor, advocate, coach, advisor, and teacher. Mentoring programs may be formal or informal and structured or unstructured (Bean et al., 2014; Frei, Stamm, & Buddeberg-Fischer, 2010; Kenedy & Skipper, 2012; Kerry & Mayes, 2014). As mentoring has become more prominent in higher education, mentoring frameworks have been developed to prepare students for professional expectations (Christie, 2014; Drusin et al., 2013). Sambunjak, Straus, and Marusic (2010) who conducted a systematic review of qualitative research, acknowledged the seminal work of Kram, who inspired an increase in mentoring research efforts in the1980s and discussed mentoring relationships. Kram (1983) defined mentoring as a complex professional or personal relationship where mentors and mentees actively participate in the formation and development of the relationship.

The Benefits of Mentoring

The benefits of mentoring programs have been investigated in numerous studies that evaluated the concept from various perspectives. Frei et al. (2010) conducted a review of 428 studies published between 2000 and 2008 about medical student mentoring programs in several countries. Mentoring was identified as a viable resource for students but formal mentoring programs were lacking in many countries. For countries with mentoring experiences, it was recommended that such programs establish rigorous assessment processes to provide evidence of their impact on career advancement and the program's benefits to medical students (Frei et al., 2010). Peer-mentoring facilitates a culture of support and the institutional climate profoundly affects academic and professional success of medical students (Christie, 2014; Dickins et al., 2013; Taylor et al., 2013). Christie (2014) and Collings et al. (2014) indicated that peer-mentoring has had a

positive impact on students who were mentored as evidenced by perceived social support, improved self-esteem, and higher levels of satisfaction related to integrating into a new academic environment. The format of peer-mentoring allows universities to establish a platform to support their students during transition into the first-year of school (Andrews & Clark, 2011). University administrators should understand that the most important aspect of retention and satisfaction is an established formal support system for mentoring partnerships (Bean et al., 2014).

Maher et al. (2013) and McMillan (2013) suggested that the emotional impact of transitioning to a new academic environment could result in academic difficulty and problems with retention, because of increased workload, high academic standards, loneliness and institutional culture. Andrews and Clark (2011) asserted that a peer-mentoring program should be a comprehensive experience that includes appropriate training measures with continuous administrative attention to the outcomes of student success at transition and retention. This will allow considerable benefits that may be realized in terms of student success at transition and retention. Becoming inclusive of all students, changing the institutional culture to embrace international students and understanding the needs of international students are other considerations related to mentoring experiences. Peer-mentoring maximizes institutional efforts and resources by creating a culture of student support, influencing the institution's reputation and enriching the learning that takes place (Bean et al., 2014).

McMillan (2013) and Taylor et al. (2013) confirmed that improving institutional culture could be realized by establishing a formal peer-mentoring framework to help

support the transition of students into a new academic environment. Both concluded that a structured mentoring experience could help students progress through a journey with a person who has traveled the path. Creating a culture of support for students from different ethnic backgrounds was the focus a qualitative study by Dickins et al. (2013) who investigated the perspectives of medical minority students and identified strategies that medical schools could use to support all students, such as a collaborative learning environment, a health disparities course, and a diverse student body. In addition to the concept of mentoring, creating a culture of support was noted as an invaluable component to the educational process (Dickins et al., 2013; Fleming, 2012; McMillan, 2013; Taylor et al., 2013).

To assess the transition and challenges of international first-year students, Ferguson et al. (2013) conducted a qualitative study and confirmed that over 80% of international students were satisfied with their study abroad experience despite a range of issues, such as language barriers, loneliness and isolation, cultural differences, difficulty in understanding academic expectations, and financial concerns. The authors recommended that programs that provide international experiences establish documentation about workload expectations, academic support services, and curriculum overview and develop peer-mentoring to ensure an efficient transition into a new culture and new environment (Ferguson et al., 2013). Bean et al. (2014) asserted that an institutional environment that is infused with culturally relevant mentoring experiences is an effective mechanism for achieving engagement and alignment. Meinel et al. (2011) also conducted a cross-sectional study in Germany to assess the consistency of mentoring experiences for new medical

students and confirmed there were few cases where formal mentoring programs were available and an even smaller number of cases regarding students who received one-on-one mentoring. A recommendation for a standardized measure for further national and international studies was suggested so mentoring programs can be improved to maximize their institutional benefit to mentees and mentors (Meinel et al., 2011).

Andreanoff (2013) found that the concept of mentoring is being widely implemented by higher education institutions as a mechanism to support student retention and enhance the student experience in their transition to a new learning environment. In support of this concept, Andrews and Clark (2011) also recommended that institutions consider implementing mentoring as part of a retention strategy that would benefit higher education institutions as strong student support should be the responsibility of everyone in an academic community (Sandars, Patel, Steele, & Mcareavey, 2014). Dickins et al. (2013) suggested that medical schools implement an intentional cultivation of a collaborative learning environment to ensure academic success. Andrews and Clark noted that peer-mentoring is beneficial in addressing issues around transition and retention when it is implemented on a school-wide basis to all new students. Clark et al. (2013) studied the use of peer-mentoring in the United Kingdom to support student retention and found participation in such programs positively affected outcomes from both pedagogic and social perspectives. The results of their research solidified the importance of higher education institutions establishing well-structured mentoring experiences at times when first-year students are vulnerable to withdrawals because of transition challenges and difficulty adjusting to academic demands.

The adjustment to medical school can be daunting for some students because the period of transition includes both the developmental phase, where personal identity is formed, and the formation of professional identity (Sandars et al., 2014). The benefits of mentoring for students have been consistently confirmed in literature. Sambunjak et al. (2010) found that mentoring had a significant impact on career direction, professional and personal growth, and scholarly development and required commitment and appropriate interpersonal relations of the mentor and mentee. Drusin et al. (2013) asserted that students found mentoring experiences more meaningful when there was an increase in visits with mentors and also confirmed that programs should be evaluated regularly from both mentee and mentor perspectives to ensure continuous improvement.

The work of Stenfors-Hayes et al. (2011) also confirmed that mentoring was invaluable and they noted the perceived positive effects of such nurturing relationships. They concluded that mentoring led to personal and professional growth, improved teaching, and improved peer relations because the mentors' experiences provided guidance and perspectives of similar and relevant issues shared during experiences. The benefits of mentoring were also confirmed by McNamara et al. (2014) who conducted a study in Ireland that was designed to evaluate mechanisms of action learning, coaching, and mentoring interventions used in developing management skill sets of nurses and midwives. Seven key leadership competencies were noted: advocacy and empowerment, emotional intelligence, communication, decision-making, responsibility, strong interpersonal skills, and a dedication to clinical excellence. These competencies were confirmed as the core values of experiential oriented measures in clinical leadership and were noted as traits that

are beneficial for mentors (McNamara et al., 2014; Sambunjak et al., 2010). These traits are also important to academic excellence in higher education and may be infused through mentoring experiences. Sambunjak et al. (2010) also concluded that the benefits of mentoring helped mentees not only succeed but also excel in challenging academic environment, and provided appropriate emotional support. Andrews and Clark (2011) found that peer-mentoring provides a unique approach to help students become acclimated to university life through the development of peer relationships that could be useful to them as they adjust to their new academic environment. Similarly, Andreanoff (2013) noted that mentoring has been implemented widely by academic institutions as a mechanism to foster student retention and enrich the student experience during the transition to a new learning environment.

Student engagement in the mentoring process was a consideration evaluated by Bicket, Misra, Wright, and Shochet (2010) who conducted a qualitative study that examined the level of engagement in leadership opportunities. The benefits were identified as: (a) bonding with others, (b) advising, (c) acquiring new skills, and (d) personal recognition (Bicket et al., 2010). There were multiple challenges or barriers to student engagement which were time commitment, scheduling conflicts, and financial obligations. Despite the challenges, the literature confirmed that medical educational institutions and students benefited from engaged student leadership. The benefits of engagement in mentoring were also investigated by Goff (2011) who found that students who attended three or more mentoring sessions increased their overall academic performance compared to those who did not. While there was no indication that the program had an impact on the

students' transition, it was recommended that the components of the mentoring experiences align with program objectives of supporting the transition of students (Goff, 2011).

Mentoring Challenges

In addition to the benefits of mentoring experiences in medical schools, challenges exist. The lack of time, varying structure and commitment, the deficiency of trained mentors, inconsistent communication, and interpersonal challenges were common problems identified in mentoring experiences (Nakanjako et al., 2014; Stenfors-Hayes et al., 2011; Taylor et al., 2013). These factors often negatively affected the implementation of mentoring experiences and could influence outcomes.

In relation to mentoring for minority students, Dickins et al. (2013) suggested that several factors undermined the success of mentoring efforts such as an inadequate number of minority faculty members who could serve as mentors and the burden some faculty members have with extensive involvement in recruitment activities of minority students. Despite the challenges, administrators could develop alternative plans to provide student support, such as lunch or large group meetings with minority populations to foster rapport and influence institutional culture (Dickins et al., 2013).

Nakanjako et al. (2014) also identified systemic and infrastructure limitations that negatively influence the quality of mentoring experiences and recommended that programs prioritize the use of technology, because a number of students consistently use the internet. It was also noted that institutions should provide sufficient financial support for mentoring, and enhanced communication procedures should be implemented to address challenges and to inform the administration of the issues. The selection, appropriate training, and

assignment of mentors are also challenges. Formal training for mentors and attention to assignments were recommended to help mentors understand their role and responsibilities and to enhance the overall quality of the experience (Taylor et al., 2013). Engaged, centralized administrative oversight of mentoring programs is one method of managing programs that institutions could employ to enhance the mentoring experience and address scheduling challenges, program management, and plans for training (Bean et al., 2014).

Social Media and Mentoring

E-mentoring was defined as mentoring or advising via email or through social media or on other computer-based systems to increase socialization and provide guidance to individuals in new environments (Williams & Kim, 2011). In higher education, there is an increase in the use of social media such as Facebook®, Twitter®, and online discussion boards to facilitate learning opportunities and to foster social engagement among students (Dobrow, Chandler, Murphy, & Kram, 2012). Williams, Sunderman, and Kim (2012) asserted that unlike the traditional practice of mentoring, e-mentoring provides much less real face-to face meetings between mentors but could be a mutually beneficial relationship whereby an experienced mentor transfers mentoring activities through electronic systems to a less experienced student or partner (Jacobs, Doyle, & Ryan, 2015) Williams et al. confirmed that there is a growing body of literature which confirms that the benefits of e-mentoring compared positively with those that resulted from the traditional design of mentoring. Williams and Kim (2011) identified multiple benefits of e-mentoring for adult learners who were returning to school and preparing for the transition by taking online courses using discussion boards. They found that students noted that e-mentoring was

helpful in finding information about the institution and understanding academic expectations. Students also indicated that e-mentors had provided useful guidance on real-world issues of transitioning into a new academic setting (Williams & Kim, 2011).

In a quantitative study DeAndrea, Ellison, LaRose, Steinfield, and Fiore (2012) investigated how social media was useful to help support students' adjustment to college and also confirmed that e-mentoring was beneficial in the development of peer support groups. DeAndrea et al. (2012) suggested that using a social media site to provide detail about resources and to address expectations and concerns was useful in facilitating a connection to campus, allowing students to learn about their new campus environment. DeAndrea et al. also indicated that social media could be used by administrators to help decrease feelings of uncertainty about the academic experience and could be used to influence positive expectancies as students begin their transition to school.

Jacobs et al. (2015) and de Janasz and Godshalk (2013) also confirmed the positive outcomes of e- mentoring and gauged the impact of this method of support on academic outcomes by using students who engaged in e-mentoring activities for one semester. The purpose of their study was to investigate outcomes as a result of virtual and electronic peer communication. These results confirmed that students, who participated in an e-mentoring relationship, found that the role modeling and individual guidance that their mentor provided, positively affected their overall satisfaction with the mentoring experience (de Janasz & Godshalk, 2013). The credibility of the mentor as a role model was confirmed as an important factor in providing mentees with relevant experiences to foster learning (de Janasz & Godshalk, 2013).

Evaluative Considerations in Mentoring

The lack of assessment stifles program development because no findings can be used to determine areas for improvement or to assess if the program is meeting its objectives (Hall & Jaugietis, 2011). Research scholars consistently recommend a critical assessment and evaluation of mentoring programs (Bean et al., 2014; Collings et al., 2014). Critical assessments of formal mentoring programs are needed since mentoring often takes place informally (Bean et al., 2014) and more data is needed to conclude the effectiveness of faculty mentoring programs in relation to specific behaviors performed by mentors (Shollen et al., 2014). Straus et al. (2013) also found that successful mentoring was essential to professional success and career satisfaction. In a qualitative study conducted through the Departments of the University of Toronto and the University of California - San Francisco, the following themes were developed about successful mentoring using a grounded theory approach: mutual respect, reciprocal support, clear expectations of obligations, personal connection with others, and shared values. A lack of dedication, poor communication, conflicts of interest, competition among peers, and inexperienced mentors characterized issues that contributed to mentoring relationships that fail (Straus et al., 2013). It was also noted that some studies have shown the benefits of mentoring, but few have investigated the characteristics of effective and failed mentoring relationships (Straus et al., 2013; Tsen et al., 2012). Further research was recommended on the gaps between failed relationships and the relationship between failed mentoring and promotion, retention, and academic productivity. With the declining interest in careers in academic medicine, additional assessments are needed in educational intervention of mentoring throughout

careers (Straus et al., 2013). Tsen et al. (2012) confirmed that mentoring is an essential component in academic and professional success and more structured programs are needed to help mentors develop skills.

Korver and Tillema (2014) studied the differences in student perceptions of feedback following the assessment of an advisor approach (directive) to an encourager approach (non-directive) and confirmed the importance of how mentors provide feedback. Students confirmed that the advisor approach had positive impact on trust. The study also showed that the nature of feedback is a reciprocal activity which influences the mentoring experience through establishing expectations and structure to influence outcomes. Hall and Jaugietis (2011) also asserted that there is a need for research to measure the effectiveness of programs and evaluations as mentoring helps students adjust to new environments. Implementation of these programs should be informed by both theoretical analyses and empirical evidence.

Further recommendations for mentoring programs include structured experiences, an assiduous mentor selection, and formal training of mentors (Hall & Jaugietis, 2011). The lack of time, lack of structure and commitment, lack of training, and interpersonal challenges were common problems identified in mentoring experiences (Stenfors-Hayes, et al., 2011; Straus et al., 2013; Tsen et al., 2012).

Mentoring in the First-Year Experience

Research associated with peer-mentoring in the first-year experience of medical school and the institutional value related to peer-mentoring and medical student attrition is limited (Brennan et al., 2010; Kenedy & Skipper, 2012). A large number of medical

schools are seeking different approaches to help students transition into school and are using students to facilitate the process because they have influence on their peers (Colvin & Ashman, 2010). Researchers consistently support the premise that first-year students who participated in peer-mentoring experiences reported consistently higher levels of success in the transition to school, and were very likely to become more acclimated to social integration in the university community. Thus mentoring can be helpful in adjusting to university life (Clark et al., 2013). The role that peer mentors play in helping new students is valuable to students and to the university because the first-year is a vital transition during which peer-mentoring can address issues of social support and retention (Clark et al., 2013).

Dickins et al. (2013) suggested that medical schools implement intentional cultivation of a collaborative learning environment to ensure academic success of new students. Andrews and Clark (2011) noted that peer-mentoring supported students in their transition to school and afforded a sense of social engaging and belonging. DeAndrea et al. (2012) stated that a significant body of research confirms that social support is a strong factor related to students' successful adjustment to college life. There is confirmation in literature that higher education institutions benefit from positive peer interactions because they are related to student academic success in postsecondary education (Kenedy & Skipper, 2012; McMillan, 2013; Meinel et al., 2011). Lopez et al. (2010) also noted that students found mentoring useful during transitional periods in learning experiences and Hall and Jaugietis (2011) confirmed that peer-mentoring enhanced the first-year experience but its effectiveness needed to be measured and documented through student assessments.

Scholars have documented the value of mentoring in the first-year experience. Cook (2012) noted that consistent methods should be established on how to structure a mentoring program and to include comprehensive plans for matching mentees with mentors to foster trust. In addition to training mentors, administrative oversight should be provided to ensure the success of mentoring programs. Hryciw et al. (2013) also confirmed that peer support was an essential component in the first-year experience. They concluded that the mentoring experiences positively impacted students' study skills, strengthened their confidence in understanding concepts, and fostered the importance of teamwork, oral communication skills, and collaborative communication which led to better learning outcomes and retention rates.

The duration of a mentoring experience was studied by Fullick et al. (2012) who confirmed that a short term structured mentoring program could reduce stress associated with the first-year experience because of the perceived social support mentors provide. The authors examined the influence of formal mentoring programs on new student stress. Fullick et al. suggested that personality differences, the critical period of adjustment of the first-year, and training of mentors were recommendations that institutions should consider when planning and developing mentoring experiences. The study also confirmed that mentees who received greater career and psychosocial support experienced less stress. Collings et al. (2014) noted that the lack of direction and advice can often lead to ambiguity and uncertainty which can negatively affect students' stress levels. Fullick et al. also found that mentors with an engaged concern for mentees foster positive, supportive relationships,

which aided in stress reduction and they confirmed that formal mentoring programs have a positive influence on students in the first-year experience.

Conclusion

Upon review of current and relevant literature regarding peer-mentoring in higher education, saturation was reached when themes emerged which confirmed the institutional benefits of peer mentoring, the challenges of managing programs, and the vast opportunities that mentoring provides in the first-year experience and in higher education. Other themes related to how mentoring influenced institutional culture, student success, and retention were also identified. The incorporation of effective selection processes, training procedures, and innovative methods such as social mediation were also addressed in the literature. Scholars who conducted studies related to peer-mentoring consistently confirmed the importance of critical assessments and evaluations of mentoring programs at appropriate points to investigate the strengths and opportunities related to peer mentoring. Further research was recommended to assess different approaches for peer support that could be useful in mentoring experiences which could add to the body of knowledge related to the first-year experience.

Implications

Based on a participatory-oriented approach, the research findings are expected to provide recommendations for program enhancement and refinement and to see if the program meets the needs of its participants (Pollard, 2008). Students who are the program participants will share their perceptions and will confirm or refute the value of the program. The evaluation may determine if the needs of students were met, identify unintended

outcomes, review if the implementation strategy led to intended outcomes and confirm if the program is of value to the mission of the institution (Spaulding, 2014). The implication from a local perspective is to identify ways to enhance the experience. If the results of the evaluation are reliable and respond to the needs of the stakeholders, they could enhance the practices and policies of the program (Spaulding, 2014).

The intentional focus of this research project is to better understand the impact of peer-mentoring in the first-year experience. Findings of this program evaluation could lead in several project directions, such as an evaluation report that identifies the strengths and weakness of the mentoring experience. The development of a curriculum for a professional development training experience for mentors to help new students prepare to meet the broad expectations of a physician is another recommendation that may arise from the findings of the evaluation report. The recommendations from the report could be discussed with participants and key administrators to ensure that program deficiencies are addressed and opportunities for improvement are implemented systematically and in a timely manner. Participants could also be empowered to develop future goals of the program to foster engaged collaboration with students and administrators and positively impact institutional culture (Bean et al., 2014; Hogan, 2010; Nelson, 2014). The actual project appears in Appendix A and is discussed in Section 3.

Summary

The purpose of Section 1 was to address the problem that supports the purpose of the doctoral project study. The issue of determining whether the peer-mentoring program is of value to the first-year experience is the rationale for this evaluation. This was important

to the learning environment because the evaluation results addressed various concerns of stakeholders. The research questions were used to guide the evaluation to determine if the mentoring experience was valuable and worthy of the funding it receives from the administration. This section also contained a comprehensive review of current literature that addressed the theoretical framework, current research findings associated with peer mentoring, and the various aspects of the mentoring concept. The emphasis on the current research literature focused on the overall benefits of mentoring specifically in the first-year experience, the need for assessment, and various challenges associated with implementing peer-mentoring programs. The concept of mentoring through online platforms was also discussed. Findings regarding the value of mentoring provided a foundation for the program evaluation and stressed the importance of assessment for program refinement.

Section 2 will address the methodological aspects of this project study. The sequential mixed-methods design will be discussed as well as the sample, selection of participants, data collection methods, a description of the instrument, and the data analysis methods. The section also contains the data triangulation process and concluding comments.

Section 2: The Methodology

Introduction

The program evaluation approach is a systematic investigation based on established criterion to determine the importance, significance, or value of a program, which results in descriptive and critical information to determine the merit, worth, or need for a program (Spaulding, 2014; Yarbrough, Shulha, Hopson, & Caruthers, 2011). As an established field of study that yields credible data, program evaluation methodologies have been in existence for more than 200 years (Hogan, 2010). This participatory-oriented program evaluation was informed by the results of a mixed-methods study using a convergent parallel approach that allowed quantitative data to be collected first and then qualitative data collected next to interpret findings based on convergence (Creswell, 2013).

In accordance with the evaluation goal to assess the effectiveness of a peer-mentoring experience, I selected the research design to incorporate quantitative and qualitative designs that improve the depth and understanding of the program evaluation findings (Yarbrough et al., 2011). A participatory-oriented program evaluation design allows researchers to examine programs through the lens of participants or creators of the program and to assess program outcomes (Spaulding, 2014). The participatory-oriented design is more appropriate because the goal was to gather data from medical students to determine areas for program improvement and refinement, as well as to ascertain whether the program meets the needs of its participants (Chouinard, 2013). The evaluation goals were designed to determine whether students perceive the mentoring program as valuable

in their transition to medical school during the first-year experience and to identify areas for overall program enhancement.

In the methodology section, I present the rationale for using a participatory-oriented evaluation using a mixed-methods research design with descriptions of the research site, the instrument, and interviews, and the processes for data collection and data analyses will be addressed.

Participatory-Oriented Evaluation

Brandon and Fukunaga (2013) identified Tyler as the first 20th-century theorist to use stakeholder evaluation as a systematic appraisal of educational programs and noted that Tyler used faculty as principal leaders in the evaluation of programs to enhance the use of the findings because the research focus is relevant to the work of academic leaders. Stakeholders are identified as persons who have a stake in the program and could be funding agencies, academic leaders, administrative personnel, and beneficiaries of the program (Brandon & Fukunaga, 2013). By the early 1990s, the approach became entrenched as a central element in several program evaluation approaches such as Patton's (2014) utilization-focused evaluation, transformative evaluation (Mertens, 2014), and practical participatory evaluation (Chouinard, 2013).

Program evaluations are invaluable to organizations as they are designed to assess processes, procedures, and outcomes and can determine whether programs are fulfilling their intended purpose (Hogan, 2010). I used a participatory-oriented evaluation to review students' perceptions at the end of the experience to measure outcomes. The participatory-oriented evaluation was based on the feedback from participants and those on the front

lines within an institution or organization who were engaged in the evaluation or assessment processes (Chouinard, 2013). The enlistment of key stakeholders in the collaborative process distinguished this approach, because the design also drew from first-hand experiences and emphasized the importance of employing participants to be actively engaged in the evaluation process (Hogan, 2010; Yarbrough et al., 2011). The evaluation objective based on the research questions was to document strengths and recommend changes to the peer-mentoring program for first-year students.

The design of the participatory-oriented approach was practical, useful, and an invaluable tool to address the concern needs and interests of primary users (Hogan, 2010). Participants (students) developed the peer-mentoring program. The "users" for this project study are the first-year medical students who participated in the mentoring experience. Because one of the goals of the project study was to identify areas for program refinement, a significant number of students who are also users of the program will likely become mentors and will be able to improve program outcomes because they will review the evaluation report. As mentors, they will be empowered to implement change to the program as they will work collaboratively with school administration to implement a plan for program refinement.

Mixed-Methods Design Approach

A mixed-methods data collection process followed a convergent parallel process that included the administration of a quantitative survey, followed by an interview for students who participated in the mentoring experience. Both methods allowed for detailed information that could assist institutions in enhancing the quality of their programs

(Vaterlaus & Higginbotham, 2013). Survey research was administered using the participatory-oriented evaluation approach, which focused on the interests of participants of the program (Spaulding, 2014). To obtain data, I administered the survey for the quantitative research using a standardized pre-established peer-mentoring evaluation instrument. Subsequently, I collected the qualitative data through interviews to identify shared patterns of behavior, beliefs, and perceptions, to understand the central phenomenon and to identify themes (Creswell, 2013). Upon completion of data collection processes, I completed the data analysis.

The mixed-methods research approach allowed for sequential quantitative and qualitative data collection procedures. I used the most common design of a mixed -methods study, a convergent parallel approach, which allows quantitative and qualitative data to be collected independently to further explain quantitative findings and identify patterns of consistency or contradictions (Kerrigan, 2014; Punch, 2013; Seidman, 2013).

Used to legitimize multiple research approaches in addressing research questions, mixed-methods research is an expansive form of research. I selected this approach because it expanded on the considerations noted in quantitative findings. Conducting qualitative interviews allowed me to analyze perspectives of the participants, identify meaning, and measure factors that are related to the research goal. Further, by using an approach that draws on the strengths of both quantitative and qualitative research, greater confidence could be held in the findings through corroboration, clarification, discovering paradoxes, and expanding the breath of the mixed-methods approach (Creswell, 2013; Seidman, 2013).

Setting and Sample

The setting for this study was a southeastern academic health sciences university in the United States where the college of medicine is one of six colleges that make up the university. The institutional mission encompasses education, research, and patient care. The total student enrollment for the university is 2,982. The college of medicine is responsible for managing an educational system to prepare students for the practice of medicine. The total enrollment in the college of medicine is 731 and 180 first-year students are admitted to the school each year.

Quantitative Sample

Potential participants for the quantitative survey included 179 second-year medical students who participated in the peer-mentoring program during the 2014-2015 academic year. According to the College of Medicine Admissions Office, the average age of the class was 23 and the class was 43% female and 57% male; and there were 17% underrepresented minority students. A sample was obtained through convenience sampling by an email solicitation to all 179 students from my Walden University email account to clarify that participation in the study was voluntary and not a part of their academic requirements. A minimum sample size of 103 was needed for the quantitative study. The sample size was determined using the GPower 3.1® software by setting alpha to .05, power to .90, and effect size to .3 (GPower, 3.1.3, Franz Faul Universität, Kiel, Germany, 2010). The software calculation provided the minimum number needed in the sample. The 95% response rate achieved in the present study exceeded the minimum sample size calculated in the power analysis.

Of the 179 potential participants, 168 students agreed to participate and completed the survey for a response rate of 95%. Fifty-five percent of students were male and 45% were female. All participants were between the ages of 18 and 44 years with the majority reporting that they were between the ages of 18 and 24 years. In addition, of the respondents, 73% were White; 14% were Black or African American; 7% were Asian/Pacific Islander; and 4% were Hispanic or Latino. Descriptive statistics were generated from E*Value (Healthcare Education (SaaS) Solutions). Table 1 presents demographic information for the sample.

Table 1

Participant Demographic Information

Gender	%
Male	54.2
Female	45.8
Ethnicity	
White/Caucasian	73.8
Hispanic or Latino	4.2
Black or African American	13.7
Asian/Pacific Islander	7.1
Other	1.2
Age (y)	
18–24	57.6
25–29	35.9
30–34	4.8
35+	1.8

Qualitative Sample

To obtain the participants, a purposive sample of second year medical students was obtained by inviting students who completed the quantitative portion of the study. For the qualitative study, a sample consisting of eight students was selected to participate in individual interviews to discuss various aspects of the program. Based on the Interpretative Phenomenological Analysis (IPA) for interview research method, a smaller sample (less than 20) was recommended for a single study because a smaller sample size allows for responses to be studied intensively, highly relevant information may be obtained, and clarity of responses may be achieved (Robinson, 2014).

Procedures for Access to Participants

Following Institutional Review Board (IRB) approvals through Walden University (IRB approval number: 08-27-15-0250342) and the medical school (IRB approval number: PRO00045850), to acquire access to participants, email invitations were sent to students who completed the first-year of medical school. A Letter of Cooperation to conduct the study was signed by the Dean of the College of Medicine. The students were contacted inviting them to participate in the study and informing them that they would receive an email with a link to the quantitative survey. The Office of Assessment and Evaluation sent the link to the survey to second year students through the E*Value system which is the web-based software program used by the institution to complete assessments.

Quantitative. Upon confirmation of institutional permission, I sent an email that provided the description of the survey to all students who have completed the first-year of medical school. Students gave implied consent by clicking on the link to the survey. The

survey was administered through E*Value®. If students consented to participate, they completed the survey by identifying the most frequent response that most closely aligned with their perception of their peer-mentoring experience.

Qualitative. Following IRB approvals potential participants for the qualitative interviews were recruited with an email and a flyer that included a brief description of the study. The flyer was posted in the campus student lounge, and an email was sent requesting students to email or call me to confirm their willingness to participate. My contact information was provided. Signed forms were collected from each student prior to the interviews to ensure that informed consent was obtained. Interviews included eight students who were interviewed in the fall of 2015.

Measures for Protection of Participants' Rights

Participants were informed of the research topic, the quantitative and qualitative data collection methods, and goals of the evaluation before they were asked to provide consent to participate. Students were notified of the IRB approvals and advised that they may withdraw at any time from the study. The identities of students who took the survey remained anonymous and data were not collected in a manner that was perceived as coercion. Participants' names were not included in any data presented to stakeholders and no personal information about the students was disclosed as a result of participation. In acknowledgement of potential risk of students feeling obligated to take the survey, all participants were assured verbally and in writing that their survey responses were confidential and their interview responses were confidential. Further, no negative

repercussions would ensue if any student elected not to participate in the study or withdrew from the study, at any time.

Confidentiality of participant identities was a concern and security was strictly maintained. As primary researcher, I maintained physical custody of all survey responses, interview recordings, transcripts of the interviews, and all documentation related to the project. To ensure confidentiality, pseudonyms were used in research reports that were intended for distribution. The interview data were reviewed, analyzed, coded, with themes developed, and interpreted for meaning; the organization of the data began with aligning similar responses and labeling collected data into broad themes (Creswell, 2013). The final themes were determined and reported as the findings of the project study. At the completion of the project study, I archived all documents that will be maintained for 5 years in physical files and took steps to maintain study related materials in a locked, fireproof file cabinet in my office at my residence.

Data Collection Strategies

Quantitative Sequence

A mixed-method data collection followed a sequential process that included the administration of a quantitative pre-established instrument that consisted of questions related to the mentoring experience. Permission to use the Peer-mentoring Evaluation Toolkit (PMET) instrument (see Appendix B) was obtained from Creative Commons® the licensor of the assessment tool (see Appendix D). The disclaimer on their website confirmed that the tool may be duplicated and redistributed in any medium or format and Creative Commons® cannot revoke permission as long as the license terms were followed.

The PMET instrument was designed for the purpose of assessing peer-mentoring in higher education in the United Kingdom. The tool was derived from the initial survey used in the Peer-mentoring Works!® Program (Andrews & Clark, 2011). The PMET instrument was used in a multiple case-study design with six institutions which confirms that it is vetted and reliable. The instrument has been published and referenced in at least nine different publications. The instrument was modified for this study to assess the impact of peer-mentoring in the first-year experience in a southeastern U.S. medical school. The amended PMET did not impact validity or reliability because the terms were changed to ensure clarity for use in the United States. The questions were formatted using a Likert scale and took a minimal amount of time (15-20 minutes) for students to complete. To confirm reliability the survey was pilot tested on two groups of third and fourth year medical students.

The instrument has seven sections. Section 1 included background information of participants regarding their gender, ethnicity, and age. I collected this information and used it for data analysis purposes. Section 2 had six items related to students' confidence prior to matriculation. Section 3 contained five items related to students' perceptions about their participation in the mentoring experiences. Section 4 consisted of four items related to their participation in the mentoring program, which allowed the subjects to provide data about their experiences. Section 5 consisted of six items that addressed the possible influence of peer-mentoring on learning experiences and Section 6 contained six items about the value of peer mentoring. Section 7 included reflective questions about the student's experience at the university and if they considered leaving school and if so, what influence did the

mentoring program have on their decision to remain enrolled. Sections 2, 3, 5, and 6 of the instrument consisted of 5-point Likert-scale formatted statements with scores for each item ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Section 4 of the instrument consisted of a 5-point Likert-scale formatted statements with scores for each item ranging from 1 (*strongly decreased*) to 5 (*strongly increased*). I calculated scores for each section and I determined the value of each section by the sum of scores and dividing by the number of items.

Pilot test. To confirm reliability, I implemented a pilot test of the instrument and I conducted a statistical analysis using Cronbach's alpha to assess internal consistency. Following approval of the IRB application from Walden University and the medical school, I conducted a pilot study to evaluate the basic psychometric property of the instrument to be used in the full study.

Methods for pilot test. I administered the survey to 351 third and fourth year medical students. The instrument was administered via the E*Value Program which is a web-based program to administer assessments. Of this group, 214 students completed this survey for a response rate of 61%. I conducted all analyses using SAS® version 9.3 (SAS Institute, Cary, NC). I calculated Cronbach's alpha to assess the internal consistency of Sections 3 through 6. I completed these calculations for each class separately and then I combined the calculations to further review consistency. I did not analyze Sections 1 or 7 as Section 1 contained demographic questions, which were not related to each other and Section 7 was based on only two questions, yielding negative values.

Results for pilot test. The internal consistency assessment showed that all of the sections were highly acceptable, good, or excellent. Results for the sections were: general impact of the mentoring (.87), effect on learning (.87), and values (.90). All individual sections were deemed very good or excellent using this method. The section on impact of the mentoring on confidence was shown as highly acceptable (.77). When using this calculation on the entire survey the Cronbach's alpha was .89, which showed good to excellent internal consistency. Based on results of the pilot test, some of the questions in the survey were amended to ensure readability and understanding. Following confirmation of reliability, the instrument was administered online to second year students.

Qualitative Sequence

The second section of the PMET is a qualitative interview guide (see Appendix C) developed as part of the Peer-mentoring Works!® Project. The interview guide consisted of a pool of questions to be used during interviews for the qualitative research method. For interviews, the authors of the PMET indicated that institutions may adapt the interview guide for their own purposes. The interview questions were developed to examine which concerns they had about beginning school; the extent the peer-mentoring experience assisted in their transition to medical school; the effect that peer-mentoring had on their studies. With regard to support, they were asked if they talked to their mentors about academic concerns. The final question was related to recommending the program to future students.

Following the completion of the quantitative survey, I sent an email to students using my Walden email account to invite them to participate in interviews to share their

perceptions regarding their participation in the mentoring experience. Interviews were conducted in a private office on campus with only me and the interviewee present. To ensure comfort of interviews, measures were employed to ensure that the interview setting was informal and non-threatening. Participants were informed to notify me if at any time they felt anxious or uncomfortable during the interview. Interviews were recorded to ensure accuracy of data. Through the interviews, I expected to develop a stronger understanding of dynamics of mentoring in the first-year experience.

Participation in the interviews allowed students a platform to convey their perspectives about the mentoring experience and allowed students to provide detail about their reactions about the experience, present recommendations for program improvement, and explain the strengths and opportunities for the program (Polland, 1989; Spaudling, 2014). Following the first phase of data collection, qualitative data were gathered to identify shared patterns of behavior, beliefs and perceptions, to understand the central phenomenon and to identify themes (Creswell, 2013).

Commonly used in evaluations, qualitative methods investigate specific aspects of programs to give attention to experiences of participants (Polland, 1989). To seek a greater understanding of phenomena, qualitative research questions are generally broader and used to seek understanding of perceptions and they add cultural and contextual dimensions to the study (Vaterlaus & Higginbotham, 2013). Further qualitative research fosters collaboration with practitioners or research participants to support the goal of examining phenomenon inductively to produce a finding that is grounded in the data (Maxwell, 2013). Qualitative

research is a valuable component of this project study. According to Merriam (2014) the approach is designed to obtain information about how people interpret their experiences.

Data Analysis

Quantitative Analysis

The results related to the use of peer mentoring, benefits, value, and barriers were collated, and analyzed. The central research question guiding this project was:

1. What is the effect of the peer-mentoring experience on students' transition into medical school?
2. To determine the effect of peer-mentoring in the first-year experience, I incorporated the following sub-questions into the study:
3. What were students' confidence levels before beginning medical school?
4. What were students' confidence levels after participation in the peer-mentoring program?
5. What is the difference in confidence levels of medical students before beginning medical school compared to after participating in the mentoring program?

H_0: There is no difference in confidence levels of medical students before beginning medical school compared to after participating in the mentoring program.

H_a: Students had higher confidence levels after they participated in the peer-mentoring program than they had before they participated in the program.

6. How did the peer-mentoring program affect the students' learning experiences?
7. How do students value the peer-mentoring experience?

The statistical program, SAS® (SAS Institute, Cary, NC) was used to analyze quantitative data. A composite score of the Likert scale survey was calculated and data from surveys were analyzed using descriptive statistics to describe responses for Research Questions 1, 2, 3, 5 and 6. For Research Question 5, a statistical analysis was conducted using a *t* test that included the results from Item 6 in Section 2 of the survey and Item 5 in Section 3 of the survey. These items assessed students' confidence before and after engaging in the mentoring program. These two items were used for hypothesis testing. The mean for each group of scores was compared to determine whether they differed from each other significantly under the assumptions that the paired differences are dependent because they are from the same subject.

Qualitative Analysis and Validation Procedures

Qualitative data collection included eight student interviews using Dragon Dictation for recording. I used a thematic analysis to analyze the data as outlined by Braun, Clarke, and Terry (2015). To add depth to the quantitative survey results, I used an existing qualitative instrument developed by Andrews and Clark (2011) to create an interview guide, and I asked students to discuss why they chose to study at the medical school. I also asked about concerns they had about beginning medical school and support they perceived as beneficial to their transition. With regard to support, I asked if they talked to their mentors about academic concerns. The final question was related to recommending the program to future students. Upon completion of interviews, I read and reviewed the transcripts. I used a constant comparison approach to define coding categories that were relevant to the research questions, which allowed opportunities to explore possible themes.

I organized the themes based on consistency of responses in relation to why students chose to attend this medical school, activities their mentors did that may have been helpful to them in their transition to medical school, and aspects of the mentoring program that they found helpful. Following the coding process that I developed based on the interview questions, as topics emerged (e.g., at least three times), I document specific themes. To address the matter of discrepant data, I completed a search for contradictory or variant data within the results. I documented variant comments (e.g., responses that were tangential or less relevant to the themes) that were not consistent with themes as recommendations for improvement. I also identified some of these recommendations for program refinement in the open-ended comments from the quantitative study.

Role of Researcher in Data Collection

As an administrator and advocate for students, I do not serve as an evaluator for medical students, nor do I make decisions regarding their grading or promotion. I was responsible for implementing plans to complete the evaluation.

According to the Standard MS-18,

> There should be formal mechanisms at the medical education program for medical student mentoring and advocacy at each instructional site. A medical student should have the option of obtaining advice about academic issues or academic counseling from individuals who have no role in making promotion or assessment decisions about him or her (Liaison Committee for Medical Education, 2014, p. 23).

As an internal evaluator for the program evaluation, I reviewed students' perspectives to determine the most effective practices of the peer-mentoring program.

Patton (2014) addressed the challenges related to internal evaluators and suggested that internal evaluation is usually considered a leader in organizations. Written approval to conduct research was received from my immediate supervisor, the Dean of the medical school. An advantage of being an internal evaluator is an established rapport with stakeholders, and an understanding of how to access data and knowledge of the structure of the learning environment (Svensson & Cousins, 2015). These factors allowed for a more efficient examination of program practices (Merriam, 2014). To guard against potential research bias, I continued to acknowledge the potential for bias by checking IRB protocols and guidelines for research provided by Walden University. I consulted my chair for guidance and used the office of assessment and evaluation administrator as a peer reviewer to assess the scope of the research project and for data analysis support.

There were no ethical issues or conflicts of interests that I could identify. I understand that it is the responsibility of the researcher to provide a clear interpretation of data (Creswell, 2013). To achieve this goal, I sought guidance from my doctoral committee and faculty mentors to ensure appropriate oversight of research protocols. Such practices were imperative when documenting outcomes, identifying and confirming findings and, as appropriate, discussing recommendations about future directions (Creswell, 2013).

Limitations

The study is limited to an evaluation of a peer-mentoring program at a U.S. southeastern medical school. The findings may not apply to larger medical schools because of differences in infrastructure, personnel, and administrative considerations. The sample consisted of second year medical students and their perspectives were limited because they

were relatively early in their medical educational studies and may not have been able to identify the long-term benefits of the mentoring program. The participants also represented a narrow range of age and academic experiences. A study with a larger sample could include more students from different colleges that could provide a broader, and more diversified perspectives about the impact of peer mentoring. Further, while this study is limited to the mentoring aspect related to transitioning to the first-year experience, future studies could incorporate a larger sample that could yield greater depth of information about attitudinal beliefs and perceptions that influence professional development and career decisions, and the effect of mentoring in the first year as it relates to relieving levels of anxiety and stress experienced by medical students. The limitations could also lead to various directions for future research related to evaluation approaches to assess the perceptions about the impact and value of mentoring in the various disciplines in higher education.

Data Analysis Results

This section consists of an analysis of the quantitative and qualitative data. The survey was comprised of a series of attitudinal questions about students' feelings about beginning medical school, confidence in succeeding, the impact of peer mentoring, and the value of peer-mentoring in the first-year experience. The findings from the survey data are presented in tables which are followed by interpretive detail related to the results. Themes from the qualitative data are also presented with analytical discussion related to the students' perceptions of the mentoring experience.

Quantitative Findings

RQ2: Student retrospective confidence ratings before starting medical school. For the quantitative analysis students were asked to rate each item from 1 (*strongly disagree*) to 5 (*strongly agree*). Table 2 shows students' mean responses related to their perceptions prior to beginning medical school.

Table 2

Mean Responses Related to Students' Feelings Before Medical School

Item	Mean	SD
Before starting medical school		
I was anxious about making new friends.	3.09	1.14
I felt prepared for medical school.	3.46	0.92
I was anxious about adjusting to medical school.	3.76	0.92
I felt confident I would be supported at this medical school	3.79	0.78
I was apprehensive about starting school.	3.02	1.06
I felt confident in succeeding in my studies	3.75	0.82

The ratings ranged from 5 (*strongly agree*) to 2 *(disagree*) with the following statements regarding students' feelings before engaging in the mentoring program: experiencing anxiety about making new friends (46%), felt that they were prepared for medical school (57%), experienced anxiety about adjusting to school (72%), felt confident they would be supported at medical school (67%). In addition, over 37% were apprehensive about starting medical school. Over 70% indicated that they were confident in succeeding in their studies.

These findings suggest the majority of students felt prepared for school and that they would succeed in their studies. Despite that, almost half of students reported anxiety related to making new friends and over a third reported feeling apprehensive about starting

medical school. However, the majority felt confident that they would have support at medical school. One potential explanation of these findings could be that the message of support is extensively conveyed during recruitment and orientation. This could have led to an elevated level of confidence that they would be supported and that they would do well, despite their concerns. The results here addressed the research questions related to students' confidence levels before beginning medical school.

RQ1 and RQ3: Students' ratings after participating in the peer-mentoring program. Following their participation in the program, ratings ranged from 5 (*strongly agree*) to 2 (*disagree*) that the COM Team mentoring program: made them feel part of medical school (79%), would utilize resources of support that are available (69%), found their time at medical school enjoyable (84%), were more committed to completing medical school (68%), and felt confident in succeeding in their studies (77%). Table 3 presents students' mean responses following their participation in the peer-mentoring program.

Table 3

Mean Responses Following Students' Participation in the Peer-mentoring Program

Item	Mean	SD
As a result of participating in the COM Team mentoring program		
I feel a part of this school.	3.85	0.72
I feel I am making more use of support available	3.76	0.80
I am finding my time at school enjoyable.	4.08	0.74
I am more committed to completing medical school.	3.94	0.87
I feel confident in succeeding in my studies.	3.94	0.75

For items regarding the impact of peer-mentoring in the first-year experience, the vast majority of students reported positive effects. Similar to the previous report of feeling confident in succeeding in their studies, the majority of students reported that they felt

confident upon participating in the peer-mentoring program. This may have been influenced by working with peers who provided advice regarding their transition to school and the resources they used to be successful. This is consistent with over 70% of students' reporting that they would utilize resources that are available. Furthermore, the interaction with their peers may have fostered a greater commitment to their academic goal of completing medical school. These quantitative findings addressed the central research question related to the impact of the peer-mentoring experience on students' transition into medical school as well as the third research question.

RQ4: Comparison of confidence ratings prior to and after engaging in program. The mean responses of confidence ratings regarding being successful in medical school prior to beginning medical school ($M = 3.75$) and after participating in the COM Team peer-mentoring program ($M = 3.94$) were compared to address Research Question 4. No statistically significant differences were found, $t = -.83$, $p = .4078$. Therefore I was unable to reject the null hypothesis.

These findings suggest that there is no difference in confidence levels prior to starting medical school and after participating in the program. However, there are other potential explanations for these findings. As noted earlier, the majority of students (70%) reported a high level of confidence in succeeding in their studies prior to school. This number might have been impacted by the culture of support that had been presented to them during interviews and in their interactions with students and administrators prior to starting medical school. Given this high level of confidence, it would be difficult to detect increases.

The findings related to the hypothesis testing may suggest that the impact of peer-mentoring may have been more beneficial for some than for others. In addition the high level of initial confidence in their studies may have made the potential difference small. The data collection is retrospective which could also have had an impact on the findings. After successfully completing their first year, their retrospective report of their confidence level may be elevated. Future studies should consider longitudinal assessments with multiple time points, including at least pre and post intervention.

RQ4: Impact of peer-mentoring related to confidence. In Section Four, students were asked to rate each item from 1 (*significantly decreased*) to 5 (*strongly increased*) concerning the impact of peer-mentoring as related to their confidence as a result of participating in the COM Team peer-mentoring program. Ratings ranged from 2 (*decreased*) to 5 (*strongly increased*) related to students' confidence: in succeeding in their studies (56%), about their academic skills (50%), in the subject knowledge (65%), and in using student services (54%). Table 4 presents the impact of peer-mentoring and confidence levels related to academics.

Table 4

Mean Responses Related to Students' Confidence Levels

Item	Mean	SD
As a result of participating in the peer-mentoring program		
My confidence in succeeding in my studies has	3.56	0.70
My confidence about my academic skills has	3.52	0.72
My subject knowledge has…	3.87	0.75
My confidence in using student services has	3.60	0.67

In contrast to the *t* test reported above, the majority of students reported that their confidence in succeeding in their studies had 4 (*increased*) or 2 (*decreased*). The majority of students also reported that their confidence about their academic skills and student services had increased. Given that the mission of the college of medicine is to educate future physicians, two-thirds of students reported a strong increase in subject knowledge as a result of participating in peer mentoring. These findings suggest that the students' awareness of the subject knowledge related to their studies was influenced though the peer-mentoring program. These quantitative findings addressed Research Question 4, related to students' confidence levels after participation in the peer-mentoring program.

RQ5: Impact of peer-mentoring related to students' learning. Data from quantitative analysis revealed that some participants 5 (*strongly agreed*) or 4 (*agreed*) that the program had a positive impact related to students' learning. Ratings ranged from 2 (*disagree*) to 5 (strongly agree) regarding the following statements: peer-mentoring had a positive influence on the way I approached learning (58%), having a peer mentor had been a helpful learning experience (77%), the mentoring experience has helped me to learn independently (52%), and students reported that they expected that their grades would

improve as a result of peer-mentoring (39%). Table 5 presents mean responses related to the impact of peer-mentoring on students' learning.

Table 5

Mean Responses Related to Peer-mentoring on Students' Learning

Item	Mean	SD
Impact of peer-mentoring related to students' learning		
Peer-mentoring has positively influenced the way I approach learning	3.61	0.78
Working with a peer mentor has been a positive learning experience.	3.91	0.77
Peer-mentoring has helped me to learn independently.	3.50	0.86
I feel my grades will improve as a result of peer mentoring.	3.26	0.87

Similar to previously reported positive findings, these results suggest that the majority of students (almost 80%) reported that having a mentor had been a positive learning experience and the majority reported that peer-mentoring has helped them to learn independently. Independent and self-directed learning are critical for those seeking to be a physician. It should be noted that almost 40% of students reported that peer-mentoring has positively impacted their academic record. These findings addressed, Research Question 5, the research question related to the peer-mentoring program affect the students' learning experience. These findings are also consistent with findings from the literature that students in higher education report positive effects from engaging in mentoring experiences.

RQ6: Students' responses related to the value of peer mentoring. Participants' ratings ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) with the following statements: the COM Team program was responsive to my issues (57%), I can relate to my COM Team mentor (77%), I experienced anxiety about adjusting to school (72%), I felt that working with a peer has been useful (81%), I could talk to my COM Team mentor if I

was worried (67%), I felt comfortable working with COM Team mentors (74%), and I felt that I could seek advice from my COM Team mentor about concerns that I would not address with administrators (66%).

Table 6

Mean Responses Related to the Value of Peer Mentoring

Item	Mean	SD
The Value of COM Team peer-mentoring		
COM Team peer-mentoring is responsive to my individual needs.	3.49	0.84
I can relate to my COM Team mentor.	3.82	0.87
Working with another student has been useful.	3.97	0.70
I feel I can talk to my COM Team mentor if I am worried.	3.67	0.89
I feel comfortable working with my COM Team mentors.	3.83	0.80
I can talk to my COM Team mentor about things I would not discuss with a member of staff	3.72	0.90

The results suggest that a significant number of students found that the mentoring program was responsive to their individual needs as new medical students. Perhaps this was the result of the matching ratio between first-year students and mentors which allowed for individualized attention to first-year medical students. The unique attention may have afforded them the opportunity to establish a rapport which resulted in them relating to, feeling comfortable communicating with, and working with a peer mentor. Another finding was that some students reported that they were apprehensive about beginning medical school and some experienced anxiety; having a mentor to talk to if they were worried, allowed a level of support that appeared to be beneficial to them. Over 81% of students' reported that working with a peer had been useful to them as they confirmed the value in working with their peers. The findings addressed the sixth research question related to the value of the mentoring experience.

Further, open ended comments confirmed some of the challenges associated with the COM Team peer-mentoring program. One of the main challenges had been the limited number of pre-matriculation events, the lack of a systematic matching criterion for mentors to mentees; and the absence of large group meetings which would require additional funding for expenses related to meals and related program support. In addition to opportunities for program refinement, these results consistently confirmed that the COM Team positively impacted the students' transition. Based on this fact, the program should be an integral part of transitional support initiatives within the medical school.

Qualitative Findings

Through interviews, eight second year medical students identified numerous concerns about beginning medical school, confirmed multiple elements of support that they perceived as beneficial to their transition to medical school, and described the effect that peer-mentoring had on their academic performance in the first semester of medical school. This section contains representative discussion and comments regarding the research questions and qualitative findings.

The following research questions were addressed with the qualitative data:

1. What were students' concerns about beginning medical school?
2. What supports do students value and perceive as beneficial to their transition to medical school?
3. What effect did peer-mentoring have on students' academic performance in the first semester of medical school?

RQ1: Concerns identified by students. Some of the main concerns that students identified were feeling anxious about making new friends in a social setting. Several students reported experiencing anxiety regarding not having sufficient support as they did in their undergraduate studies. In addition, some expressed concern over having a lack of understanding of the academic demands of medical school. Some described adjustment related challenges in having to adapt to a new way of approaching their academics due to the volume of information in the curriculum. For example, some students never had to study at the level that was required for medical school, some never asked for help from peers, nor had they used tutoring services.

RQ2: Support students valued as beneficial to their transition. In addition to the concerns presented during the interviews, students identified numerous supports that they valued and perceived as beneficial to their transition to medical school. The following four themes emerged which addressed Research Question 2: peer support, camaraderie and sense of community, academic guidance and advice, and confidence in academic abilities.

Theme 1: Peer support. During the interviews, all students described peer support as a primary component that was necessary for them to manage the complexity of the formal medical school curriculum. One student explained, "When I was stressed it helped a lot just talking things over with my mentor and just having a new friend." Another student commented, "medical school is a lot so having someone who's been through it before and you've seen them successfully complete the first year was very helpful." The guidance that peer support gave to first-year students was invaluable. Another student stated, "I listened to the advice that my mentors gave me about things they struggled with which helped me."

The program afforded a mechanism that they could use for peer support from persons who were engaged in the process and had relevant experiences about navigating through the first year. The theme related to peer support addressed the concerns students raised in Research Question 1.

Theme 2: Camaraderie and sense of community. Within the camaraderie and sense of community theme, students described the importance of experiencing a culture of community in medical school. Students consistently described a community that would be conducive for their personal and professional development. The following comments conveyed the students' expectations for a sense of community and the value of peer support that was afforded throughout the first-year experience: "I knew I would have support here; even from personal interviews everyone that I talk to no one was like dismissive. It was obvious that they wanted to see growth in whoever came to the school." In addition another student noted that having a peer mentor equated to feeling like they had a family and stated, "I felt like I was at home at this school. It was a big family and I definitely enjoyed the curriculum. I was told about it on interview day and so I believe this was the best place for me." Interestingly two participants described the importance of having a family at medical school and stated, "I found that this school was more of a family from my interactions with not only other students but also with the members of the Dean's office." Another student stated, "When I came to this medical school there was such a sense of community and family that I didn't get from any of the other schools that I attended." In addition to the sentiments consistent with other comments, several students noted that they valued a sense of community and indicated that, "I have a little family and I think that was a great thing

about the COM Team program." The majority of interviewees addressed their desire of being accepted, which has been noted in literature as critical to students' personal and professional development. The theme related to camaraderie and having a sense of community addressed the concerns students raised in Research Question 1.

Theme 3: Academic guidance and advice. As students embarked upon their medical school studies all identified the guidance and advice that was provided to them through the mentors and confirmed that it was invaluable. They reported that they were able to integrate the advice into their study strategies. Six students provided details about the second-year students' abilities to provide consistent, relevant guidance that were contextual and useful in their studies. Several conveyed some detail of those discussions during the interviews. Relevant advice related to understanding expectations related to school was consistently noted as valuable information. A student commented that "it helped to have guidance that you would not normally have already. You did not have to go find somebody that could help you -they've already created a network in the structure of the program." The availability and accessibility of mentors were noted and it was stated that "it was helpful to get advice from them and they were just there." Students indicated that they integrated advice into their study strategies and used the relevant guidance provided by mentors. These factors impacted the students' academic performance in the first semester of medical school. The theme related to having access to academic guidance and advice addressed the concerns students raised in Research Question 1.

Theme 4: Confidence in academic abilities. In relation to gaining confidence in academic abilities, a number of students noted that working with a peer created

opportunities to speak with someone who could relate to the medical school experience. Six provided detail of those discussions during the interviews and one noted that, "it was helpful to have a COM Team mentor because they would give us like a breakdown of what we should focus on while studying." The tangible and relevant information that mentors program was consistently noted as valuable as well. Another student noted that, "our mentors were giving extra advice and encouragement that I wouldn't have gotten from other people. This helped me to believe and have confidence in myself." The mentoring relationships fostered a sense of confidence because they had peers who availed themselves and provided continuous support which resulted in an increase in their confidence. Another student noted that "we had small group meetings and during this time there's a lot of information that you're getting so you're not sure what all you really need but they did give so much information." Another stated, "On the first day of school they sent small little treats to say good luck on your first day. We would see them later and they would just keep giving encouragement and advice and this helped me to believe in myself." The theme related to confidence in academic abilities addressed Research Question 2.

RQ3: The effects peer-mentoring had on students' academic performance.

Students identified several ways peer-mentoring had an impact on their academic performance in the first semester of school. Some students reported that they implemented different study strategies as a result of the relevant guidance that they received through academic advising and used the recommended learning resources. For example, one student said, "It was helpful to have a COM Team mentor because they would give us like a breakdown of what we should focus on while studying and then they were giving extra

advice that I wouldn't have heard from other people." Students indicated that they were able to organize their study time to focus on the most relevant content. Students reported that these factors positively impacted their academic performance during the first semester of medical school.

Recommendations. From the qualitative data, the following recommendations for program refinement included: increase opportunities for individual mentoring instead of group mentoring, increase lunch time meetings, implement plans for initial meetings with new students prior to year one orientation, develop a systematic document for study tips, incorporate more group activities throughout the academic year, enhance the selection process for mentors with new students that have similar interests, and develop a curriculum for a training experience for mentors to help new students prepare to meet the expectations of a physician. In addition to the recommendations for refinement, all students indicated that having a peer mentor was a positive experience and would recommend the mentoring program to future students. Hence it would seem that the program has been successful in making a positive impact in key areas of enhancing new medical students' feelings of acceptance and experiencing confidence in succeeding in school. These findings were also confirmed in the results of the quantitative data regarding students' expectations before matriculation and after their participation in the mentoring experience.

Data Triangulation

Data triangulation, commonly used in mixed-methods research, is the process of studying a problem at the interpretation stage of a study, when both data sets have been analyzed and to acquire a clear understanding of the findings (O'Cathain, Murphy, &

Nicholl, 2010). To aid in comparing data, a table was created to depict findings from quantitative and qualitative results. Illustrated in Table 7 are the key findings from quantitative and qualitative data.

Table 7

Key Findings from Quantitative and Qualitative Data

Quantitative findings	Qualitative findings
Felt more committed to completing school	Academic advice and guidance
Felt more likely to use resources	Peer support
Increased confidence in succeeding	Sense of camaraderie
Felt they could relate their mentor	Confidence in academic abilities
Mentoring positively influenced learning	

To ensure accuracy, credibility, and validity, a constant comparative approach was used. Support for triangulation was found for four constructs in the quantitative and qualitative findings as depicted in Figure 1.

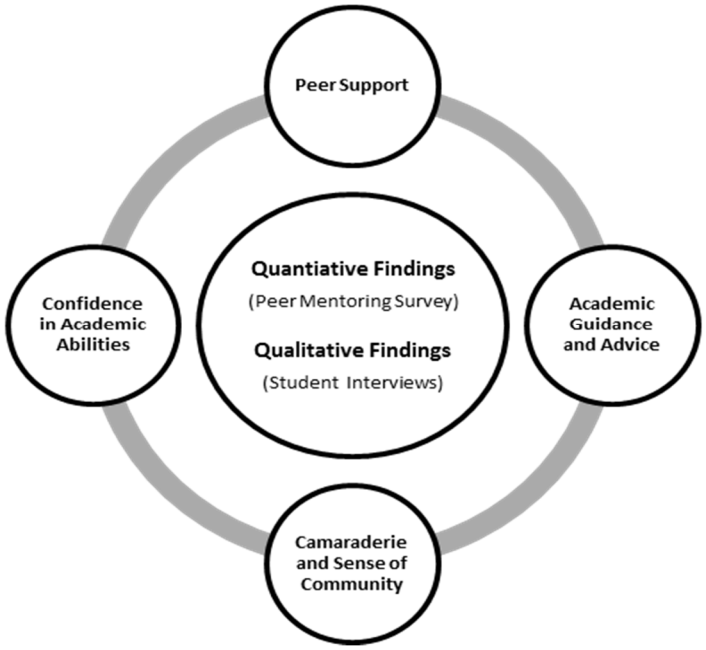

Figure 1. Results of the convergent parallel approach.

Following the data triangulation process, convergence of the four data points were confirmed. For example, in both the quantitative and qualitative results, students reported that peer support was a significant benefit to their transition to medical school; having a second year student provide guidance was encouraging and reassuring; working with their peers impacted their confidence in succeeding in their studies; and because of the rigor of the medical school curriculum, having a sense of community that fostered camaraderie was a factor in selecting to attend this medical school.

Consistent with research that social isolation is a risk factor for student attrition in medical school (Maher et al., 2013), the qualitative findings confirmed that students were concerned and reported that having a sense of community was an important consideration as they transitioned into school. Dyrbye et al. (2011) noted that medical school distress was associated with burnout, emotional exhaustion, depersonalization, depression, and high

levels of stress and these factors are closely associated with suicidal ideation and an increase in dropout rates. In addition, Dyrbye, et al. (2011) also noted that the recommendation of strong student wellness and support programs for all students which is an accreditation standard for U.S. medical schools. The findings of the study suggest that the program offers the type of support that is recommended for all medical schools and students confirm that the experience was valuable to their first-year experience.

Conclusion

The findings identified specific ways collaborative support was useful to new students and the resources that were used as they transitioned into a new academic environment. Other elements of the findings included the timing of when to implement a mentoring experience and considerations that should be included in a peer-mentoring experience such as the small group interaction that the COM Team program afforded. The team-based approach is integrated into the medical school curriculum. The small group approach is used in the Fundamentals of Patient Care course and is reflected in the delivery of clinical care to patients in healthcare delivery models. First-year students have the benefit of establishing relationships through the COM Team peer-mentoring program which fosters opportunities to learn and develop necessary skills to become a physician.

This section contained an overview of the participatory-oriented evaluation design with descriptions of the research setting, quantitative and qualitative sample, procedures to access participants, measures to ensure protection of participants' rights, and limitations of the evaluation. Data collection, data analyses, quantitative and qualitative findings were

also presented with concluding discussion related to the methodology related to this program evaluation.

Section 3 will consist of discussion about the project study that will include the rationale for selecting a program evaluation approach. The section also will include a review of current literature, a plan for implementation with discussion of resources and support, potential challenges, and detail related to the roles and responsibilities of stakeholders. The section will end with a discussion related to the implications of the project regarding social change with concluding comments.

Section 3: The Project

Introduction

The COM Team program is a peer support and advisement program implemented throughout the first-year experience. The program is a catalyst to establish personal and professional bonds that new students can use to be successful in their medical school studies. Using a sequential mixed-methods approach, the intentional focus of this research project was to better understand the effect of peer-mentoring on the first-year experience and to identify perceived benefits and opportunities for refinement through the use of a program evaluation.

This section contains a comprehensive overview of the project study, which includes the description and goals of the study; the rationale; a review of current literature; implementation plans with considerations regarding the potential resources and support, potential barriers, roles, and responsibilities of stakeholders; and a discussion about the program evaluation with attention to the implications related to social change.

Description and Goals

Graham, Woodfield, and Harrison (2013) suggested that requirements are increasing from institutions and accreditation entities regarding a systematic evaluation process to assess the quality of programs and learning experiences to facilitate consistency in continuous improvement plans. Using a participatory-oriented program evaluation design, this study addressed the need for an evaluation of a peer-mentoring program at a medical school in the southeastern United States. The project was the first formal evaluation of a peer-mentoring program

The findings of this program evaluation led to an evaluation report that identified the strengths and recommendations for program refinement. The report consisted of an executive summary and findings related to the specific evaluation activity (see Appendix A). The report included quantitative and qualitative findings that noted that the peer support and interpersonal benefits of peer mentoring, including the creation of a sense of belonging, confidence in succeeding in their studies, and working with a peer mentor have been confirmed as strengths of the COM Team program. Further, the peer-mentoring experience influenced the way students approached learning and had been a positive learning experience. Students also provided the following recommendations for program refinement that included: individual mentoring instead of group mentoring; a professional development training session for mentors; a plan for a wellness component; initiate meeting with new students prior to the beginning of school; increase group activities; and a document that systematically outlines study tips to allow all new students to receive consistent information about strategies for academic success.

Rationale

The implementation of an evaluation design was the best approach as this program evaluation represents the first empirical examination of outcomes of the COM Team program that is for first-year medical students who are considered stakeholders in the institution. No formal evaluation of the program has ever been conducted. The findings of this study served as the basis for continued evaluation of the program's value in the first-year experience. An evaluation of the program is essential because assessment guides improvement of practice and can lead to program refinement (Creswell, 2013; Spaulding,

2014). Brandon and Fukunaga (2013) and Graham et al. (2013) supported the premise that involving stakeholders is a key aspect in effective program evaluations because of the depth and breadth that the data yields.

Review of Literature

For literature review, I examined empirical research that supports the use of program evaluation methodologies to assess the service learning component of mentoring, the institutional benefits program evaluation affords, literature related to the use of program evaluations in medical education and the feasibility of using evaluations for program refinement. In addition to using the Walden University Library, the medical school Library, ERIC, Scopus, Google Scholar, and PubMed, searches were conducted to identify recent literature 2010-2015) using terms *program evaluations of peer-mentoring in higher education*, *program evaluation for peer-mentoring for medical students*, *evaluation methods of peer-mentoring in medical schools*, *evaluation protocols for peer-mentoring in undergraduate medical education*, and *evaluation of peer-mentoring in the first-year experience of medical school*.

A review of the literature confirmed that little research has been published in relation to program evaluation methodologies for peer-mentoring in medical education. However, there are limited studies that used program evaluation methods and a few of the studies addressed the components of peer-mentoring for undergraduate medical education that has implications for this work. Because not much research has been conducted in the area of program evaluation methodologies for peer mentoring, I sought to evaluate the COM Team peer-mentoring program to assess its impact in the first-year experience. Upon

review of studies that used program evaluation methodologies, all confirmed that mentoring is a powerful educational mechanism that appears to be effective in relation to the professional and personal development of medical students (Bringle, Studer, Wilson, Clayton, & Steinberg, 2011; Hardeman et al., 2015; Kronick & Cunningham, 2013; Marshall, Lawrence, Williams & Peugh, 2015; Mitchell, Eby, and Ragins, 2015; Waterman, 2014). As a means of providing support to students, Yates (2011) and Passi (2014) suggested that simplified academic and non-academic support mechanisms could help to proactively identify students who struggle with psychological distress which is pervasive among medical students (Dyrbye et al., 2011). Other recommendations include longitudinal research that focus on comparing outcomes related to the effectiveness of formal mentoring programs, satisfaction of mentors with frequency, and duration of meetings, challenges and probable implications increased funding, use of social media to support administrative goals.

Mentoring as Service Learning

Williams (2014), in an experimental approach similar to peer mentoring, confirmed that service learning is beneficial to others, is valuable in addressing curricular content, and may foster skills that are beneficial to students' professional development. The literature also suggest that mentoring is becoming associated as a service learning experience and contributes to positive outcomes related to socialization, role modeling, perceived similarity, civic engagement, retention, career planning, and professional development (Bringle et al., 2011; Kronick & Cunningham, 2013; Marshall et al., 2015; Waterman, 2014).

Using a program evaluation approach, Marshall et al. (2015) sought to determine if peer-mentoring was related to emotional and social outcomes for females who served in a mentoring capacity in a service-learning mentoring experience. Multiple studies noted that social support and integration into a new academic environment are two of the most appropriate goals for peer-mentoring programs and support the premise that mentoring is an effective educational tool that should be a standard of basic medical education to ensure retention and resilience through social engagement (Colvin &Ashman, 2010; Passi, 2014; Pinilla, Pander, von der Borch, Fischer, & Dimitriadis, 2015).

Mitchell et al. (2015) investigated the outcomes of perceived similarity in a study that assessed associations between mentors' abilities to serve as role models. Their findings suggest that the mentoring relationship may be influenced by relational self-construct which influences ones' perception of traits and abilities to relate to others. Marshall et al. (2015) and Mitchell et al. indicated that relating to others is central to mentoring relationships because role modeling is the result of many mentoring experiences. As the mentors display or discuss behaviors that should be emulated in their mentees' personal growth this leads to relational identification and influence, commitments to organizations, and career paths. Structuring activities that allow relationships to be formed and incorporating personality inventories could help with career progression. Eby et al. (2013) illuminated the processes through which perceived similarities may affect mentoring outcomes. Pinilla et al. (2015) suggested that institutions should provide additional opportunities to effectively communicate and train mentors and Eby et al. confirm that mentees who identify with their mentors report an increase in positive outcomes from their

relationships than those who do not have these relational factors. It was consistently confirmed that service learning in the form of mentoring is a powerful educational mechanism that appears to be effective in relation to the professional and personal development of medical students.

Program Evaluation in Medical Education

Brandon and Fukunaga (2013) noted that studies which used a participatory or stakeholder involved approach are limited despite the fact that research on evaluation is expanding and collaboration is key when implementing program evaluations (King & Stevahn, 2015). Most studies include narratives and not methodological research designs (Brandon & Fukunaga, 2013).

Pinilla et al. (2015) conducted a program evaluation of a large-scale 5-year mentoring experience for German medical students and concluded that a two-tiered program that involves both students and faculty mentors is an effective method for students' professional development and support. Volunteer participation, formal recognition for mentoring activities, an on-line mechanism for selecting mentors, intrinsic motivation, and a collaborative approach with key stakeholders were recommendations for formal mentoring programs. Incorporating technology, website development, and use of social media to enhance the mentoring experience were other recommendations. In alignment with the recommendation of incorporating technology, Hall and Jaugietis (2011) also noted that a website can be an effective mechanism for discussions related to advice, guidance, support, and information regarding campus and community resources. Additionally Lord et al. (2012) conducted a program evaluation of a group mentoring experience for faculty and

confirmed benefits of group participation such as increased professional collaborations, career satisfaction, professional collaboration, increased access to mentorship of scholarly resources, accountability, and opportunities for diverse dialogue.

Participants in mentoring experiences prefer to relate to their mentor (Pinilla et al., 2015). Blake-Beard, Bayne, Crosby and Muller (2011) supported this premise and also confirmed that students preferred having a mentor of the same race and gender. These factors were especially true for women and students of color and additional research should be implemented related to matching algorithms that include race, gender, and other attributes (Blake-Beard et al., 2011). Christie (2014) confirmed that providing diverse or differential mentorship options may assist medical schools in meeting the unique needs of students and provide opportunities for inclusion for all participants. Diverse skills such as psychological counseling, career advising and peer-mentoring are necessary for differential mentoring programs (Allen, 2014; Christie, 2014). Kurré, Bullinger, Petersen-Ewert, and Guse (2012) conducted an evaluation of a medical school in Germany using a cross-sectional survey. The study assessed a support program that was designed for an individual counseling service in the form of mentoring. It was recommended to establish differential mentoring experiences that consisted of three parts tailored to students´ needs for basic social support, psychological counseling for students struggling with depression or stress, and a mentoring program for excellent students who would be interested in research and career guidance (Kurré et al., 2012). Hall and Jaugietis (2011) noted that determining resources and identifying student needs were important factors in the establishment of innovative mentoring programs at large medical schools.

Christie (2014) and Hall and Jaugietis (2011) also supported a differential approach in mentoring designs because students' needs vary significantly. Thomas (2012) stated it is an important responsibility of the administration of higher education institutions to ensure that new students receive appropriate guidance and direction because "access without support is not opportunity" (Thomas, p. 4). Further the use of technological innovation could foster support and social engagement among students. Pinilla et al. (2015) noted that the use of social media might be useful in enhancing the implementation of mentoring activities and provide additional opportunities for the effect of mentoring of medical students.

Support for program evaluations is essential in mentoring but there are known challenges related to implementing such experiences. Hall and Jaugietis (2011) identified such as stigmatization, scheduling conflicts, funding, administrative oversight, and engaged program management were challenges that could impede the successful implementation of differential mentoring in medical schools. Similar challenges as noted above were identified by Lord et al. (2012). Despite the challenges, Kurré et al. (2012) confirmed that there is a strong need for formal mentoring programs in medical schools with empirical evidence to assess the impact of the programs. However academic success or social support cannot be the only factors that are included when assessing mentoring experiences. Because there is a lack of critical investigation methods into peer-mentoring approaches, program evaluation methods to review the effectiveness of different program components and to determine the effects of mentoring on both career choices and career satisfaction were consistently recommended (Christie, 2014; Hall & Jaugietis, 2011). With regard to

implementing program evaluations in medical education, Brandon and Fukunaga (2013) and Pinilla et al. (2015) suggested that mentoring experiences should be integrated into a longitudinal research efforts to better assess the long-term effects of mentoring in relation to individualized career directions and professional networking opportunities (Christie, 2014).

The Feasibility of Program Evaluations

Allen et al. (2014) noted that developing an institutional mentoring program is a shift in paradigm. Establishing such experiences often requires significant periods of adjustment because of internal factors related to the lack of infrastructure and support. Allen et al. found that dedicated leaders are essential to the success of such programs and attention to program management detail, use of technology, consistent evaluation methods, and engagement of stakeholders are necessary for program success. Further, consistent assessments to determine the direct impact related to university resources could be used to identify outcomes related to student retention and their overall success (Allen et al., 2014; Maher et al., 2013).

Royse, Thyer, and Padgett (2015) found that human service professionals are interested in determining if their program or services help the population they serve and find evaluating services to be a scientific, sequential, logical, and credible approach to evaluating programs. They also noted that program evaluations allow for a critical analysis of services provided by an academic institution or entity and allow efficiency that may be beneficial as the most program leaders advocate for clients and for funding support. With

the importance of ensuring stability of funding sources, the use of evaluations to determine the effectiveness and efficiency is imperative (Allen et al., 2014; Royse et al., 2015).

The participatory-oriented evaluation approach enhances conceptual clarity as it is based on the feedback from those who are participants and those on the front lines within an institution or organization, who are engaged in the evaluation processes (Cousins & Chouinard, 2012; Fetterman, Rodríguez-Campos, Wandersman, & O'Sullivan, 2014). Royse et al. (2015) confirmed that such program evaluations are invaluable to organizations as they are designed to assess processes, procedures and outcomes and can determine if programs are fulfilling their intended purpose. A participatory-oriented evaluation approach is often used to review summative evaluation data that were collected at the end of the experience to measure outcomes (Allen et al., 2014). What distinguishes this approach is the enlistment of key stakeholders in the collaborative process as the design also draws from first-hand experiences and emphasizes the importance of employing participants to be actively engaged in the evaluation process (Fetterman et al., 2014; Hogan, 2010; Yarbrough et al., 2011).

Hardeman et al. (2015) noted that one of the most stressful times in medical school is the preclinical years which consist of the first and second year of medical school. Therefore a research approach to allow participants who are medical students, who experience mental illnesses and are less likely to seek appropriate help, may help identify factors to identify ways of activating support which is an essential part of the social integration process (Dyrbye & Shanafelt, 2016; Pinilla et al., 2015). Grant, Rix, Winter, Mattick, and Jones (2015) found that strategies for support are prevalent in medical schools

but medical students often initiate contact with a peer tutor or faculty member if there are concerns related to medical student distress. It was recommended that addressing such issues should include proactive intervention and referrals to prevent an escalation of the issue (Dyrbye et al., 2011; Grant et al., 2015; Real, Zackoff, Davidson, & Yakes, 2015).

Conclusion

With a focus on participatory involved approaches, the literature review consisted of studies related to the use of program evaluations in higher educational peer-mentoring experiences. The importance of incorporating diversity, service learning, and differential approaches in mentoring designs were noted in literature. Saturation was reached when themes emerged which confirmed the value of program evaluations, the need for considerations for diversity related options, and the need for assessments and evaluations to determine the effectiveness of mentoring programs. Other themes related to a lack of critical investigation methods and the importance of consistent critical assessments. In addition, the feasibility and valuable data that program evaluations can yield were also consistently noted in the literature.

Implementation

The study involved participants of the program who provided detail about program strengths and they also provided the following recommendations for changes: increase opportunities for individual mentoring instead of group mentoring; increase the number of lunch time meetings; implement plans for initial meetings with new students prior to orientation; develop a systematic document for study tips; incorporate more group mentoring activities throughout the academic year; enhance the selection process for mentors with new students that have similar interests; develop a wellness program component; and develop a curriculum for a professional development training experience for mentors to help new students gain skills and prepare to meet the broad expectations of a physician.

In the fall of the next academic year the evaluation report will be disseminated to stakeholders who are the senior administrators, students, and staff. The PowerPoint presentation that consists of the evaluation findings will be given at the annual student affairs retreat. For some recommendations, collaboration with curriculum leaders will be needed as they could provide oversight related to the development of training manuals. Student leaders could also be empowered to develop strategies related to implementing some of the recommendations related to students. This involvement could foster a longitudinal, engaged collaboration throughout students' enrollment as they can be valuable contributors who could positively influence the institutional culture.

Potential Resources and Existing Supports

In relation to financial resources, the program receives funding from the college of medicine dean's office. Financial resources and human resources provided through the manager of student affairs position are key resources. The manager will provide administrative oversight in relation to program management. The selection and training of mentors would require collaboration from the student affairs staff members who also provide program support as needed. The existing support also consists of second year medical students who are selected annually and trained to serve as mentors. There is no cost for the use of rooms on campus for group meetings and training. There is also no cost for the use of audiovisual equipment. No printing costs will be incurred as the evaluation report will be distributed via email to student affairs staff members.

Potential Barriers

Potential barriers are financial limitations that would prevent the implementation of all of the recommendations for program refinement such as increasing the number of lunch time meetings; implementing initial meetings with new students prior to orientation; developing a systematic document for study tips; and incorporating more group mentoring activities throughout the academic year. Further some barriers include scheduling conflicts as students' schedules differ on many days.

Proposal for Implementation and Timetable

Recommendations for program refinement were included in the evaluation report. The implementation of a plan for these areas for refinement would depend upon administrative approval from senior leaders, available resources, and appropriate

institutional constructs that would allow recommendations to be reviewed and implemented systematically. A timeline to implement the recommendations will be developed for the 2017-2018 academic year. This would allow one academic year which will be sufficient time for a proposed budget with necessary increases to be approved, an implementation strategy to be developed, reviewed and approved by senior leaders.

Roles and Responsibilities of Student and Others

The recommendations from the report would be discussed with COM Team student leaders and key administrators who could develop a task force who could be charged with prioritizing the recommendations, developing budgets, and implementing strategic plans to ensure that opportunities for improvement are implemented during the next academic year.

Project Evaluation

The participatory-oriented program evaluation design allows researchers to examine programs through the lens of participants or creators of the program, to assess program outcomes (Spaulding, 2014). The local problem is the lack of an evaluation of the mentoring program and the purpose of the study was to evaluate the mentoring experience in a local setting and develop recommendations to improve the program. The study will foster social change as the results will be used to refine components of the mentoring experience that will impact the learning environment for first-year students. Following the implementation of the recommendations for program refinement, to determine if the changes are effective, further evaluations will be implemented. The implantation of an annual program evaluation will be a continuous process.

Implications Including Social Change

Local Community

This project addressed the needs of learners in a number of ways. A significant number of students identified recommendations for program refinement and affirmed that the program was useful in helping them gain a sense of confidence that they could succeed in school. Some students also addressed their desire for a sense of belonging, which was critical to personal and professional development. Further, the local community of learners received social support which for many positively impacted their transition into medical school. This is consistent with research that social isolation is a risk factor for student attrition in medical school (Maher et al., 2013). The findings also confirmed that students were concerned about their transition and reported that having a sense of community was important to them as they transitioned into school. Thomas (2012) noted that mentoring could be used to address factors that influence students' decision to leave school, such as feeling isolated and academic difficulties. Another important implication for local stakeholders was that students also reported that working with a peer mentor was a positive learning experience and contributed to their ability to relate to their mentor in the medical school experience.

Far-Reaching

The far-reaching implications can be realized in the participants' abilities to learn and grow as a result of the mentoring they received. Maher et al. (2013) suggested that the reasons why students leave school are multifactorial and identified emotional distress, academic difficulty, social isolation, depression and anxiety, and adjustment challenges as

commonly identified contributing factors that affect attrition. Once students become mentors, they will have opportunities to influence the professional development of others. Student physicians must complete residency training and they can share with others the information about the importance of support that they received as a result of their participation in the program. Kenedy and Skipper (2012) indicated that peer support programs can validate an institution's commitment to student engagement and can demonstrate a proactive management of student transition. Changing the culture of an institution can have far reaching implications because students complete institutional and national surveys that are used in determining national ranking designations for institutions.

Conclusion

Addressing the needs of learners is important in relation to the transition and retention of students. Recommendations for program refinement identified in this program evaluation may help to improve the program and could foster retention initiatives. The reciprocal process of mentoring can have far-reaching impact if participants become mentors and help students address the underlying challenges and identify viable solutions to promote academic wellness.

This section consisted of an overview of the project study that included the purpose of the evaluation, the rationale, and the review of literature that included scholarly works related to mentoring in service learning, program evaluations in medical education, and the feasibility of incorporating program evaluations in mentoring experiences. The section also included implications of the study and how the findings could be used to influence social change in the local community and beyond.

In Section 4, reflections regarding the strengths of the project study will be presented with recommendations for the noted limitations. Detail regarding scholarship and the project development will be presented with discussion concerning leadership possibilities and opportunities for social change. Analyses concerning my scholarly development and growth as a practitioner and project developer will be addressed. Applications and future directions for this project study will be presented with concluding comments about the effectiveness of mentoring in higher education.

Section 4: Reflections and Conclusions

Introduction

The project was the first formal evaluation of a peer-mentoring program for first-year medical students. The intentional focus of this project study was to better understand the effectiveness of peer-mentoring in the first-year experience. The findings of this study led to the development of an evaluation report that identified the strengths and weakness of the mentoring experience. I used a sequential mixed-methods approach that included both qualitative and quantitative data that yielded measurable detail about the attributes and opportunities for program refinement.

This section contains reflections regarding the strengths of the project study, recommendations regarding the limitations, discussion related to scholarship, and the project development with attention to the learning opportunities related to leadership and change. I present analyses regarding my growth as a scholar, practitioner, and project developer with discussion regarding the applications, and future directions regarding this research effort. This section will conclude with comments regarding the positive effect that mentoring has in higher education.

Project Strengths

As evidenced by the quantitative and qualitative findings, students identified social support, camaraderie, and interpersonal benefits of peer mentoring, including the creation of a sense of belonging, increased students' confidence in succeeding in their studies, and working with a peer mentor as strengths of the program. This study had a culturally diverse sample. Increasing diversity in the physician workforce by the AAMC is a

significant priority in the medical education. In addition to recruiting students from diverse backgrounds, providing mentorship to ensure retention and academic success is an accreditation requirement for medical schools. The diversity of the present sample helped to make the sample generalizable to diverse medical student populations.

Recommendations for Remediation of Limitations

Although no significant difference was found between students' self-reported perceptions of confidence in succeeding in their studies prior to beginning medical school and after engaging in the peer-mentoring program, the majority of the quantitative and qualitative data revealed that students rated the program as beneficial in numerous areas, including having had a positive effect on their confidence in succeeding in medical school. The discrepancy may be due to an insufficient level of power to be able to detect differences between confidence level prior to the program and after the program, which is a weakness of the present. In addition, the fact that no differences were found may also be due to students reporting a relatively high level of confidence prior to starting the program. This may or may not reflect an accurate assessment of their confidence, given that this was a retrospective report, another weakness of the study.

Findings from the program evaluation led to several project directions, such as an evaluation report that identifies the strengths and opportunities for refinement of the program. As administrators and students are key stakeholders, they would likely be interested in establishing strategies to address the recommendations that will enhance the mentoring experience. Students recommended that individual mentoring instead of group mentoring become an option; a professional development training session for mentors be

incorporated in the program; a plan for a wellness component; initiate meeting with new students prior to the beginning of school; increase group activities; and a document that systematically outline study tips to allow all students to receive consistent information about strategies for academic success.

Scholarship

As a result of embarking on the doctor of education degree at Walden University, I have had significant professional growth opportunities. Working in an online collaborative team was a new experience. Working in groups fostered a strong personal engagement in my learning processes, afforded a supportive network, and created opportunities for me to establish professional rapport with colleagues from different parts of the world who had similar goals.

Prior to my doctoral studies, I did not know about the literature that was relevant to peer-mentoring in higher education. The literature revealed core benefits of mentorship that add value to my professional growth and understanding. I learned how to contextualize the current research literature in my research project and understood how it contributes to the scholarly body of knowledge. Although I always recognize the importance of evaluation, this project allowed me an opportunity to learn how to execute an evaluation, which is a skill set I will continue to apply in my professional work.

Project Development and Evaluation

In relation to project development, I learned the importance of searching the literature prior to developing research efforts. Identifying the existing mentoring program for this study was the best option I could have chosen as my professional goal is to help

students be successful. Establishing a collaborative network to assist with the implementation of this research effort was essential in the development of the project. Collaborating with seasoned researchers allowed for professional mentoring and accountability. I was also able to build a network of academic scholars at the Walden University who helped me to develop a solid research approach. Further, the research findings helped me to identify strengths of the program and opportunities to foster change.

Leadership and Change

The development of this project was rooted in my quest to identify tangible ways to help medical students in their transition to school. The academic support that is offered through the faculty advising measures at my institution was not enough to address many issues related to retention. I was advised by my colleagues at Walden University to follow my passion when identifying a topic and developing the project study. Working with medical students and observing the challenges that are present in the form of academic difficulties, emotional distress, and feelings of isolation helped me to better understand the necessities of resources for new students. The project allowed opportunities for me to identify an instrument that is useful in assessing peer-mentoring programs in higher education. Throughout this experience I fostered a greater understanding of the importance of implementing a formal evaluation process for the program, which will now be implemented on an annual basis.

Analysis of Self as Scholar

Through online group dialogue at Walden, there were numerous opportunities for reflective discovery with my peers, teaching faculty, and my doctoral committee. Given the

autonomy for reflection, critical thinking skills were gained from those experiences with group facilitation. This skill set was strengthened and solidified as a result of these learning experiences. Further, at Walden University, the importance of learning the protocols of investigative inquiry, developing research questions, managing the process of data collection and data analysis, and presenting research findings were fostered throughout training at Walden. Considerations of ethical standards in research and adhering to IRB protocols fostered a greater understanding regarding the gravity of developing research while ensuring that research integrity is maintained in the process. Further, the Walden University's Higher Education and Adult Learning (HEAL) curriculum equipped me with a stronger understanding of the importance of focusing on action research that could be used to inspire social change on the local, national, and global levels. The results of the evaluation will likely lead to opportunities for publications, and scholarly presentations at local, regional, and national medical education conferences.

Analysis of Self as Practitioner

As a practitioner, the development of this project was rooted in my quest to identify tangible methods to help medical students in their transition to school. The academic support that is offered through the faculty advising measures at my institution was not enough to address many issues related to retention. Therefore, I was advised by my colleagues at Walden to follow my passion when developing the project study. Identifying the existing mentoring program that has never been formally evaluated was the best option I could have chosen as my professional goal is to help students be successful. I learned the core principles of learning about problems, systemically developing research that yields

findings to improve social constructs, and presenting data in scholarly dialogue, presentations, and publications. I am committed to seeking new learning opportunities that will build my knowledge as an academic leader in the area of student affairs.

Analysis of Self as Project Developer

The process of developing the project allowed opportunities for me to identity an instrument that is valuable for assessing the effectiveness of peer-mentoring in higher education. I was also able to build a network of academic scholars at Walden University and at my institution who helped me to develop a solid research approach. Further, the research findings were beneficial in identifying opportunities to enhance the experience and for confirming the strengths of the program. Through this experience, I garnered a greater understanding of the importance of implementing a formal evaluation process for the program which will be implemented on an annual basis.

Reflection on the Importance of the Work

This study could also be used in response to the call for further investigation into the components of peer-mentoring programs that are useful in helping institutions achieve their educational goals. In completing this evaluation, insight into the relationships between structured support, peer advisement and guidance, and a culture of camaraderie was gained. Further recommendations to enhance the program emerged through open-ended comments and in the qualitative data. Given the students' expressed limited awareness of the expectations of medical school, engaged dialogue could support efforts toward improving outcomes related to the academic success and professional development of student physicians.

The Project's Potential Impact on Social Change

As new medical students benefit from mentors and as they create their professional identity as a future physician (Andrews & Clark, 2011; Bean et al., 2014; Cutting & Saks, 2012), consideration of the recommendations to refine the program activities related to social integration may enhance team based educational experiences. Some students suggested a professional development training experience for mentors to help new students gain skills to prepare to meet the broad expectations of a physician. Specialized training experiences regarding how to interview difficult patients and how to manage the volume of clinical responsibilities would be relevant to students' professional growth and development.

Dickins et al. (2013) confirmed that a collaborative learning environment also aids in student support and retention. Further, the implications for positive social change include increased retention for first-year medical students through guided facilitated discussion to present positive coping strategies and ways to effectively manage professional responsibilities. Increased retention impacts social change and the culture and reputation of an institution. The findings could be used to identify recommendations for changes to enhance outcomes in the local educational setting. Additionally, this study will add to the body of scholarly research related to mentoring of new medical students. The mentoring experience allows relationships to be formed that could lead to the reduction of stress in a new environment. The findings and recommendations that would be used in the presentation could help a medical school initiate or develop their mentoring experience to support the needs of their students and their institutional standards.

Implications, Applications, and Directions for Future Research

There is limited research related to approaches on how to structure assessments of first-year peer-mentoring experiences in higher education. Some scholars presented recommendations for the implementation of consistent, longitudinal assessment and evaluation protocols for mentoring programs (Bean et al., 2014; Brandon &Fukunaga, 2013; Hall & Jaugietis, 2011; Pinilla et al., 2015). Therefore, future studies related to the COM Team program could be designed to assess confidence levels prior to engaging in the peer-mentoring program and upon engaging in or completing the mentoring program using quantitative methods and a longitudinal design. Also as there was no control group that allowed an assessment of students who did participate in the mentoring program and a comparison of those who did not, this would be an important area for future research. Given the high ratings reported by students, it appears that the quantitative and qualitative findings provide preliminary support for the usefulness of peer-mentoring programs for new students in medical schools.

Conclusion

"Lift as you climb" is an African proverb that embodies the concept of mentoring. The act of lifting and helping another demonstrates the critical importance of mentorship. The findings in this study lend support to this proverb as the data from quantitative and qualitative analysis confirmed that the mechanisms of support had made a positive impact in the lives of students in relation to having peer support, building camaraderie, and receiving academic guidance. These elements fostered their confidence in succeeding in their studies and completing medical school. Students also reported an increase in their

academic skills related to their medical education. In addition a number of students reported an increase in their interest in using student support services.

The phenomenon of mentoring involves peers who are reaching out with the goal of extending support to others in similar situations. The reciprocal process often results in empowerment and guidance that foster the success of another. The opportunities for positive social change include increased retention for first-year medical students through social support, facilitated discussions to present positive coping strategies, and practices to effectively manage professional responsibilities. Some of the goals of peer-mentoring are to promote professional develop and to enhance retention. Increased retention impacts social change and the culture and reputation of an institution. When one person connects to another with the goal of providing engaged support, many lives can be impacted and positive social change will be a continuum.

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Appendix A: Evaluation Report

Peer-mentoring in the First-year Experience
An Evaluation of the COM Team Peer-mentoring Program

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Executive Summary

This report provides findings from the program evaluation of the COM Team peer-mentoring program. The purpose of the COM Team mentoring program is to provide general guidance and support to first-year medical students, promote their personal and professional development, and improve academic performance to enhance retention.

The purpose of the evaluation was to examine whether the peer-mentoring experience was perceived as helpful to new students and confirm if the program can be improved. No formal evaluation of the program has ever been conducted. A mixed-method data collection process followed a sequential process that included the administration of a quantitative pre-established instrument that consisted of a series of attitudinal questions associated with the objectives of the mentoring experience. This report includes the background and purpose of the program, the evaluation methods and results, and conclusions and recommendations.

Three primary data sources were used as a basis for this report:

- A survey of second year students who participated in the program during the 2014-2015 academic year;

- Student interviews were conducted from students who participated in the COM Team program and were used to evaluate students' opinions about the program; and

- Open ended comments from the quantitative survey that were submitted by students.

Data from the quantitative and qualitative findings were also used to compare the perceptions and recommendations from participants that will be used in future plans to refine the mentoring experience.

A primary concern is that medical students experience a myriad of challenges related to their transition to school and this could lead to the deterioration in their emotional wellbeing (Brazeau et al., 2014). Learning how to balance the rigorous medical school curriculum, managing academic requirements, and being accountable to professional expectations of a new environment are just a few of the challenges medical students face (Brennan, McGrady, Lynch, & Whearty, 2010). Drusin et al. (2013) asserted that medical students navigate through a new professional culture with both excitement and anxiety and schools have traditionally offered both formal and informal advising systems. Many of these expectations are difficult for new students and even exceptional students may wonder how to navigate through the first-year experience successfully (Kenedy & Skipper, 2012). While little can be done to prepare medical students for the vast expectations of a new academic environment, some medical schools, seeing a need to provide guidance to a new cohort of students have established mentoring programs (Bean, Lucas, & Hyers, 2014). Socialization of new students should be an institutional goal (Fullick, Smith-Jentsch, Yarbrough & Scielzo,

2012) since there are critical adjustment issues that first-year students face which often result in stress. University administrators should understand that the most important aspect of retention and satisfaction is an established formal support system for mentoring partnerships (Bean et al., 2014).

Findings

In the quantitative findings students reported that after they participated in the mentoring program, they were:

- more committed to completing medical school;
- more likely to use resources;
- feeling an increased confidence in succeeding in their studies; and
- reporting that peer-mentoring had a positive impact on their learning.

These findings also identified specific ways collaborative support was useful to new students and the resources that were used as they transitioned into a new academic environment. Other elements of the findings included considerations that should be included in the peer-mentoring experience such as the amount of group interaction that the COM Team program afforded. A team-based approach is integrated into the medical school curriculum as noted in the small group instructional method that is used in the Fundamentals of Patient Care course. This group approach is also reflected in the delivery of clinical care to patients in healthcare delivery models. First-year students have the benefit of establishing team-based relationships through the COM Team peer-mentoring program which fosters opportunities for them to learn and develop necessary skills to become a physician. An increase in COM Team meetings was recommended.

The qualitative analysis revealed four themes as characterized by students who participated in the program:

- Peer support
- Camaraderie and sense of community
- Academic guidance and advice
- Confidence in academic abilities

Consistent with research that social isolation is a risk factor for student attrition in medical school (Maher et al., 2013), the qualitative findings confirmed that students were concerned and reported that having a sense of community was an important consideration as they transitioned into school. Dyrbye, et al. (2011) confirmed that medical school distress was associated with burnout, emotional exhaustion, depersonalization, depression, and high levels of stress and these factors are closely associated with suicidal ideation and an increase in dropout rates. In addition, Dyrbye, et al. (2011) also noted that the recommendation of strong student wellness and support programs for all students which is an accreditation standard for US medical schools.

Recommendations

The following recommendations for program refinement included:

- Increase opportunities for individual mentoring instead of group mentoring;
- Increase lunch time meetings;
- Implement plans for initial meetings with new students prior to year one orientation;
- Develop a systematic document for study tips;
- Incorporate more group activities throughout the academic year;
- Enhance the selection process for mentors with new students that have similar interests; and
- Develop a curriculum for a training experience for mentors to help students prepare to meet the expectations of a physician.

Some of the main challenges noted in the findings were the limited number of pre-matriculation events; the lack of a systematic matching criterion for mentors to mentees; and the absence of large group meetings which would require additional funding for expenses related to meals and human resources for program support.

The resulting report brings together findings of the COM Team peer-mentoring program evaluation. The quantitative phase of the mixed-method design consisted of a survey to 179 students. The qualitative phase included interviews from eight students. A thematic analysis of qualitative data was completed using a constant comparative approach. The findings also provided recommendations for program refinement to enhance outcomes in the local educational setting. The evaluation underscores ways the medical school has addressed key issues related to students' transition to the first-year experience and confirms that the program should be an integral part of transitional support initiatives within the medical school.

Background and Purpose

Program Background

In 2006, the administration of the college of medicine of a southeastern academic health sciences university identified multiple transitional challenges that new medical students faced during their first-year of school. The medical school curriculum is rigorous with a demanding time commitment. Some students had difficulty adjusting to a new academic curriculum, blending different study strategies, and adapting to a new learning environment. Some had expressed concerns about anxiety and stress because they did not feel that they had sufficient support during the first-year experience and reported that they felt that they were not prepared for the challenge. The college administrators noted that a number of students disclosed that they isolated themselves until personal or academic problems were reported to the office of the dean (Associate Dean for Students, April 30, 2006). An informal peer-mentoring program had been in existence at the institution since 1996. Student leaders managed the program with relatively limited administrative oversight by the dean's office. In 2007, the college of medicine peer-mentoring program was restructured with central oversight provided by the dean's office. The purpose of the COM Team mentoring experience is to prepare students for academic success by integrating peer-mentoring for support and guidance.

A common practice in peer-mentoring programs is to have advanced students serve as peer mentors whose primary responsibilities include providing guidance and support to alleviate transitional difficulties to foster retention, promote wellness, and strategies for optimal academic outcomes (Brennan et al., 2010; Fullick et al., 2012; LeBlanc, McConnell, & Monteiro, 2014). Eighty second-year students are selected annually and are known as COM Team leaders. The construct of matching mentors with mentees is an orderly configuration that consists of 20 small groups. Each new medical student is assigned to a COM Team group consisting of nine first-year students. The groups serve as support groups for orientation activities and during the first-year. COM Team leaders initiate contact with new students during the summer before matriculation to offer perspectives on transitioning to medical school. Factors about the campus, housing options, and managing the academic demands of school are discussed. Students are also informed about campus resources that are designed to foster academic and personal success. COM Team leaders also implement social support initiatives to foster a sense of belonging and camaraderie. Students who want to help their peers apply to become mentors. Mullen, Fish, and Hutinger (2010) noted that the mentoring relationship is also reciprocal because those who were mentored often desire to serve as mentors to others. The reciprocal approach supports the recruitment process in the COM Team program.

New students work as a team in the Fundamentals of Patient Care (FPC) course and for other team based learning activities throughout the curriculum. In addition to the second year student mentors, two faculty preceptors participate in the program as faculty mentors and serve as facilitators for the FPC course. In medical school, students are required to learn

by doing, and the FPC course allows for physical, intellectual and emotional engagement as learning is most effective when students are engaged, responsive, and reflective (Knowles, Holton, & Swanson, 2014).

The COM Team program has never had a formal assessment to identify opportunities for improvement or to confirm or negate its value for the first-year experience. With increased fiscal oversight, senior administrators often require data to determine the worth of a program and use the documentation to identify recommendations to enhance the existing experience. A program evaluation for the mentoring program was determined to be necessary as the program receives funding from the college of medicine for all operating expenses. This evaluation report for this study presented an analysis of the perceptions of mentoring as related to satisfaction with programming efforts and considerations about the students' transition into the first-year of medical school.

Purpose of Evaluation

To determine if students perceive the mentoring program as valuable in their transition to medical school during the first-year experience and to identify areas for overall program enhancement was the purpose of the evaluation. The Association for American Medical Colleges (AAMC) and the Liaison Commission on Medical Education (LCME), the accreditation commission of the United States and Canadian medical schools, closely monitor the institutional attrition and indebtedness rates. With increased fiscal oversight due to recent budget cuts, senior administrators require data to determine the worth of a program and identify recommendations for refinement. A program evaluation to document the strengths and contributions of this mentoring program is needed because the program receives funding from the college of medicine for all operational expenses. The evaluation report for this study presented an analysis of the perceptions of mentoring as related to satisfaction with programming efforts and considerations about the students' transition into the first-year of medical school.

Program Description

The purpose of the COM Team mentoring experience is to prepare students for academic success by integrating peer-mentoring for support and guidance. Eighty second-year students are selected annually and are known as COM Team leaders. The construct of matching mentors with mentees is an orderly configuration that consists of 20 small groups. Each new medical student is assigned to a COM Team group consisting of nine first-year students. The groups serve as support groups for orientation activities and during the first-year. COM Team leaders initiate contact with new students during the summer before matriculation to offer perspectives on transitioning to medical school. Factors about the campus, housing options, and managing the academic demands of school are discussed. Students are also informed about campus resources that are designed to foster academic and personal success. COM Team leaders also implement social support initiatives to foster a sense of belonging and camaraderie.

Evaluation Methods

Guiding Research Questions

Assessing the program to determine its overall effectiveness necessitated a mixed-methods approach that combined data from a quantitative survey and qualitative interviews from participants who were also stakeholders. This program evaluation was guided by quantitative and qualitative questions outlined below.

Quantitative Research Questions

The central research question was:

1. What is the effect of the peer-mentoring experience on students' transition into medical school?

To determine the effect of peer-mentoring in the first-year experience, the following sub-questions were incorporated into the study:

2. What were students' confidence levels before beginning medical school?
3. What were students' confidence levels after participation in the peer-mentoring program?
4. What is the difference in confidence levels of medical students before beginning medical school compared to after participating in the mentoring program?

H_0: There is no difference in confidence levels of medical students before beginning medical school compared to after participating in the mentoring program.
H_a: Students had higher confidence levels after they participated in the peer-mentoring program than they had before they participated in the program.

5. How did the peer-mentoring program affect the students' learning experience?
6. How do students value the peer-mentoring experience?

Qualitative Research Questions

To add depth to the quantitative survey results, an existing qualitative instrument by Andrews and Clark (2011) will be used to create an interview guide and to answer questions related to the students' perceptions of the program. Some of the qualitative questions are outlined below.

1. What were students' concerns about beginning medical school?
2. What supports do students value and perceive as beneficial to their transition to medical school?
3. What effect did peer-mentoring have on students' academic performance in the first semester of medical school

Data Collection Methods

A mixed-method data collection process followed a sequential process that included the administration of a quantitative pre-established instrument that consisted of a series of attitudinal questions associated with the objectives of the mentoring experience. Permission to use the Peer-mentoring Evaluation Toolkit (PMET) instrument was obtained from Creative Commons® the licensor of the assessment tool. The second section of the PMET is a qualitative interview guide developed as part of the Peer-mentoring Works!® Project. The interview guide consisted of a pool of questions to be used during interviews for the qualitative research method. For interviews, the authors of the PMET indicated that institutions may adapt the interview guide for their own purposes. The interview questions were developed to examine which concerns they had about beginning school; the extent the peer-mentoring experience assisted in their transition to medical school

The instrument has seven sections. Section 1 included background information of participants regarding their gender, ethnicity, and age. This information was collected and used for data analysis purposes. Section 2 had six items related to students' confidence prior to matriculation. Section 3 contained five items related to students' perceptions about their participation in the mentoring experiences. Section 4 consisted of four items related to their participation in the mentoring program allowed the subjects to provide data about their experiences. Section 5 consisted of six items that addressed the possible influence of peer-mentoring on learning experiences and Section 6 contained six items about the value of peer mentoring. Section 7 included reflective questions about the student's experience at the university and if they considered leaving school and if so, what influence did the mentoring program have on their decision to remain enrolled. Sections 2, 3, 5, and 6 of the instrument consisted of a 5-point Likert-scale formatted statements with scores for each item ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Section 4 of the instrument consisted of a 5-point Likert-scale formatted statements with scores for each item ranging from 1(*strongly decreased*) to 5(*strongly increased*). Scores were calculated for each section and the value of each section were determined by the sum of scores and divided by the number of items.

Data source

The data consisted of quantitative data from 179 second-year medical students and qualitative data from 8 students who participated in the peer-mentoring program.

Sampling Procedures

A sample for the quantitative portion of the study was obtained through convenience sampling. A purposive sample of students was obtained by inviting students who completed the qualitative portion of the study.

Data Processing

Quantitative Analysis

The statistical program, SAS® (SAS Institute, Cary, NC) was used to analyze quantitative data. A composite score of the Likert scale survey was calculated and data from surveys were analyzed using descriptive statistics to describe responses for research questions 1, 2, 3, 5 and 6. For research question 4, a statistical analysis was conducted using a *t* test that included the results from Question 6 in Section 2 of the survey and Question 5 in Section 3 of the survey.

Qualitative Analysis

Upon completion of interviews, transcripts were read and reviewed. Using constant comparison to define coding categories that were relevant to the research questions, this allowed opportunities to explore possible themes. The themes were organized based on consistency of responses.

Quantitative Results

Student retrospective confidence ratings before starting medical school.

For the quantitative analysis students were asked to rate each item from 1 (*strongly disagree*) to 5 (*strongly agree*). Table 2 shows students' mean responses related to their perceptions prior to beginning medical school.

Table 2

Mean Responses Related to Students' Feelings Before Medical School

Item	Mean	SD
Before starting medical school		
was anxious about making new friends.	3.09	1.14
felt prepared for medical school.	3.46	0.92
was anxious about adjusting to medical school.	3.76	0.92
felt confident I would be supported at this medical school	3.79	0.78
was apprehensive about starting school.	3.02	1.06
felt confident in succeeding in my studies	3.75	0.82

The ratings ranged from 5 (*strongly agree*) to 2 (*disagree*) with the following statements regarding students' feelings before engaging in the mentoring program: experiencing anxiety about making new friends (46%), felt that they were prepared for medical school (57%), experienced anxiety about adjusting to school (72%), felt confident they would be supported at medical school (67%). In addition, over 37% were apprehensive

about starting medical school. Over 70% indicated that they were confident in succeeding in their studies.

These findings suggest the majority of students felt prepared for school and that they would succeed in their studies. Despite that, almost half of students reported anxiety related to making new friends and over a third reported feeling apprehensive about starting medical school. However, the majority felt confident that they would have support at medical school. One potential explanation of these findings could be that the message of support is extensively conveyed during recruitment and orientation. This could have led to an elevated level of confidence that they would be supported and that they would do well, despite their concerns. The results here addressed the research questions related to students' confidence levels before beginning medical school.

Students' ratings after participating in the peer-mentoring program. Following their participation in the program, ratings ranged from 5 (*strongly agree*) to 2 (*disagree*) that the COM Team mentoring program: made them feel part of medical school (79%), would utilize resources of support that are available (69%), found their time at medical school enjoyable (84%), were more committed to completing medical school (68%), and felt confident in succeeding in their studies (77%). Table 3 presents students' mean responses following their participation in the peer-mentoring program.

Table 3

Mean Responses Following Students' Participation in the Peer-mentoring Program

Item	Mean	SD
As a result of participating in the COM Team mentoring program		
feel a part of this school.	3.85	0.72
feel I am making more use of support available	3.76	0.80
am finding my time at school enjoyable.	4.08	0.74
am more committed to completing medical school.	3.94	0.87
feel confident in succeeding in my studies.	3.94	0.75

For items regarding the impact of peer-mentoring in the first-year experience, the vast majority of students reported positive effects. Similar to the previous report of feeling confident in succeeding in their studies, the majority of students reported that they felt confident upon participating in the peer-mentoring program. This may have been influenced by working with peers who provided advice regarding their transition to school and the resources they used to be successful. This is consistent with over 70% of students' reporting that they would utilize resources that are available. Furthermore, the interaction with their peers may have fostered a greater commitment to their academic goal of completing medical school. These quantitative findings addressed the central research question related to the

impact of the peer-mentoring experience on students' transition into medical school as well as the third research question.

Comparison of confidence ratings prior to and after engaging in program. The mean responses of confidence ratings regarding being successful in medical school prior to beginning medical school ($M = 3.75$) and after participating in the COM Team peer-mentoring program ($M = 3.94$) were compared to address Research Question 4. No statistically significant differences were found, $t = -.83$, $p = .4078$. Therefore I was unable to reject the null hypothesis.

These findings suggest that there is no difference in confidence levels prior to starting medical school and after participating in the program. However, there are other potential explanations for these findings. As noted earlier, the majority of students (70%) reported a high level of confidence in succeeding in their studies prior to school. This number might have been impacted by the culture of support that had been presented to them during interviews and in their interactions with students and administrators prior to starting medical school. Given this high level of confidence, it would be difficult to detect increases.

The findings related to the hypothesis testing may suggest that the impact of peer-mentoring may have been more beneficial for some than for others. In addition the high level of initial confidence in their studies may have made the potential difference small. The data collection is retrospective which could also have had an impact on the findings. After successfully completing their first year, their retrospective report of their confidence level may be elevated. Future studies should consider longitudinal assessments with multiple time points, including at least pre and post intervention.

Impact of peer-mentoring related to confidence. In Section four, students were asked to rate each item from 1 (*significantly decreased*) to 5 (*strongly increased*) concerning the impact of peer-mentoring as related to their confidence as a result of participating in the COM Team peer-mentoring program. Ratings ranged from 2 (*decreased*) to 5 (*strongly increased*) related to students' confidence: in succeeding in their studies (56%), about their academic skills (50%), in the subject knowledge (65%), and in using student services (54%). Table 4 presents the impact of peer-mentoring and confidence levels related to academics.

Table 4

Mean Responses Related to Students' Confidence Levels

Item	Mean	SD
As a result of participating in the COM Team peer-mentoring program		
My confidence in succeeding in my studies has	3.56	0.70
My confidence about my academic skills has	3.52	0.72
My subject knowledge has…	3.87	0.75
My confidence in using student services has	3.60	0.67

In contrast to the *t* test reported above, the majority of students reported that their confidence in succeeding in their studies had 4 (*increased*) or 2 (*decreased*). The majority of students also reported that their confidence about their academic skills and student services had increased. Given that the mission of the college of medicine is to educate future physicians, two-thirds of students reported a strong increase in subject knowledge as a result of participating in peer mentoring. These findings suggest that the students' awareness of the subject knowledge related to their studies was influenced though the peer-mentoring program. These quantitative findings addressed Research Question 4, related to students' confidence levels after participation in the peer-mentoring program.

Impact of peer-mentoring related to students' learning. Data from quantitative analysis revealed that some participants 5 (*strongly agreed*) or 4 (*agreed*) that the program had a positive impact related to students' learning. Ratings ranged from 2 (*disagree*) to 5 (*strongly agree)* regarding the following statements: peer-mentoring had a positive influence on the way I approached learning (58%), having a peer mentor had been a helpful learning experience (77%), the mentoring experience has helped me to learn independently (52%), and students reported that they expected that their grades would improve as a result of peer-mentoring (39%). Table 5 presents mean responses related to the impact of peer-mentoring on students' learning.

Table 5

Mean Responses Related to Peer-mentoring on Students' Learning

Item	Mean	SD
Impact of peer-mentoring related to students' learning		
Peer-mentoring has positively influenced the way I approach learning	3.61	0.78
Working with a peer mentor has been a positive learning experience.	3.91	0.77
Peer-mentoring has helped me to learn independently.	3.50	0.86
feel my grades will improve as a result of peer mentoring.	3.26	0.87

Similar to previously reported positive findings, these results suggest that the majority of students (almost 80%) reported that having a mentor had been a positive learning experience and the majority reported that peer-mentoring has helped them to learn independently. Independent and self-directed learning are critical for those seeking to be a physician. It should be noted that almost 40% of students reported that peer-mentoring has positively impacted their academic record. These findings addressed, Research Question 5, the research question related to the peer-mentoring program affect the students' learning experience. These findings are also consistent with findings from the literature that students in higher education report positive effects from engaging in mentoring experiences.

Students' responses related to the value of peer mentoring. Participants' ratings ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) with the following statements: the COM Team program was responsive to my issues (57%), I can relate to my COM Team mentor (77%), I experienced anxiety about adjusting to school (72%), I felt that working with a peer has been useful (81%), I could talk to my COM Team mentor if I was worried (67%), I felt comfortable working with COM Team mentors (74%), and I felt that I could seek advice from my COM Team mentor about concerns that I would not address with administrators (66%).

Table 6

Mean Responses Related to the Value of Peer Mentoring

Item	Mean	SD
The Value of COM Team peer-mentoring		
COM Team peer-mentoring is responsive to my individual needs.	3.49	0.84
I can relate to my COM Team mentor.	3.82	0.87
Working with another student has been useful.	3.97	0.70
I feel I can talk to my COM Team mentor if I am worried.	3.67	0.89
I feel comfortable working with my COM Team mentors.	3.83	0.80
I can talk to my COM Team mentor about things I would not discuss with a member of staff	3.72	0.90

The results suggest that a significant number of students found that the mentoring program was responsive to their individual needs as new medical students. Perhaps this was the result of the matching ratio between first-year students and mentors which allowed for individualized attention to first-year medical students. The unique attention may have afforded them the opportunity to establish a rapport which resulted in them relating to, feeling comfortable communicating with, and working with a peer mentor. Another finding was that some students reported that they were apprehensive about beginning medical school and some experienced anxiety; having a mentor to talk to if they were worried, allowed a level of support that appeared to be beneficial to them. Over 81% of students' reported that working with a peer had been useful to them as they confirmed the value in working with

their peers. The findings addressed the sixth research question related to the value of the mentoring experience.

Further, open ended comments confirmed some of the challenges associated with the COM Team peer-mentoring program. One of the main challenges had been the limited number of pre-matriculation events, the lack of a systematic matching criterion for mentors to mentees; and the absence of large group meetings which would require additional funding for expenses related to meals and related program support. In addition to opportunities for program refinement, these results consistently confirmed that the COM Team positively impacted the students' transition. Based on this fact, the program should be an integral part of transitional support initiatives within the medical school.

Open ended comments from the quantitative survey revealed some benefits and challenges associated with the peer-mentoring program.

Some noted benefits were that the program:
- was responsive to individual needs;
- allowed opportunities to establish a rapport with mentors;
- allowed a level of support that appeared to be beneficial; and
- students felt comfortable working with a peer mentor.

Some of the main challenges noted were:
- limited number of pre-matriculation events;
- the lack of a systematic matching criterion for mentors to mentees; and
- limited amount of large group meetings.

Qualitative Results

The three qualitative research questions focused on students' concerns about beginning medical school, the supports students needed while transitioning into medical school, and the impact of peer-mentoring on their academic performance. Some of the main concerns that students identified were feeling anxious about making new friends in a social setting. Several students reported experiencing anxiety regarding not having sufficient support as they did in their undergraduate studies. In addition, some expressed concern over having a lack of understanding of the academic demands of medical school.

Concerns identified by students. Some of the main concerns that students identified were feeling anxious about making new friends in a social setting. Several students reported experiencing anxiety regarding not having sufficient support as they did in their undergraduate studies. In addition, some expressed concern over having a lack of understanding of the academic demands of medical school. Some described adjustment related challenges in having to adapt to a new way of approaching their academics due to the volume of information in the curriculum. For example, some students never had to

study at the level that was required for medical school, some never asked for help from peers, nor had they used tutoring services.

Support students valued as beneficial to their transition. In addition to the concerns presented during the interviews, students identified numerous supports that they valued and perceived as beneficial to their transition to medical school. The following four themes emerged which addressed Research Question 2: peer support, camaraderie and sense of community, academic guidance and advice, and confidence in academic abilities.

The impact peer-mentoring had on students' academic performance. Students identified several ways peer-mentoring had an impact on their academic performance in the first semester of school. Some students reported that they implemented different study strategies as a result of the relevant guidance that they received through academic advising and used the recommended learning resources. For example, one student said, "It was helpful to have a COM Team mentor because they would give us like a breakdown of what we should focus on while studying and then they were giving extra advice that I wouldn't have heard from other people." Students indicated that they were able to organize their study time to focus on the most relevant content. Students reported that these factors positively impacted their academic performance during the first semester of medical school.

In addition to the concerns presented during the interviews, students identified numerous supports that they valued and perceived as beneficial to their transition to medical school. The following four themes emerged: peer support, camaraderie and sense of community, academic guidance and advice, and confidence in academic abilities. Students reported that peer support was a significant benefit to their transition to medical school; having a second year student provide guidance was encouraging and reassuring; working with their peers impacted their confidence in succeeding in their studies; and because of the rigor of the medical school curriculum, having a sense of community that fostered camaraderie was a factor in selecting to attend the medical school.

Furthermore, students identified several ways peer-mentoring had an impact on their academic performance in the first semester of school. Some students reported that they implemented different study strategies as a result of the relevant guidance that they received through academic advising and used the recommended learning resources. They also indicated that they were able to organize their study time to focus on the most relevant content.

These qualitative findings of the study suggest that the program offers the type of support that is recommended for all medical schools and students' ratings confirmed that the experience was valuable to their first-year experience.

Limitations

The study is limited to an evaluation of a peer-mentoring program at a southeastern medical school. The findings may not apply to larger medical schools because of infrastructure, personnel, and administrative considerations. The sample consisted of second year medical students and their perspectives were limited because they were beginning their medical educational studies. The participants also represented a narrow range of age and academic experiences. A study with a larger sample could include more students from different colleges at the institution who could provide a broader, and more diversified perspectives about the impact of peer mentoring. Further, while this study is limited to the mentoring aspect related to transitioning to the first-year experience, future studies could incorporate a larger sample that could yield a greater depth of information about attitudinal beliefs and perceptions that influence professional development and career decisions and the impact of mentoring in the first-year as it relates to relieving levels of anxiety and stress experienced by medical students. The limitations could also lead to various directions for future research related to evaluation approaches to assess the perceptions about the impact and value of mentoring in the various disciplines in higher education.

Recommendations for Program Refinement

The following recommendations for program refinement included:

- Increase opportunities for individual mentoring instead of group mentoring
- Increase lunch time meetings
- Implement plans for initial meetings with new students prior to year one orientation
- Develop a systematic document for study tips
- Incorporate more group activities throughout the academic year
- Enhance the selection process for mentors with new students that have similar interests
- Develop a curriculum for a training experience for mentors to help students prepare to meet the expectations of a physician.

Conclusion

This report represents the first empirical examination of outcomes of the program for first-year medical students. In addition to opportunities for program refinement, students indicated that having a peer mentor was a positive experience. The program has been successful in making a positive impact in key areas of enhancing the new students' sense of belonging and fostering a sense of confidence in succeeding in medical school. The findings consistently confirmed that the program positively impacted the students' transition and should be an integral part of transitional support initiatives within the medical school. These results serve as the basis for continued evaluation of the program's impact in the first-year experience.

PowerPoint Presentation for the Program Evaluation Report

Peer Mentoring in the First Year Experience

A Program Evaluation of the COM TEAM Peer mentoring program

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Evaluation Report Overview

- This report provides findings from the program evaluation of the COM TEAM Peer mentoring program.
- The purpose of the evaluation was to examine whether the mentoring experience was perceived as helpful to new students and to confirm if the program can be improved.
- This report includes the background and purpose of the program, the evaluation methods and results, and conclusions and recommendations.

Program Background

- An informal peer-mentoring program had been in existence since 1996.
- In 2006, the administration of the college of medicine identified multiple transitional challenges that new medical students faced during their first year of school.
- In 2007, the peer mentoring program was restructured with central oversight provided by the dean's office.

Program Purpose and Design

- The purpose of the COM TEAM mentoring experience is to engage new students in their learning environment through peer mentoring.
- Eighty second-year students are selected annually and are known as COM TEAM leaders.
- The construct of matching mentors with mentees is an orderly configuration that consists of 20 small groups.
- The groups serve as support groups for orientation activities and during the first year.

Program Objectives

- Provide information on how to access support services;
- Provide general advising regarding coping strategies and transitional concerns;
- Establish rapport with new students and foster dialogue
- Increase student awareness of the necessity of emotional health, wellness and physical fitness.

Challenges for New Medical Students

- Learning how to balance the rigorous curriculum
- Managing academic requirements
- Becoming accountable to professional expectations

Importance of Socialization

Socialization of new students should be an institutional goal (Fullick, Smith-Jentsch, Yarbrough& Scielzo, 2012) since there are critical adjustment issues that first year students face which often result in stress.

The COM TEAM Program is designed to foster socialization of new students.

Central Research Question

The central research question guiding this project is:

What is the impact of the peer mentoring experience on students' transition into medical school?

Research Questions

To determine the impact of peer mentoring in the first year experience, the following sub-questions will be incorporated into the study:

- What were students' confidence levels before beginning medical school?
- What were students' confidence levels after participation in the peer mentoring program?
- How did the peer-mentoring program affect the students' learning experience?
- How do students value the peer mentoring experience?

Qualitative Research Questions

- What were students' concerns about beginning medical school?
- What supports do students value and perceive as beneficial to their transition to medical school?
- What impact did peer-mentoring have on students' academic performance in the first semester of medical school

Primary Data Sources

- A survey of second year students
- Student interviews
- Open ended comments
- Data from the quantitative and qualitative findings

Data Collection Method

A mixed-method data collection process followed a sequential process that included the administration of a quantitative pre-established instrument that consisted of a series of attitudinal questions associated with the objectives of the mentoring experience.

Key quantitative findings

Students reported:

- feeling more committed to completing medical school;
- feeling more likely to use resources;
- feeling increased confidence in succeeding in their studies; and
- reporting that peer mentoring had a positive impact on their learning.

Qualitative Analysis

Four key themes were identified by students who participated in the program:

- Peer support
- Camaraderie and sense of community
- Academic guidance and advice
- Confidence in academic abilities

Discussion

- The project was the first formal evaluation of a peer mentoring program for first year medical students.
- The intentional focus of this research was to better understand the impact of peer mentoring in the first year experience.
- The findings identified specific ways collaborative support was useful to new students as they transitioned into a new academic environment.

Limitations

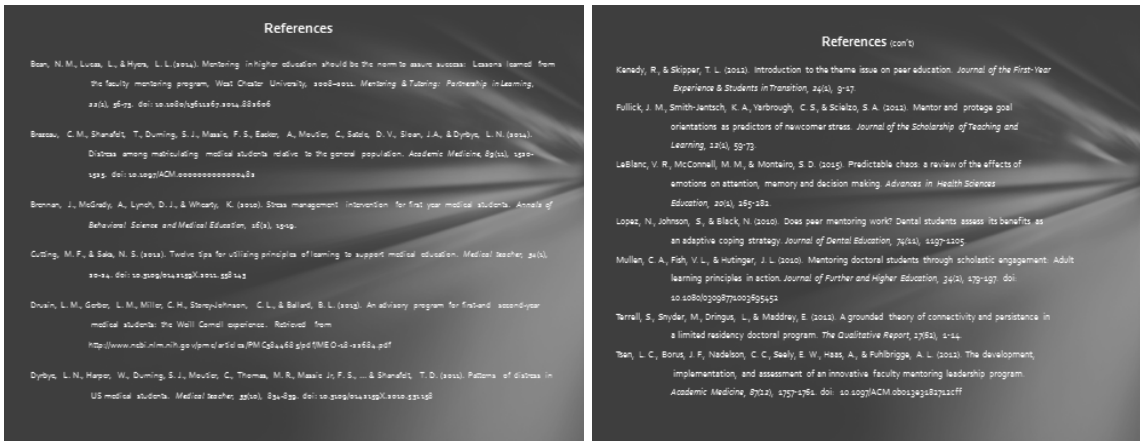
- The study was limited to an evaluation of a peer-mentoring program at a southeastern medical school.
- The findings may not apply to larger medical schools because of infrastructure, personnel, and administrative considerations.
- The sample consisted of second year medical students and their perspectives were limited because they were beginning their medical educational studies.
- The participants also represented a narrow range of age and academic experiences.

Recommendations

- Increase individual mentoring instead of group mentoring;
- Increase lunch time meetings;
- Implement plans for initial meetings with new students prior to year one orientation;
- Develop a systematic document for study tips;
- Incorporate more group activities throughout the year;
- Enhance the selection process for mentors with new students that have similar interests; and
- Develop a curriculum for a training experience for mentors to help students prepare to meet the expectations of a physician.

Conclusions

- The COM TEAM Peer mentoring program has been successful in making a positive impact in key areas of enhancing the new students' sense of belonging and fostering a sense of confidence in succeeding in medical school.
- The findings consistently confirmed that the program positively impacted the students' transition and should be an integral part of transitional support initiatives within the medical school.



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Appendix B: Peer-mentoring Works® Survey

Peer-mentoring Evaluation

Adapted from: Jane Andrews & Robin Clark: Peer-mentoring Evaluation

This questionnaire has been designed for you to tell us more about your experiences in the COM Team peer-mentoring program. This survey was developed out of the original survey used in the Peer-mentoring Works Project in the United Kingdom by Jane Andrews & Robin Clark. The Office of Assessment and Evaluation adapted the survey for use in this research project and some items have been amended to ensure readability.

Context - Background

The survey is divided into six sections:

1. Background
2. Confidence prior to beginning medical school
3. Perspective about participating in the peer-mentoring program
4. Impact of peer mentoring
5. The influence on peer-mentoring on learning experiences
6. The value of peer mentoring
7. Looking back: On peer-mentoring and your experience at this medical school

The ***questionnaire should take no more than 10 minutes to complete, as each section is very short.*** Please answer as honestly as possible. Your identity will remain anonymous and the data stored in accordance with the Data Protection Act, 1998.

Thank you very much for your time.

Section 1: Background Details

1. **What is your gender?**

   Male Female

2. **What is your ethnicity?**

SECTION 2: Before starting medical school

Please indicate your level of agreement / disagreement.

Before starting medical school…

1. **I have been anxious about making new friends**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5	4	3	2	1

2. **I have felt prepared for medical school**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

3. **I have been anxious about adjusting to medical school**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5	4	3	2	1

4. **I have felt confident I would be supported at this medical school**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

5. **I have been apprehensive about starting medical school**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5	4	3	2	1

6. **I have felt confident in succeeding in my studies**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5	4	3	2	1

Section 3: Impact of peer-mentoring
Please indicate your level of agreement / disagreement.

As a result of participating in the COM Team peer-mentoring program...

1. **I feel part of this medical school**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

2. **I feel I am making more use of the opportunities for support available at this school**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

3. **I am finding my time in medical school enjoyable**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

4. **I am more committed to completing medical school**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1	2	3	4	5

5. **I feel confident in succeeding in my studies**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5	4	3	2	1

Section 4: Impact of peer-mentoring related to confidence

As a result of participating in the COM Team peer-mentoring program. Please indicate whether your confidence has increased or decreased.

1. **…my confidence in succeeding in my studies has...**

Significantly decreased	Decreased	Not changed	Increased	Significantly increased
1	2	3	4	5

2. **...my confidence about my academic skills has...**

Significantly decreased	Decreased	Not changed	Increased	Significantly increased
1	2	3	4	5

3. **…my subject knowledge has...**

Significantly decreased	Decreased	Not changed	Increased	Significantly increased
1	2	3	4	5

4. **...my confidence in using student services has...**

Significantly decreased	Decreased	Not changed	Increased	Significantly increased
1	2	3	4	5

Section 5: Impact of peer-mentoring related to learning

Please indicate your level of agreement / disagreement.

1. Peer-mentoring has positively influenced the way I approach learning

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

3. Working with a peer has been a positive learning experience

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

4. Peer-mentoring has increased my interest in my subject area

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

5. Peer-mentoring has helped me learn independently

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

6. **I feel my grades will improve as a result of peer mentoring**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Section 6: The Value of peer-mentoring

Please indicate your level of agreement / disagreement.

1. Peer-mentoring is responsive to my individual needs

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

2. I can relate to my mentor / mentee

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

3. Working with another student has been useful

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

4. I feel I can talk to my mentor if I am worried

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

5. I feel comfortable working with my mentors

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

6. I can talk to my mentor about things I would not discuss with a member of staff

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Section 7: Looking back – Peer Mentoring, Learning & Your First-year Experience

These questions are voluntary, and as with the rest of the questionnaire, your answers will be completely anonymous.

1. **During your time at school have you ever thought about leaving?**

   Yes No Not Sure

If yes, please when and why below

2. **If you have thought about leaving, did peer-mentoring experience influence your decision to stay?**

   Yes No Not applicable

If yes, please explain how

3. **How can the COM Team peer-mentoring program be improved?**

Thank you for completing this questionnaire. Your answer will help us improve the program and meet the needs of future students.

If you have any queries please contact Myra Haney Singleton at myra.haneysingleton@waldenu.edu

Appendix C: Qualitative Interview Questions

Qualitative Research: Individual Interview Guide
The guide utilizes semi-structured interview techniques. The onus is on the individual interviewer to use and adapt the questions as appropriate. This approach provided the participants with the opportunity to fully explore the issues they feel important, whilst allowing the interviewers the means by which all of the relevant matters could be covered in some depth.

Five themes will be addressed:
1. Before University
2. Beginning medical school – Transition
3. Reflections of Peer Mentoring
4. Outcomes of Peer Mentoring

Before University
- Why did you select to study at this medical school?

Prompts … [if needed may include…]
Location - Quality of medical education training

Beginning medical school – Transition
How were you first in touch with your mentor?

Prompts [if needed may include…]Phone, Email, Facebook, Face-to-face

Reflections of Peer Mentoring

What were students' concerns about beginning medical school?

What supports do students value and perceive as beneficial to their transition to medical

school?

What supports do students value and perceive as beneficial to their transition to medical

school?

Did you talk to your mentor about concerns about your studies?

Outcomes of Peer Mentoring

Would you recommend the mentoring program to future students? Why / why not
Any other issues you would like to raise or questions…

Appendix D: Approval to Use the Peer-mentoring Evaluation Toolkit (PMET) Instrument

Myra HaneySingleton <myra.haneysingleton@waldenu.edu>

Request for Data regarding the Peer-mentoring Evaluation Toolkit (PMET) instrument

Andrews, Jane <j.e.andrews@aston.ac.uk> Mon, Jun 30, 2014 at 3:49 PM

To: Myra HaneySingleton <myra.haneysingleton@waldenu.edu>
Cc: "Clark, Robin" <R.P.Clark@aston.ac.uk>

I am not sure what data you are after? I cannot and will not give you access to the raw data

All of the data we are in a position to publish has been published (in journals, reports and conference proceedings). The rest, including institutional and personal details etc, is subject to the UK Data Protection Act.

If you want to use our research instruments you have my permission to do so providing you cite the reference appropriately

Jane

Sent from my iPhone
[Quoted text hidden]

Myra HaneySingleton <myra.haneysingleton@waldenu.edu> Mon, Jun 30, 2014 at 5:25 PM

To: "Andrews, Jane" <j.e.andrews@aston.ac.uk>
Cc: "Clark, Robin" <R.P.Clark@aston.ac.uk>